



NEWS

Outstanding ERA results for RSB!

RSB received the top score of 5 (well above world standard) in all categories in which we were evaluated in the 2018 ERA (Excellence in Research for Australia) assessment exercise conducted by the ARC. Special congratulations to those working in the category Biochemistry and Cell Biology, which increased their rating from 4 to 5, since the last assessment in 2015.

Bininj people visit RSB

Lindell Bromham, Pat Backwell and Craig Moritz (all E&E) hosted a group of six Bininj people from the Gunbalanya community in Arnhem Land. There were four Rangers (Ursula Nadjamerrek, Anita Nayinggul, Grant Nayinggul and Gleeson Nabalwad) and two senior traditional owners (Alfred and Leah Nayinggul).

We discussed a collaborative project involving two-way learning, where we will meld scientific and traditional knowledge of biodiversity, land management, and animal behaviour. The project will involve taking ANU undergraduate students to Arnhem Land (where they will work alongside Gunbalanya students and rangers) to learn about the two knowledge systems (scientific and cultural).

Lindell has also organised for ANU undergraduate students to undertake cultural competency courses in the Northern Territory (in collaboration with Charles Darwin University) to enable our students to engage with Indigenous Australians in a respectful and culturally appropriate way. - Pat Backwell, E&E.

Bayesian phylogenetics and macroevolution workshop



Participants in the Bayesian Phylogenetics and Macroevolution workshop, held in the Evolution meeting room. Image: Claire Stephens.



Participants at the meeting with Indigenous leaders and rangers had lunch on the Robertson Terrace. Clockwise from centre left: Leah Nayinggul, Alfred Nayinggul, Grant Nayinggul, Francisco Almeida (Taungurung Land and Waters Council), Anna McDonald (Moritz group, E&E), Anita Nayinggul, Ursula Nadjamerrek, Isaac Bell (Cardillo group, E&E), Renee Catullo (Moritz group, E&E), Shay Wrigglesworth (West Arnhem Regional Council), and Tristen Jones (CAP, ANU). Image Lindell Bromham. (See: News Item)

The Centre for Biodiversity Analysis recently hosted Tracy Heath from Iowa State University, who is part of the core development team of RevBayes, a computation tool for complex modelling, simulation, and Bayesian inference in evolutionary biology, particularly phylogenetics. Tracy presented a 3-day workshop - Bayesian phylogenetics and macroevolution in RevBayes that was attended by over 20 ANU and CSIRO researchers and students.

CEAT Innovation Hub Members

Introducing the five start-ups who have joined the CEAT Innovation Hub in the Gould Building: Flurosat, Gondwana Genomics, PPB, QuestaGame and Wildlife Drones. Learn more about these exciting businesses and their journey so far here. - Mary Kelly, CEAT Director.

Congratulations

Bob Furbank (PS) has been awarded the Enid MacRobbie Corresponding Membership to the American Society of Plant Biologists (ASPB). This honor, initially given in 1932, provides life membership to distinguished plant biologists outside the United States in



recognition to their contribution to the ASPB and to plant biology.

Simon Williams (PS) has been awarded the 2019 Peter Goldacre Award by the Australian Society of Plant Scientists. He will be presented with the Goldacre medal and give the Goldacre lecture at the ComBio conference in Melbourne in late 2019.



Kelli Gowland (Nicotira group, E&E), left, and Anissa Satyanti (Nicotira group, E&E) have been awarded Endeavour Research Leadership Awards, in the 2019 round.



Sanduni Hapuarachchi (van Dooren, Lehane and Kirk groups, BSB) has been selected to participate in the prestigious Biology of Parasitism (BoP) course at the Marine Biological Laboratory, Woods Hole, USA, from June-August this year. BoP selects 16 high achieving young scientists from around the world



DECRA profile: David Duchêne Garzon (Moritz group, E&E)



Research background

My career began at James Cook University in 2008, where I studied marine biology and was exposed to the wonderful Coral Sea. As

an honours student, I explored the history of the association between gobioid fishes and their host corals. I then embarked in a PhD at ANU, aiming to examine a range of topics in the field of molecular evolution and macroevolution. This was followed by a postdoc position that started in 2016 at the University of Sydney, where I studied methods that test the reliability of our inferences about the tree of life. I did this in part with a focus on the evolution of Australasian marsupials. This led me to my current DECRA project, on the genomic evolutionary signals of marsupials, starting this year at the Moritz lab.

Current research interests

My current research focuses on the genomic signals of the radiation of Australasian marsupials using the statistical tools in the field of phylogenomics. This will involve analysis of genome-scale data generated as a part of the Oz Mammals Genomics initiative consortium. Marsupials provide an exciting system with a diversity of historical processes, including widespread hybridization events, fast radiations, and several intriguing and ancient species-poor taxa (e.g., numbats, koalas, and moles). I hope to gain an in-depth understanding of marsupial diversification. This will also require studies on the power of our methods to reliably retrieve the tree of life and the genomic processes behind it.

