



## NEWS

### Graham Farquhar awarded 2018 Senior ACT Australian of the year



Kai Chan and Graham Farquhar, ACT Senior Australian of the Year, at the award ceremony this month. Image Su Yin Phua.

**Graham Farquhar** (PS) has won the ACT Senior Australian of the Year award for 2018. He was congratulated by ANU VC Brian Schmidt, who said "He is an excellent role model for the next generation of scientists, and while senior in years, still vibrantly youthful."

Graham will represent the ACT in the national senior Australian of the Year award, to be announced ahead of Australia Day in January 2018.

### Promotions

**Naomi Langmore** (E&E) was promoted to Professor this month, and **Juliey Beckman** (BTLC) and **Adele Lehane** (Kirk & Lehane groups, BSB) have been promoted to Level C.

### ARC Discovery grants, and a DECRA

ARC grants and DECRA fellowships were announced this month. The following Discovery Project grants were awarded to RSB researchers:

**Marilyn Ball** (PS), Role of top-down-rehydration in drought tolerance of mangroves.

**Stefan Bröer** (BSB), A unified model of amino acid homeostasis.

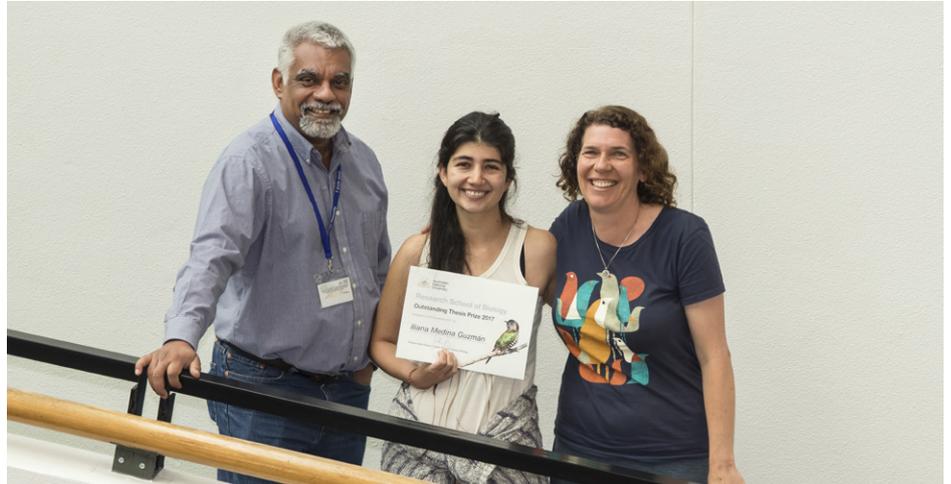
**Janet Gardner** (E&E), How does climate change affect arid zone birds?

**Naomi Langmore** (E&E), Does co-evolution drive speciation?

**Alex Maier** (BSB), Signalling pathways for sexual differentiation of apicomplexan parasites.

**Peter Solomon** (PS), The functional characterisation of a novel immune response in plants.

**Anna Simonsen** was awarded a DECRA

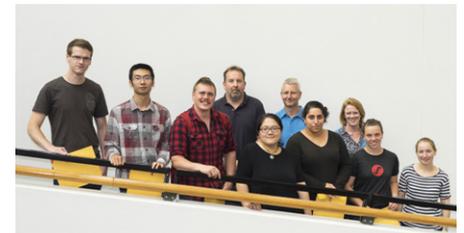


Iliana Medina Guzman was awarded the inaugural Outstanding Thesis prize this month. From left: Allen Rodrigo, Iliana Medina Guzman, Naomi Langmore. (See: News Item),(Image Sharyn Wragg).

fellowship. Her project aims to investigate impacts of climate change on the survival of symbiotic soil bacteria and the nutritional benefits they provide plants, using molecular technology.

to provide entirely novel insights into key questions in the study of coevolution.

