

## Research School of Biology Newsletter

Issue 121 | July 2020

#### ANU COLLEGE OF SCIENCE

#### CONGRATULATIONS

# ARC Laureate Fellowship Congratulations to Loeske Kruuk (E&E), the sole ACT recipient of an Australian Research Council (ARC) Australian Laureate Fellowship this year.

Loeske will receive \$3.3 million to research the effects of environmental change and quantitative genomics in wild animal populations. By combining recent advances in genomic technology with a consortium of fourteen detailed studies of mammals, birds and reptiles, it will quantify the quantitative genetic basis of life-history variation and the potential for evolutionary adaptation in the wild. The project will test the consequences of environmental change, population decline, inbreeding and disease in natural environments, and establish a coordinated network of Australian Long-Term Animal Studies

#### ARC Future Fellowship

Congratulations to **Simon Williams** (PS), who is the sole recipient of an ARC Future



(ALTAS).

Fellowship in RSB. Simon will receive \$768,000 for his project, which will research the molecular basis of fungal rust diseases in plants.

### Australian Society for Parasitology award

**Kathryn Parker** (ex- van Dooren and Kirk groups) was awarded the <u>JFA Sprent Prize</u>



from the Australian Society for Parasitology (ASP). The prize is awarded to someone who has written an outstanding PhD thesis in the previous three years.

Kathryn's thesis was entitled 'Defining the Apicomplexan Amino Acid Transporter Family'. Kathryn will present her research at next year's ASP annual meeting, and receive a plaque and cash prize.

# Australian Government Australian Research Council 2020 Australian Laureate Fellowships



#### **Professor Loeske Kruuk**

Administering Organisation: The Australian National University

Loeske Kruuk, the only recipeint of an ARC Laureate Fellowship from the ACT for 2020.

#### PHD APPROVED

Congratulations to Fatimah Azzahra (Zara) Ahmed Rashid (Atkin group, PS) on the approval of her PhD thesis entitled 'Thermal acclimation of respiration in rice and chickpea'.



#### **GRADUATION**

Congratulations to our recent graduates!

Constanza Leon Barrueto (Fenner graduate, now with Head group, E&E),

Alexander Skeels (Cardillo group, E&E),

Phillipa Beale (Foley group, E&E), Yicheng

Zhu (Huttley group, E&E), Jacinta Watkins (Pogson group, PS), Fatimah Azzahra

Ahmad Rashid (Atkin group, PS), Erin

Andrew (Fahrer group, BSB) and Pawan

Parajuli (Verma group, BSB), received a

Doctor of Philosophy in a virtual graduation on 31 July.



#### IN THE MEDIA

**Spencer Whitney**'s (PS) publication in *Plant Cell* was featured in an ANU media release: 'Back to the future: new study could lead to bumper crops'.

The research of **Michael Groszmann** (PS, Evans and von Caemmerer groups) was covered in a Research for Agriculture article 'Researchers explore promising novel approach to control wild radish weed', and in a *Phys Org* article 'Exploring the diversity of cell gatekeepers



could be the key to
better crops', with
Annamaria De Rosa
(Evans group, PS).
Anna (image left) was
also featured in an ARC
article of the same title.

#### **OUTREACH**

The Centre for Excellence in Translational Photosynthesis in collaboration with MeriSTEM have produced Planting Science, a series of lesson plans and YouTube videos pitched for school levels 1-12. Contributors include Spencer Whitney, John Evans, Annamaria De Rosa, Suyan Yee, Angela Stoddard, Florence Danila, Sara Rottet, Caitlin Byrt, Hilary Stewart-Williams, Bob Furbank, Emmanuel Young, Sally-Ann Buck, Tory Clarke, Ross Deans, Demi Gamble and Wil Hee (all PS).

#### WELCOME

Biological Data Science Institute (BDSI) moves into the RN Robertson Building
The BDSI is a collaborative academic unit

The <u>BDSI</u> is a collaborative academic unithat aims to recruit, build and coordinate expertise at the interface of data science

and the biological sciences. BDSI staff are eager to help accelerate the translation of biological data to biological knowledge and translational impact.

Members of the BDSI will move into Bldg 46 level 1 South (Ecogenomics and Bioinformatics Lab) and to level 3 South.

#### Welcome Honours and Masters students

Twenty students are commencing Honours or Masters programs this semester, some having deferred from first semester.

Honours: Isabel Barter (Saliba group, BSB), Natasha Black (Gordon group, E&E), Benjamin Carman (Gordon group, E&E), Heather Johnston and Kate O'Hara (Moritz group, E&E), Matthew Mortimer (Pogson group, PS), Richard Morris (Brock group, BSB), Lydia Murphy (Cooper group, E&E), Abigail Piscioneri (Schwessinger group, PS), Sacha Pulsford (Price group, PS), Felix Smits (Cardillo group, E&E), Kaitlyn Spooner (Gardner group, E&E), Jack Wess (Rathjen group, PS), Thomas Muxiang Wang (Byrt group, PS), Soraya Zwahlen



(van Dooren group, BSB), Masters: Lu (Luke) Ke and Luozixian (Zach) Wang (Millar group, PS), and Saishyam Ramesh (Maier group, BSB).

#### Click to download poster

Masters of Science students in Biological Sciences, Biotechnology and Quantitative Biology. Prinda Patel, Victoria Pfitz, Vrinda Johri, Na Li, Han Li, Vardhan Singh, Huaiyan Ren, Priya Rao, Ziheng Luo.

#### **FAREWELL AND NEW POSITIONS**

Florian Busch (aka Captain Photorespiration, aka Captain Kok Effect). After eight years in RSB, many in the Farquhar group (PS), Florian will leave to found his own research group at the University of Birmingham.