What do you enjoy most about your research

The field of phylogenetics is a rich community with an increasing number of sub-fields. While inferring the relationships among taxa is one core question, phylogenetic models are routinely applied for inferring a great number of parameters, including the timing of evolutionary events, biogeographic history, rates of pathogenic infectious spread, patterns of molecular evolution, ancestral states, among many others. There is also a wealth of views regarding the study of the tree of life, so the field brings together evolutionary biologists, biochemists, mathematicians, and statisticians to name a few. The richness of questions and scientists involved is definitely a reason to show up every day.

This newsletter is archived at biology.anu.edu.au/news-events/newsletter.
Layout: Mel Norris
Editing: Scott Keogh & Mel Norris

to participate in an intensive 7-week course. Sanduni will receive daily lectures from leaders in the field of parasitology, and learn cutting-edge techniques that address key research questions in four experimental modules across the 7 weeks. Congratulations Sanduni! - **Giel van Dooren**, BSB.

Daniel Yu, Williams group (PS) Honours student was awarded the Australian Society for Parasitology Prize for the highest mark in the course Parasitology (BIOL3142) in 2018.



Openness and Reproducibility in Science

In February, a hundred academics, students and professionals gathered from across Australia and the globe to discuss the diverse meanings of “openness” in scientific life. The day-long public workshop, featuring speakers from The Australian National University, University of Adelaide, University of Edinburgh, protocols.io, and others, aimed to explore the implications of openness and reproducibility for science and its supporting institutions. This workshop was co-hosted by Joan Leach and Sujatha Raman from Center of Public Awareness of Science (CPAS) and **Susan Howitt** (BTLC, BSB) and **Benjamin Schwessinger** (PS) at RSB. The event was rounded off by a poster session on reproducible research practices hosted by **Diep Ganguly** (Pogson group, PS). All material can be found on the [event page](#) and the [depository](#) established by the ANU library Together with CPAS, we look forward to developing openness as an institutional focus, research theme, and basis for ongoing collaboration. - **Benjamin Schwessinger**, PS.

Awards, grants

Benjamin Schwessinger (PS) and collaborators have been awarded a Mozilla Science Mini Grant for their project [Reproducibility4Everyone](#).

WELCOME

Megan Outram joins the Williams group (PS) this month as a postdoc. Megan is a protein biochemist and structural biologist, and recently completed a PhD at the University of Queensland.



Natalie Tegtman has started her PhD in the Magrath group (E&E). She completed her Honours at ANU last year, and is interested in investigating how animals use social information and sequences of information in anti-predator behaviour. She will be studying both dwarf mongooses in South Africa, and fairy-wrens in Canberra.



You Zhou has started her PhD in the Magrath group (E&E). She completed her Honours at ANU in 2017, and then carried out fieldwork on birds in Australia and China. She will be working on environmental constraints on communication about danger, including the problems of vocal communication in noise and the visual constraints imposed on incubating birds.



Welcome to **Hannah Drieberg**, who has joined the Farquhar group (PS) as a Research Officer. She completed her Honour's last year in the Pogson group (PS), on 'Delineating ABA-mediated stomatal closure' and is excited to continue exploring the functional role of stomata in her new role.



Welcome back to **Maider Iglesias-Carrasco**, who has joined the Head group (E&E), after completing an Endeavour fellowship in Auckland, New Zealand, and will be working on the evolution of immunity in insects.



David Duchêne Garzon also returns to RSB, after a postdoc in Sydney (see DECRA of the month). He joins the Moritz group (E&E), with a DECRA to work on the genomic evolutionary signals of marsupials.

NEW APPOINTMENTS



Meenu Pratap (formerly Maier group, BSB) has joined the BTLC teaching lab team as a Technical Officer.

Sarah Fraser-Chitticks is the new Events Officer at the Centre of Excellence for Translational Photosynthesis.

Jennie Mallela has taken on the role of Lab Manager in the Rodrigo group (CBBU).

FAREWELL

Farewell to **Juan Jose (Juanjo) Nogueira Perez** who is leaving the Corry group (BSB) to take up an independent faculty position at Universidad Autónoma de Madrid. During his time at the ANU Juanjo has made significant advances in understanding the function of sodium ion channels and provided enormous contributions to the supervision of many honours and undergraduate students. We look forward to future collaborations with him and to following the discoveries made in his new research projects. - **Ben Corry**.

IN THE MEDIA

The Australia-Germany Research Network (AGRN) published an interview with **Alex Maier** (BSB) in their newsletter.

MPHIL SUBMITTED

Mrinalini Pratap (Maier group, BSB) 'Host red blood cell modifications induced by the malaria parasite *Plasmodium falciparum*'.

PHDS SUBMITTED

Sonya Geange (Nicotra group, E&E) 'Does the individual matter? Quantifying the role of intraspecific variation and phenotypic plasticity in plant responses to climate change.'

