Australian National University

Research School of Biology Newsletter

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From the Director

Well, here we are at the end of another busy teaching semester. It has been a real pleasure to do our job – facing real students, in real classrooms and labs and on field trips. I had the pleasure of writing and delivering a new block of lectures on variation and evolution in Human Biology (BIOL1008) – the students who attended were engaged and asked great questions. My thanks to all the professional staff, demonstrators and tutors, and teaching academics who contributed. I particularly would like to call out the BTLC administration team who once again rose to the challenge. Once exams and grading are done, we all can breathe a bit pending semester 2.

I want to note a pending change in the RSB leadership team. After many, many years of sterling service, Spencer Whitney will be stepping down as our Associate Director HDR – but he will continue to convene the PS HDR program. Spencer has really excelled, maintaining high standards across our program and ensuring that RSB does well in the ANU-wide scholarship competition. But what stands out to me is his obvious pleasure in creating a supportive environment – including many social functions on campus and during retreats. Hard shoes to fill – but Celeste Linde – currently HDR convener in EE and from July 1 the new AD-HDR for the School – is up for it. Please join with me in thanking Spencer for a job well done and supporting Celeste as she settles into this important role.

There is also significant turnover in Ecology & Evolution. After three years of outstanding service, Michael Jennions is about to step down as Head of Division. Michael steered the Division through the trials of covid-lockdowns and has worked really hard to restore the academic vibe and collegial spirit of E&E. His success in doing so was evident at the wonderful end-of-semester E&E seminar and social event last week (with thanks also due to Ondi). So what is next..? Back to the future.... Scott Keogh has kindly agreed to step in as HoD from July 1 to the end of the year. Then Rod Peakall will set up for three years from Jan 1 2024. I'm sure E&E will continue to prosper under their steady guidance.
Jack Egerton, E&E's long-standing Senior Technical Officer, is transitioning (on a one year trial) to a new role as lead of a combined Fenner/RSB Field Services team. Like Jan before him, Jack is at the very core of E&E and his positive energy will be missed. He already supported field work across all of RSB and so this broader role is a natural progression. And he remains with us! We all are very grateful to Niccy Aitken, Manager of the Ecogenomics and Bioinformatics Lab, for stepping into the E&E-DSTO role for this period. Like Jack, Niccy is extremely capable and engaged and I'm sure will do very well in supporting E&E researchers over the coming year. And where is Monica? Taking up an exciting position in New Caledonia for a couple years, after which we hope that she will return to the mother ship. There are also changes afoot in the leadership of E&E – more on that in the next newsletter.

RSB Executive had a quiet month in April but has been busy through May focussing on both immediate practical issues (e.g lots of shuffling on lab space in Linnaeus, teaching in China for the Shandong program etc.) and more strategic matters. The latter include bolstering research infrastructure in key areas and engaging Group Leaders in discussions about current and emerging research priorities for RSB. Much of these discussions centre on how to support increased translational activities - especially industry-facing research - while maintaining our strength in fundamental research. I will go into these matters more in meetings with staff during June. A short summary of outcomes from RSB Executive meetings can be found here.

Congratulations

RSB has been home to four ARC Laureate Fellows - **Barry Pogson** (PS), **Craig Moritz** (E&E), **Loeske Kruuk** (formerly E&E) and **Hanna Kokko** (formerly E&E). In May, Loeske Kruuk was elected as a Fellow of the Royal Society of the UK for her contribution to the analysis of quantitative genetics in natural populations and its use in testing fundamental evolutionary theory. Elsewhere, Hanna Kokko was appointed an Alexander von Humboldt Professor to establish a new Institute for Quantitative and Computational Bioscience at the Johannes Gutenberg University in Mainz, Germany.

As previously announced, the 2023 Ralph Slatyer Medal winner is Professor Jennifer Martin. The award ceremony took place this month where Professor Martin talked about her research on protein crystallogrpahy and was then presented the medal by Vice-Chancellor Brian Schmidt and representing the Slatyer family, Tony Slatyer. The seminar and presentation can be seen here.

L to R: Tony Slatyer, Professor Jennifer Martin, Vice-Chancellor Professor Brian Schmidt.

Grants awarded

Ryan P, O'Donnell (Linde Group, E&E) has been awarded an ABRS National Taxonomy Research Grant for project entitled *Systematics of Australian mycorrhizal Ceratobasidium (Ceratobasidiaceae),* $16,818.

Ben Corry (BSB), Michel Gantier and Julian Ellyard have been awarded 2022 Ideas Grant - *Therapeutic targeting of TLR7 in autoimmunity* $1,496,654.00 ($243,909 to RSB).

