

# Research School of Biology Newsletter

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## ANU COLLEGE OF SCIENCE

# CONGRATULATIONS

Australian National

University

### **ARC DECRA recipients**

RSB has three Discovery Early Career Researcher Award (DECRA) recipients, commencing in 2021. Congratulations to **Kai Chan** (Furbank Group, PS), **XiaoXiao Zhang** (Rathjen Group, PS) and **Timothée Bonnet** (Kruuk Group, E&E).

# ARC Discovery Project grant outcomes

Researchers in RSB have been awarded six Discovery Project (DP) grants through ANU for a grand total of \$2,851K in research income over the next three years, much of which will support early career researchers.

Congratulations to **Graham Farquhar** (PS), **Spencer Whitney** (PS), **Dan Noble** (E&E), **Craig Moritz** (E&E), **Scott Keogh** (E&E) and **Rod Peakall** (E&E). Additionally, **Justin Borevitz** (PS/E&E), **David Gordon** (E&E) and **Bob Furbank** (PS) were part of grants awarded at three other Australian universities.

## **Highly cited researchers**

Web of Science recognises as 'highly cited' those researchers producing multiple highly-cited papers that rank in the top 1% for citations by field and year in the Web of Science. ANU has 16 'highly cited' researchers, of which five are from RSB, with four of these being from Plant Sciences.

The 2020 RSB <u>Highly Cited Researchers</u> are: **Stefan Bröer** (BSB), **John Evans** (PS), **Graham Farquhar** (PS), **Patrick Meir** (PS), and **Barry Pogson** (PS).

## Top two per cent scientists

There has been much interest in a recently released database from a <u>heavily downloaded</u> <u>paper</u> by loannidis et al. that lists scientists in the top two per cent in their area of expertise. The ranking is based on a composite of six different commonly used citation indices and so seems to do a better job of taking into account differences in citation rates among sub-field and of factoring in career length.

There are a remarkable number of RSB academics in the global top two per cent in their fields. In no particular order:



Kara Youngentob (Foley Group, E&E) was co-author of a paper which outlined the discovery that the Greater Glider is actually three different species. See under 'In the Media'.

PS: Ben Schwessinger, Rob Sharwood, Susanne von Caemmerer, John Evans, Patrick Meir, Owen Atkin, Marilyn Ball, Dean Price, Uli Mathesius, Guillaume Tcherkez, Adrienne Hardham, Peter Solomon, Fred Chow, Graham Farquhar, Barry Pogson, Bob Furbank, Murray Badger, Michael Djordjevic.

BSB: Stefan Bröer, Kiaran Kirk, Ben Corry, Shin-Ho Chung, Ryszard Maleska.

E&E: Naomi Langmore, Marcel Cardillo, Lindell Bromham, Loeske Kruuk, Rod Peakall, Rob Lanfear, Adrienne Nicotra, Craig Moritz, Rob Magrath, David Gordon, Michael Jennions, Scott Keogh, Mike Crisp, Andrew Cockburn, Bill Foley, Jochen Zeil, Peter Cranston, Penny Gullan.

## **New Head of Division**

Ulrike Mathesius (PS) has been



appointed Head of Division, Plant Sciences, and will start her three year term from 1 January, taking over from Barry Pogson. The

Heads of Division play critical strategic, administrative and leadership roles in RSB, and Uli has a great deal of experience, and knows ANU extremely well. We will be thanking Barry for his work in the role in due course.

## **Promotions**

Congratulations to **Britta Förster** (Badger and Price Groups, PS) and **Simon Williams** (PS) who have been promoted to Senior Lecturer (Level C), and **Ben Corry** (BSB) has been promoted to Professor (Level E).