Buddhie Nanayakkara (Gordon group, E&E) 'Phenotypic and genotypic characteristics for *Escherichia coli* strains responsible for bacterial bloom events in Australia.'

Peng Zhang (von Caemmerer group, PS) 'Systematic analysis of the long-term heat stress response in the C4 model species *Setaria viridis*.'

PHDS AWARDED

Alex Carey Hulyer (Callaghan group, BSB) 'Bioenergetic coupling in P-glycoprotein: determining the relative position, topography and role of transmembrane helices six and twelve.'

Qi Cheng (Bröer group, BSB) 'Identification of novel inhibitors of the amino acid transporter B0AT1 (SLC6A19), a potential target to induce protein restriction and to treat Type 2 Diabetes.'

PAPERS ACCEPTED

Bröer A, Gauthier-Coles G, Rahimi F, van Geldermalsen M, Dorsch D, Wegener A, Holst J, Bröer S. Ablation of the ASCT2 (*SLC1A5*) gene encoding a neutral amino acid transporter reveals transporter plasticity and redundancy in cancer cells, *Journal of Biological Chemistry*.

Coast O, Shah S, Ivakov A, Gaju O, Wilson PB, Posch BC, Bryant CJ, Negrini ACA, Evans JR, Condon AG, Silva-Pérez V, Reynolds MP, Pogson BJ, Millar AH, Furbank RT, Atkin OK. Predicting dark respiration rates of wheat leaves from hyperspectral reflectance, *Plant Cell & Environment*.

Hua X, Greenhill SJ, Cardillo M, Schneemann H, Bromham L. The ecological drivers of variation in global language diversity, *Nature Communications*.

Jing W, Yabas M, Bröer A, Coupland L, Gardiner EE, Enders A, Bröer S. Calpain cleaves phospholipid flippase ATP8A1 during apoptosis in platelets, *Blood Advances*.

Johns S, Henshaw JM, Jennions MD, Head ML. Males can evolve lower resistance to sexually transmitted infections to infect their mates and thereby increase their own fitness, *Evolutionary Ecology*.

Jones SP, Diem T, Teh YA, Salinas N, Reay DS, Meir P. Methane emissions from a grassland-wetland complex in the southern Peruvian Andes, *Soil Systems*.

Jürgens A-S, Maier AG. The Parasite as Performer, *Journal of Science & Popular Culture*.

Knauer J, Zaehle S, De Kauwe MG, Bahar NHA, Evans JR, Medlyn BE, Reichstein M, Werner C. Effects of mesophyll conductance on vegetation responses to elevated CO₂ concentrations in a land surface model, *Global Change Biology*.

Lugli LF, Andersen KM incl. Meir P *et al.*, Hartley I. Multiple phosphorus acquisition strategies adopted by fine roots in low-fertility soils in Central Amazonia, *Plant Soil*.

McLachlan JR, Ratnayake CP, Magrath RD. Personal information about danger trumps social information from avian alarm calls, *Proceedings of the Royal Society of London, B*.

Magrath RD, Haff TM, Igic B. 'Interspecific communication: gaining information from heterospecific alarm calls', In T Aubin & N Mathevon (eds), *Coding Strategies in Vertebrate Acoustic Communication*, Springer, Heidelberg.

Medina I, Hall M, Taylor C, Mulder R, Langmore NE. Experimental increase in eviction load does not impose a growth cost for cuckoo chicks, *Behavioral Ecology and Sociobiology*.

Nogueira JJ, Corry B. Ion channel permeation and selectivity, In A Bhattacharjee (ed), *Oxford handbook of neuronal ion channels*, Oxford University Press, Oxford.

Pereira I, Mendonca do Nascimento HE, Boni-Vicari M *et al* incl Meir P, Hofhansl F. Performance of laser-based electronic devices for structural analysis of Amazonian terra-firme forests, *Remote Sensing*.

Riebel K, Odom KJ, Langmore NE, Hall ML. New insights from female bird song: towards an integrated approach to studying male and female communication roles, *Biology Letters*.

Satyanti A, Guja LK, Nicotra AB. Temperature variability drives within-species variation in germination strategy and establishment characteristics of an alpine herb, *Oecologia*.

Thynne E, Mead O, Chooi YH, McDonald MC, Solomon PS. Acquisition and loss of secondary metabolite clusters shaped the evolutionary path of three recently emerged phytopathogens of wheat, *Genome Biology and Evolution*.

Ubierna N, Cernusak LA, Holloway-Phillips M-M, Busch FA, Cousins AB, Farquhar GD. Critical review: Incorporating the arrangement of mitochondria and chloroplasts into models of photosynthesis and carbon isotope discrimination, *Photosynthesis Research*.

Zhou Y, Radford AN, Magrath RD. Why does noise reduce response to alarm calls? Experimental assessment of masking, distraction and greater vigilance in wild birds, *Functional Ecology*.