### 2017 RSB student conference



Prizewinners and conveners at the student conference, from left Alex Sloan, Xuankun Li, Tom Rowell, Spencer Whitney, Xiaojun (Holly) Yang, Alex Maier, Sarah Shafik, Loeske Kruuk, Ariel Ivanovici and Melanie Ridgway. Image Sharyn Wragg.

Congratulations to all 91 students who presented at the 2017 RSB student conference – the inaugural event in the newly renovated Robertson building 46. The short-format talks once again provided a highly engaging showcase of the diverse and high calibre research being undertaken within RSB. Attendance at the event this year was unsurpassed. I am indebted to the independence and proficiency of the student organisers, **Sanduni Hapuarachchi** (van Dooren group, BSB) **Xiaojun (Holly) Yuan** (Leyton group, BSB), **Jessica Fenker Antunes** (Moritz group, E&E), **Christiana McDonald-Spicer** (Moritz group, E&E), **Sally Buck** (Whitney group, PS), **Annamaria De Rosa** (Evans group, PS). They delivered a wonderfully successful event whose organisation surpassed most professional conferences. Thanks also go to **Emmanuel Young** (Whitney group, PS), **Pawan Parajuli** (Verma group, BSB) and **Steven Zabar** (Operations) for their help in

### Long Service Awards



Allen Rodrigo, Wes Keys and Jack Egerton at the Vice-Chancellor's Staff Awards this month. Image supplied.

**Wes Keys** (Divisional Technical Officer E&E), **David Hayward** (Research Officer, Eldon Ball group, E&E) and **Peter Minogue** (Senior Infrastructure Officer, RSB IT) received 25-year Long Service Awards, at the Vice-Chancellor's Staff Awards presentation this month.

### Outstanding Thesis prize

A new award was instituted this year – the Outstanding Thesis Prize. This was awarded to **Iliana Medina Guzman** (Langmore group, E&E), for her thesis entitled 'Macroevolutionary outcomes of brood parasites and their hosts' (see main image). She published 14 papers during her PhD, in journals such as Science, American Naturalist, Ecology Letters and the Proceedings of the Royal Society. Her thesis integrated a wide diversity of techniques

## Group leader profile: Megan Head (E&E)



### Group research focus

Our research focuses on the evolution, ecology and physiology of sexual reproduction. Specifically, we're interested in how the environment (social and physical) influences the ecology and evolution of reproductive traits and how interactions between the environment and reproductive traits can generate biodiversity and lead to speciation. Within this focus our research also addresses questions regarding how individuals both within species (i.e. males and females) and between species (i.e. Hosts and sexually transmitted infections) coevolve.

### Teaching and research achievements

Managing to stay gainfully employed and continuing love my job despite a highly competitive research environment and continuous feelings of inadequacy.

### What do you enjoy most about teaching, and what is your teaching focus?

I'm excited to be teaching on a number of field courses in 2018 and to continue to help undergraduates conduct their own research projects through the PhD program. I think hands on experience in the lab and field is essential for equipping the next generation of scientists with the experience and skills that they will need to conduct fundamental research and solve societal issues associated with rapid environmental change.

### What else do you have underway?

As a part of my Future fellowship I am trying to establish eucalypt leaf beetles as a new model system for studying the coevolutionary dynamics of hosts and their sexually transmitted infections. This is a departure from my previous research because it involves working on interactions between multiple species. I'm excited by the prospect of developing a model system from scratch and the challenges and opportunities this will present me.