## **RSB HDR conference**



2020 RSB HDR conference participants. (Image: S. Wragg). See larger versions of this photo

The annual RSB HDR student conference was held on 26 November, the first major in-house event since March. The COVID-19 compliant event comprised 46 talks presented in three concurrent sessions, the 8-minute talks presented face to face in seminar rooms and telecast via Zoom. Winners of the Hiroto Naora best conference presentation prize were announced via Zoom on 30 November. The winners were: **Lauren Harrison** (Jennions Group, E&E), **Gregory**  **Gauthier-Coles** (Bröer Group, BSB) and **Gigi Wong** (Millar Group, PS).

Thanks to the session chairs: **Damien Esquerré** (Keogh Group, E&E) **Octavio Jiménez Robles** (Moritz Group, E&E), **Wil Hee** (Price Group, PS), **Christina Spry** (Saliba Group, BSB), **Bayantes Dagvadorj** (Solomon Group, PS), and **Cibelly Goulart** (van Dooren Group, BSB).

Of course many thanks to the conference organisers: Xuexin Gao, (Callaghan Group, BSB) Jing Zhang (Leyton Group, BSB), Andy Bachler (Stone Group, E&E), Caitlin Cherryh (Lanfear Group, E&E), Claire Taylor (Langmore Group, E&E), Putter Tiatragul (Keogh Group, E&E), Andres Garcia (Atkin Group, PS), Salome Wilson (Solomon Group, PS) and Jay Prentice (BTLC) – an amazing team.

## **Outstanding Thesis Prize**



The 2020 RSB Outstanding Thesis Prize recipient, Damien Esquerré (centre), with former E&E Graduate Convenor, Rob Lanfear (left), and Interim Director, RSB, Scott Keogh (right).

The RSB Outstanding Thesis prize for 2020 was awarded to **Damien Esquerré** (Keogh Group, E&E) for his thesis, 'Old World serpents and New World dragons: the evolutionary dynamics of pythons and liolaemid lizards.' Rob Lanfear says that Damien is the whole package. Not only an academic powerhouse (15+ papers and a book), but also a generous and very active member of the graduate student community whose selfless contributions formed a huge part of the social 'glue' within E&E and across RSB. Damien also was a runner up for the ANU-wide Crawford Prize.

### Grant for Genomics program

Jana Sperschneider (Rathjen Group, PS, and BDSI) was awarded an ANU Pilot Project Support for 10X Genomics single cell sequencing. The Millennium Science and 10X Genomics pilot support program is a one-off opportunity for researchers to receive financial support for getting started with 10X single cell technology. In collaboration with the Schwessinger Group (PS), Jana will use single-cell technologies to generate new understanding of how rust fungi infect plant cells.

#### **Study milestone**



Helen Osmond holding a wren, with Andrew Cockburn.

In November 1986 Andrew Cockburn (E&E) started a study of the Superb Fairywrens in the Australian National Botanic Gardens, which he has maintained ever since, ably assisted since 1992 by Helen Osmond. As the study progressed it quickly became evident that the species was of extreme interest because it combines cooperative breeding, where a single female can be helped by up to six males to rear her young, with a record-breaking degree of infidelity, as offspring are usually sired by sexy males from other territories. On 9 of October 2020 they colour-ringed their 10,000<sup>th</sup> bird. Birds are followed throughout their lives, and 9,000 have been sequenced at more than 1500 loci. The data produced provide an excellent if depressing insight into the dramatic effects of anthropogenic climate change on natural populations.

# **NEWS**

# Funding for reproducible research practices

An international initiative involving **Benjamin Schwessinger** (PS) on reproducible research practices received funding from the <u>Chan Zuckerberg Initiative</u>. Work related to this initiative was supported by the Director's Innovation Fund in 2019. The initiative ran training sessions, including the Honours and Masters data management workshop.