Florian has been a great addition to the group with an interest in theory that goes deeper than most of us would care to follow, but which has stood him in good



Florian Busch (Farquhar Group, PS).

stead with prestigious papers in Nature Plants and other journals. Florian has been a mainstay of our instrumental labours, particularly with gas exchange systems. He will also be missed in competition Frisbee where photosynthetic theory gives way to a Border Collie-like speed and doggedness! We wish him the best of luck for his future adventures and scientific career, although given his predilection for collaboration we expect (and hope!) to see him soon.

Matthew King (Combined Workshop). Matthew has been an Electrician for over 17 years at RSB. During his time here, he undertook a school-sponsored apprenticeship in Refrigeration and Air Conditioning, was a member of the ANU



Council for six years, and NTEU ANU Branch President for three years. Matthew's last day at RSB was Friday 31 July. Thank you Matthew and all the best.

Jennie Mallela (E&E). After 6 months in the RSB role of Communication and Outreach Officer, Jennie has returned to focusing on her coral reef research and teaching activities. Jennie would like to say: "it was a real pleasure working with my RSB



colleagues to promote their research and support their outreach and voluntary activities. Thank you for sharing all your stories and good news with me."

#### **NOTICES**

#### From the RSB Equity and Diversity Committee

Last semester, the usual Student Experience of Learning and Teaching (SELTs) student surveys were replaced by wellbeing surveys for coursework students, HDR students and staff. While the main focus was on teaching, the wellbeing parts of the surveys provide an interesting perspective on the impact of COVID19.

Not surprisingly, COVID19 magnified the effect of other life events, leading to significant stress in many cases. Both teaching staff and HDR students experienced increased uncertainty about their roles and often, their incomes. About 40% of the respondents had considered leaving ANU (noting that this may be a biased sample). You can read the full report here. The reason we are raising this is to point out that if you are feeling stressed, you are not alone! Please talk to someone, e.g. a supervisor, a friend, ANU support services or any member of the RSB Equity and Diversity Committee. Our teaching focused academics and teaching lab staff have all done mental health first aid training so are also there for a chat.

For those who are teaching, many of the same pressures are still present but remember that students are also stressed. It is particularly important that we help our remote students feel part of the community, whether you are a course convenor, lecturer or demonstrator/tutor.

ANU-AgriFutures Australia: Space technologies for Australia's rural sector. This virtual workshop will be held 18-19 August, 10am to 12:30pm both days.

#### PAPERS ACCEPTED

Bromham, L, Hua, X, & Cardillo, M. Macroevolutionary and macroecological approaches to understanding the evolution of stress tolerance in plants. Plant, Cell and Environment. https://doi.org/10.1111/ pce.13857.

Denamur, E, Clermont, O, Bonacorsi, S, & and Gordon, D. The population genetics of pathogenic Escherichia coli. Nature Reviews Microbiology.

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Fairweather, SJ, Shah, N, & Bröer, S. Heteromeric solute carriers: Function, Structure, Pathology and Pharmacology Protein Reviews.

Gauzere, J, Pemberton, JM, Morris, S, Morris, A, Kruuk, LEB & Walling, CA. The genetic architecture of maternal effects across ontogeny in the red deer. Evolution. https://doi.org/10.1111/evo.14000.

Hsiao, Y, Notes on Lycocerus gorham and Stenothemus bourgeois of Taiwan (Coleoptera: Cantharidae). Taiwanese Journal of Entomological Studies.

Hsiao, Y, & Oberprieler, RG. Bionomics and rearing of Miltotranes prosternalis (Lea, 1929) (Coleoptera: Curculionidae), a mutualistic cycad pollinator in Australia. Entomological Science.

Hsiao, Y, & Pollock, D. Contribution to the knowledge of the endemic Australian genus Binburrum Pollock, 1995 (Coleoptera: Pyrochroidae: Pilipalpinae), with description of three new species. The Canadian Entomologist.

Hu, Y, Wilson, S, Schwessinger, B, & Rathjen, J. Blurred lines: integrating emerging technologies to advance plant biosecurity. Current Opinions in Plant Biology. https://doi.org/10.1016/j. pbi.2020.04.011.

Iglesias-Carrasco, M, Brooks, S, Kruuk, L, Head, M. The effects of competition on fitness depend on the sex of both competitors. Ecology and Evolution.

Joynson, R. Molero, G. Coombes, B, Gardiner, L-J, Rivera-Amado, C. Piñera-Chávez, FJ. Evans, JR. Furbank, RT, Reynolds, MP, & Hall, A. Uncovering candidate genes involved in photosynthetic capacity using unexplored genetic variation in Spring Wheat. BioXriv. https://doi. org/10.1101/2020.06.15.151928.

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Groszmann, M, Chandler, PM, Ross, JJ, & Swain, SM. Manipulating gibberellin

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control over growth and fertility as a possible target for managing wild radish weed populations in cropping systems. Frontiers in Plant Science. https://doi. org/10.3389/fpls.2020.00190.

Lin, Y-C, Braby, M, & Hsu, Y-F. A new genus and species of slug caterpillar (Lepidoptera: Limacodidae) from Taiwan. Zootaxa. https://doi.org/10.11646/ zootaxa.4809.2.8.

Medina, I, Kilner, RM, & Langmore, NE. Behaviour as a driver of phenotypic diversity: the case of brood parasitism. Current Zoology.

Mohamed, A, Chan, CX, Ragan, M, Ball, E & Miller, D. Comparative transcriptomic analyses of Chromera and Symbiodiniaceae. Environmental Microbiology Reports. https://doi. org/10.1111/1758-2229.12859.

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