This newsletter is archived at [biology.anu.edu.au/news-events/newsletter](http://biology.anu.edu.au/news-events/newsletter).  
Layout: Mel Norris  
Editing: Stefan Bröer & Mel Norris

setting up and packing away and to **Helen Wong**, **Hesam Jahromi**, **Karen Scholte** and **Panit Thamsongsana** from the Biology Teaching and Learning Centre team for the 'behind the scene' administrative efforts required to run the event. Thank you to those who 'volunteered' to be session chairs, adjudicators, IT helpers and to the HDR program convenors - **Adrienne Nicotra** (E&E) **Alex Maier** (BSB) and **Spencer Whitney** (PS) whose efforts, as a collective, helped to ensure the event was a success. As always (possibly more so this year), the outstanding quality of the presentations proved challenging to identify the award winners. The winners of the Hiroto Naora award (each totalling \$900) were **Tom Rowell** (Magrath group, E&E), **Sarah Shafik** (Martin group, BSB), and **Ariel Ivanovici** (Djordjevic group, PS). Runner-up prizes of \$250 were awarded to **Xuankun Li** (Rowell group, E&E), **Xiaojun (Holly) Yuan** (Leyton group, BSB) and **Alex Sloan** (Rathjen group, PS).

**Melanie Ridgway** (Maier group, BSB) won the 1 minute Elevator Pitch.

- **Spencer Whitney**

### New student journal

This month we published the first volume of our new series *Field Studies in Ecology* from ANUPress: Researching functional ecology in Kosciuszko National Park. This peer reviewed and student edited volume showcases the fabulous work of the *Field Studies in Functional Ecology* students in 2015 and reflects the joint efforts of all our resource people and course contributors as well as our student editors and authors.

You can [download a PDF of the volume for free](#), or order a hard copy from ANUPress.

This volume is the first, but our vision is that this series will continue to grow. Volumes 2 and 3 from the *Field Studies in Functional Ecology* 2016 and 2017 courses are in train for the upcoming year. Beyond that, this series provides a vehicle for publication of other undergraduate field research projects arising from other RSB courses. - **Adrienne Nicotra** (E&E)

### Teaching science in East Timor

**Rob Sharwood** (Furbank group, PS) recently visited East Timor to train local teachers to teach science, with **Carly Conlan**, formerly of RSB and now a chemistry teacher in Canberra, and David Johns, principal of the Islamic School of Canberra. As well as large classes, teachers in East Timor have to interpret the Portuguese curriculum and translate it into the local language, Tetun, and many of them have no training in classroom management or visually teaching science. In addition, a number of schools have no

electricity. With the excellent support of **Alisha Duncan** (Education Officer, ARC CoETP), Rob and his group developed teaching methods using items that could be collected or bought from local shops, such as using betel nut as a pH indicator. This is the second year Rob and David have visited East Timor, and they plan to continue the annual visits. The trip this year was supported by the ARC CoE for Translational Photosynthesis, and the RSB.

**Norman Warthmann** (Borevitz group, PS & E&E) is part of a group who responded to a call from the Secretariat of the Convention on Biological Diversity (CBD) to submit views on how to treat digital sequence information, especially DNA sequences from organisms regulated by the Convention and the Nagoya Protocol. The current discussion is whether those sequences should remain openly/freely accessible or whether they should be regulated as if it was the actual, physical material. Norman and his group took the stand that the objectives of the CBD are best served by keeping such information openly and freely accessible. You can see their submission [here](#).

### Congratulations

**Fernanda Alves** (Langmore group, E&E) has won a *Holsworth Wildlife Research Endowment*, worth \$5,625.

### Awards

**Josh van Lier** (Fulton group, E&E) has been awarded the *John Holliday Student Conservation Award* from the NSW government, for his PhD research on the importance of estuarine habitats for supporting reef fish diversity.

## IN THE MEDIA

Research published recently by **Trevor Murray** (Zeil group, E&E), **Jochen Zeil** (E&E) and **Rob Magrath** (E&E) showing that crested pigeons use a modified feather to audibly signal danger gained national and international media attention. This included *Science*, *Scientific American* 60 second science podcast, *Smithsonian* magazine, *SVT Nyheter*, and *ABC News*. Trevor was also interviewed on *Fiveaa* (Adelaide) radio, and *Statewide Drive* (NSW).

**Owen Atkin** (PS) was interviewed on *ABC TV News Breakfast* about his research showing that plants release more CO<sub>2</sub> into the atmosphere through respiration than expected, and the problem will worsen with climate change. He was also interviewed on *ABC radio* - you can listen [here](#).