## BioInfoSummer Symposium

The 2020 AMSI BioInfoSummer Symposium was held from 30 November to 3 December as a virtual event hosted by ANU. It was coordinated by Teresa Neeman (BDSI), Benjamin Schwessinger (PS), and Xia Hua (MSI), and supported by Kevin Murray (PS), RSB IT and others. The symposium was attended by more than 150 students and early career researchers from industry and universities in Australia and overseas. Speakers included prominent ANU and international academics. The themes for this year's symposium included single cell transcriptomics, RNA biology, long read sequencing, biomedical optimisation and data science.

# PHDS SUBMITTED

#### Haseena Khan (Solomon Group, PS) has



submitted her PhD thesis entitled 'Understanding the molecular basis of *Zymoseptoria tritici*-wheat interactions'.

# **IN THE MEDIA**

### New species of glider



Greater glider. Photo: Steven Kuiter.

**Kara Youngentob** (Foley Group, E&E) and colleagues have discovered that the Greater Glider is actually three different species. (See main image on page 1).

The paper published in <u>Nature Scientific</u> <u>Reports</u> is entitled 'Genetic evidence supports three previously described species of greater glider, *Petauroides volans, P. minor,* and *P. armillatus*', and generated over 160 media items, including in the New York Post, reaching a potential audience of 2.4+ million.

# **WELCOME**



2020 RSB Summer Research Interns.

#### **Summer Research Interns**

Over the next nine weeks we have 26 ANU students undertaking an RSB Summer Research Internship. We wish them the best in their research learning experience – and look forward to them returning for honours and/or a PhD in the future.

# FAREWELL

Thomas Davis (IT Services Team) joined



RSB as an IT Client Services Officer in 2012, bringing with him extensive experience from the corporate sector

(Hewlett-Packard), an extroverted and customer-centric focus, and a diverse array of 'onesie' costumes for special occasions. Tom became the IT Client Services Team Leader in 2015, and enrolled in a Bachelor of Biotechnology to better support students and researchers. Tom's studies give him insight in the use and support of services including Wattle, Echo, Zoom, research instrument systems, audiovisual systems, bioinformatics events, workshops and conferences, in addition to his capable handling of every day IT matters. Tom's cheery, outgoing personality, and broad capability which span the technical, managerial and academic, have seen him become an integral member of the School and 'IT go-to'. Tom's last day is 4 December.

#### Graham Hicks (BSB Divisional Administrator)

Farewell RSB!



To mention all the jobs I've had would really be too much Working in a coke oven ... covered in black muck

Blasting down the highway, pushing hard my luck

Piling bricks on top of bricks ... and working out my guts

No matter where ... there's just one thing for me that never changed

Shouting out, 'It's Friday! And time for beer again.'

But seriously now I am gone; I really want to say

Working here at RSB has been the best of days.

Graham's last day is 18 December.

#### Rose-anne Holm (Purchasing & Store



Services Team) Rose-anne joined the former Research School of Biological Sciences in 2003, bringing 10 years private sector experience from Vee H

Aviation at the Canberra airport where she managed stores aircraft parts, the Mobil refueling depot and flying school. She was the RSBS Store Purchasing Manager, and then took on the finance purchasing officer and asset management roles into her team. When RSB was formed she took on the role of Purchasing Coordinator for the newly formed School with gusto, always focused on the best possible service for this integral service. Rose's vibrant, positive personality and 'can-do' attitude will be sorely missed. Rose's last day was 27 November, but you will more than likely continue to see Rose from time to time in the School.

#### Hee-Jin Noh (Langmore Group, E&E)



has just completed her postdoc on the interactions between cuckoos and their hosts, and is returning to South Korea to

await the outcome of several post-doc applications. She has been a dedicated fieldworker, a highly successful academic and wonderful colleague. She will be very much missed by us all!

Jeremy Weinman (Compliance



Services Team) started at ANU in 1977 as an undergraduate in Science, majoring in biochemistry and genetics, also taking computing courses.

In 1981 he did Honours with Peter Gresshoff in the Department of Botany, moving into a PhD with Peter Gresshoff and John Shine in the then Research School of Biological Sciences (RSBS), then part of the Institute of Advanced Studies (IAS).