Celeste Linde (E&E) has been awarded a Hermon Slade Foundation grant for *Identifying genes involved in mycorrhizal fungal recognition and nutrient exchange in an Australian orchid-fungal interaction, $50,000.*

PhDs awarded

Yun Hsiao (Rowell Group, E&E) *Systematics and evolutionary biology of the Weevils associated with cycads in Australia.*

News

The ARC Training Centre for Future Crops Development held its first annual meeting 2-4 May, gathering most of the partners including ANU, University of Adelaide, CEAT, APPF, NSW DPI, CSIRO, commercial breeding companies and industry peak bodies. The goal of the meeting was to foster better understanding and collaboration between academics and industry, through diverse workshops.

Maximising the opportunity with Centre partners in Canberra, we are proud to announce that the ARC Training Centre for Future Crops Development has been officially launched at an event on 2 May.

We would like to thank the speakers for this event: **Prof Kiaran Kirk**, **Prof Ute Roessner, Prof Barry Pogson**, and ARC CEO Ms Judi Zielke PSM. Thanks to all the attendees, including **Prof Craig Moritz**, Senator David Pocock, and research and industry leaders. Please find our Centre video released at the launch.

Spencer Whitney (PS) will be working with a team of researchers from the Massachusetts Institute of Technology (MIT) and the Scripps Research Institute using interdisciplinary approaches to improve the efficiency of the photosynthetic enzyme Rubisco. The USD$1.5 million 3-year program is the inaugural Grand Challenge project funded by the Jameel Water and Food Systems Lab (J-WAFS) at MIT.

Welcome

Welcome to **Sadia Majeed** (Furbank Group, PS) as a PhD student, working with the ARC Training Centre for Future Crops Development. Previously, she has been actively engaged in agriculture advisory service as an agriculture officer with a focus on improving productivity and sustainability of farms. She completed her Bachelors and Masters in agronomy with distinction from The Islamia University of Bahawalpur, Pakistan. Her specialisation is plant physiology and biochemistry and has published research on mechanisms responsible for increasing abiotic stress tolerance in crops.

Welcome to **Hendry Susila** (Pogson Group, PS) as Innovation Fellow, working with the ARC Training Centre for Future Crops Development. Hendry spent his Ph.D. studying basic science using Arabidopsis. He is excited to apply the knowledge from Arabidopsis to crops and learn about transgenesis and gene editing technologies.

Welcome to **Nay Chi Khin** (Pogson Group, PS) as Innovation Fellow, working with the ARC Training Centre for Future Crops Development. She will be based in Wagga Wagga working with DPI NSW. Nay Chi has a background of molecular biology and protein biochemistry. She has CRISPR editing experience in mice, mammalian cell cultures and model plant species, such as Arabidopsis, liverworts and mosses. Nay Chi's vision during her time in the Centre is to set up the pipeline of precise gene editing protocols in canola and chickpeas with optimised transformation and regeneration of plants.

Farewell

Farewell to **Ondi Crino** (Noble Group, E&E) who has taken a leading role in RSB and E&E. She'll be moving to Flinders University to start up her own lab. Congratulations Ondi.

Farewell to **Damien Esquerre** (Keogh Group, E&E) who is heading to the University of Wollongong to set up his own research group. Damien completed his Masters and PhD in RSB and has been a postdoc for the last four years - over 10 years in RSB! He won a DECRA in the last round and will be moving that to UoW. Damien has been a big part of E&E and RSB and will be greatly missed.

Farewell to **Octavio Jiminez Robles** (Moritz Group, E&E) who is moving back to the lab of Helene Morlon in Paris to complete his Marie Curie postdoctoral fellowship. Octavio will be missed for his contribution to the School, both intellectually and socially.

In the media

Alexander Maier (BSB) had a chat with the ABC about leeches, appearing in the story here.

Papers

Bailey L., Bool I, Muhtianda IA & Courtney Jones SK *et al.* Notes on an interphyletic interaction: Observation of cohabitation and communal nesting resources between Gehyra mutilata (Wiegmann, 1834) and two vespid wasp species. *Austral Ecology*. https://doi.org/10.1111/aec.13296

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Othman NW, Barron A & Cooper PD. Feeding and amines stimulate the growth of the salivary gland following short-term starvation in the black field cricket, Teleogryllus commodus. *Insects.*

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Robinson A, Tao E, Neeman T, Kaehler B & Corry B. New insights from modelling studies and molecular dynamics simulations of the DIS5-S6 extracellular linker of the skeletal muscle sodium channel NaV1.4. *Biopolymers.*

Sanow S, Kuang W, Schaaf G, Roessner U *et al*. Molecular mechanisms of Pseudomonas assisted plant nitrogen uptake – opportunities for modern agriculture. *Molecular Plant Microbe Interactions.* https://doi.org/10.1094/MPMI-10-22-0223-CR

Scafaro AP, Posch BC, Evans, JR, Farquhar GD, Atkin OK *et al.* Rubisco deactivation and chloroplast electron transport rates co-limit photosynthesis above optimal leaf temperature in terrestrial plants. *Nature Communications*. https://doi.org/10.1111/pce.14604

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