John Shine's group then moved into the new Centre of Recombinant DNA Research (CRDR) in RSBS. After his PhD, Jeremy worked as a Postdoc and Research Fellow with Barry Rolfe, before taking on a professional staff role of Research Officer. In 2007, Jeremy was awarded the Barney John Award (an award for professional staff) for Excellence in Service to RSBS. Jeremy joined RSBS Operations, taking the role of RSB Compliance Coordinator in 2011, adding Diving Safety Officer in 2012. He has numerous qualifications relevant to WHS management, including a Diploma in WHS awarded in 2017. Jeremy's skills span research, teaching, administration, and functional roles, and he will be missed. Jeremy's last day will be 18 December.

Steven Zabar (Building Services Team) Steve joined the School in the now Technical Services Team, and has had several roles within the School Service Teams including being part of the after-hours On-Call team and autoclave operations. After five years with the Technical Services Team, Steve moved to the Plant Services Team, and more recently to the Building Services Team. We will miss his dry sense of humour, and wish him well. Steve's last day was 11 November.

# NOTICES

# From the RSB Equity and Diversity Committee

The RSB Equity and Diversity Committee has undertaken a review of superannuation payments to staff in different roles to gain insight into equity across groups. Equity and Diversity Committee members read the ANU Enterprise Agreement to compile this information, and had a conversation with a representative of the College of Science HR, to clarify relevant details. <u>The report</u> provides a summary of differences in superannuation payments among appointment types, choices available to RSB staff when hiring, and potential sources of inequity.

The recent Four Corners program on the conduct of some senior politicians has led to many discussions of what is and isn't appropriate workplace behaviour. We would like to remind you that ANU has codes of conduct for both staff and students, as well as a Respectful Relationships Unit. All three sites have information on expectations and what to do if they are not met. If you have any concerns about the behaviour of other staff or students, please talk to someone to get support or identify options to deal with the situation, (e.g. HDR Convenor, Head of Division, Director, Dean of Students, Dean of Staff or any member of the Equity and Diversity Committee). Many issues can be resolved at the local level and RSB will ensure that there is always a path for support. We aim to ensure that RSB has a supportive and inclusive culture.

# PAPERS

### Accepted

Aich U, Bonnet T, Fox RJ, & Jennions MD. An experimental test to separate the effects of male age and mating history on female mate choice. *Behavioral Ecology.* 

Arifin AR, May TW, & Linde CC. New species of *Tulasnella* associated with Australian terrestrial orchids in the Cryptostylidinae and Drakaeinae. *Mycologia*. <u>doi.org/10.1080/00275514.20</u> 20.1813473.

Binks O, Carle H, da Costa ACL, & Meir P. Measuring vertical profile of leaf wetness in forest canopy. *MethodsX*. Binks O, Finnigan JF, Coughlin I, Meir P, et al. Canopy wetness in the Eastern Amazon. *Agricultural and Forest Meteorology*.

Bool I, Slaymaker M, Magrath R, Arfian A, Courtney Jones SK, et al. First record of acoustic behaviour in Sulawesi bear cus cus (*Ailurops ursinus*). *Austral Ecology*.

Bromham L, Skeels A, Schneemann H, Dinnage R, & Hua X. Spicy food in hot countries and the challenges of testing hypotheses with cross-cultural data. *Nature Human Behaviour*.

Burt A, Boni Vicari M, da Costa ACL, Coughlin I, Meir P, Rowland L, Disney M. New insights into large tropical tree mass and structure from direct harvest and terrestrial lidar. *Royal Society Open Science*. doi. org/10.1101/2020.09.29.317198.

Byrne PG, Keogh JS, O'Brien D, et al. Evidence that genetic compatibility underpins female mate choice in a monandrous amphibian. *Evolution*.

Doughty CE, Riutta T, Meir P, et al. Predicting tropical tree mortality with leaf spectroscopy. *Biotropica*.

Encinas-Viso F, McDonald-Spicer C, Knerr N, Thrall PH, & Broadhurst L. Different landscape effects on the genetic structure of two broadly distributed woody legumes, *Acacia salicina* and *A. stenophylla* (Fabaceae). *Ecology and Evolution*. <u>doi.org/10.1002/ece3.6952</u>.

Geange SR, Arnold PA, Catling AA, Coast O, Cook AM, Gowland KM, Notarnicola RF, Posch BC, Zhu L, & Nicotra AB. The thermal tolerance of photosynthetic tissues: a global systematic review and agenda for future research. *New Phytologist*. doi: 10.1111/NPH.17052.

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Kelleher, SR, Silla AJ, Scheele BC, JS Keogh, et al. Disease influences male

This newsletter is archived at biology.anu.edu.au/news-events/newsletters Layout: Sharyn Wragg Editing: Scott Keogh & Sharyn Wragg advertisement and mating outcomes in an endangered amphibian. *Animal Behaviour.* 

Mendes V, Green SR, Evans JC, Spry C, et al. Inhibiting *Mycobacterium tuberculosis* CoaBC by targeting a new allosteric site. *Nature Communications*. doi.org/10.1101/870154.

Noble DWA, Kar F, Nakagawa S, Keogh JS, & Whiting MJ. Sexual selection on performance traits in an Australian lizard with alternative reproductive tactics. *Journal of Evolutionary Biology.* 

Noh H, Jacomb F, Gloag R, & Langmore NE. Frontline defences against brood parasitism in large-billed gerygones. *Animal Behaviour*.

Poyatos R, Granda V, Flo V, Steppe K, Meir P, et al. Global transpiration data from sap flow measurements: the SAPFLUXNET database. *Earth System Science Data Discussions*.

Warren DL, Matzke NJ, Cardillo M, Iglesias TL, Dinnage R, et al. ENMTools 1.0: an R package for comparative ecological biogeography. *Ecography*.

## Published

Arifin AR, May TW, & Linde CC. New species of *Tulasnella* associated with Australian terrestrial orchids in the Cryptostylidinae and Drakaeinae. *Mycologia*. <u>doi.org/10.1080/00275514.20</u> 20.1813473.

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Clark IA & Vissel B. Broader insights into understanding TNF and neurodegenerative disease pathogenesis infer new therapeutic approaches. *Journal* of *Alzheimer's Disease*. <u>doi.org/10.1080/1</u> <u>4737175.2019.1618710</u>.

Encinas-Viso F, McDonald-Spicer C, Knerr N, et al. Different landscape effects on the genetic structure of two broadly distributed woody legumes, *Acacia salicina* and *A. stenophylla* (Fabaceae). *Ecology and Evolution.* <u>doi.org/10.1002/</u> <u>ece3.6952</u>.

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evolution of locomotor performance in cane toads (*Rhinella marina*, Bufonidae) at an invasion front. *Proceedings of the Royal Society B.* <u>doi.org/10.1098/</u> rspb.2020.1964.

Kamali N, Talebi Bezmin Abadi A. & Rahimi F. Plagiarism, fake peerreview, and duplication: predominant reasons underlying retractions of Iranaffiliated scientific papers. *Science and Engineering Ethics*. <u>doi.org/10.1007/</u> <u>s11948-020-00274-6</u>.

McGregor D, Padovan A, Georges A, Youngentob K, et al. Genetic evidence supports three previously described species of greater glider, *Petauroides volans*, *P. minor*, and *P. armillatus*. *Nature Scientific Reports*. <u>doi.org/10.1038/</u> <u>s41598-020-76364-z</u>. (See under 'In the Media'.)

Rowland R, Oliveira RS, Coughlin I, Meir P, et al. Plant traits controlling growth change in response to a drier climate. *New Phytologist*. doi.org/10.1111/nph.16972.