**Chris Fulton** (E&E) was interviewed on

ABC Radio Canberra this month about the risks associated with eating fish from the Shoalhaven River, which may be contaminated with PFAS industrial chemicals that bioaccumulate in the tissues of wildlife and humans.

**Hua (Emily) Ying** (Eldon Ball group, E&E), **Eldon Ball** (E&E) and **Sylvain Foret** (E&E) played a significant role in the worlds largest coral genomics sequencing project, which was reported on radio, Australian Geographic, and other media. The five-year Sea-quence project has genetically sequenced a whole coral organism for the first time.

## WELCOME

Welcome to **Timothée Bonnet**, who has joined the Kruuk group (E&E) to work on the quantitative genetics of fitness in wild animal populations. He joins us from the University of Zurich, Switzerland, where he had done a PhD and a postdoc on mammal evolutionary ecology and population demography.



New postdoctoral fellow, **Teng Li**, has joined the Rodrigo group (CBBU). Teng will be working on the use of new sequencing technologies for evolutionary analyses.



RSB welcomes a new cohort of summer scholars. From left, **Sam Jahromi** (BTLC), **Allen Rodrigo** (CBBU), **Richa Harnal** (Maier group, BSB), **Angus Rae** (Mathesius group, PS), **Xiaoying Li** (Saliba group, BSB), **Katherine Purdy** (Farquhar group, PS), **Tegan Norley** (von Caemmerer group, PS), **Audrey Prasetya** (Moritz group, E&E), **Ruoxi Lin** (Mathesius group, PS), **Morgan Thomas** (Nicotra group, E&E), **Suyan Yee** (Pogson group, PS), **Nhat Hung (Benjamin) Lam** (Kirk & Lehane group, BSB), **Ben Lodder** (Maier group, BSB) and **Richard Tien** (Rathjen group, PS). (Image Sharyn Wragg). Not pictured are **Jessica Yi Han Aw** (Kirk & Lehane group, BSB), **James Ranstead** (Moritz group, E&E), **Olga Palmer** (Solomon group, PS), **Linden Mueller-Wong** (Millar group, PS), **Michelle Cao**

(Millar group, PS) and **Liam Le Lievre** (Pogson group, PS).

## NEW APPOINTMENTS

Congratulations to **Paul Oliver** (DECRA in Keogh/Moritz groups, E&E) who has won a tenured Lectureship at Griffith University and a Curatorship at the Queensland Museum (joint position). He starts in February.

Congratulations to **Susanna Venn** (DECRA in Nicotra group, E&E) who has won a tenured Senior Lectureship in plant biology at Deakin University. She starts this month.

**Norman Warthmann** (Borevitz group, PS & E&E) will move to Vienna, Austria, and take on a role with the United Nations. He will join the **FAO/IAEA Agriculture and Biotechnology Laboratories** in Seibersdorf as their lead Molecular Biologist.

## PHDS SUBMITTED

**Nina McLean** (Kruuk group, E&E) 'Life in a changing world: climate change impacts on common European birds'.

**Fiorella Ramirez Esquivel** (Zeil group, E&E) 'Miniaturisation of sensory systems in ants'.

**Sharon Every** (Fulton group, E&E) 'Trophic ecology of euryhaline and coastal elasmobranchs of northern Australia'.

## PHDS AWARDED

**Alaa Alzahrani** (Arkel group, E&E) 'Identification and characterisation of genes which are critical for murine gastrulation'.

**Steve Fairweather** (Bröer Group, BSB) 'Protein interactions of epithelial neutral amino acid transporters'.

**Ashley Jones** (Millar group, PS) 'Identification of long non-coding RNAs in *Arabidopsis thaliana* and inter-genus hybrids'.

**Daniela Perez** (Backwell group, E&E) 'Selection for sexually dimorphic traits and signal diversity in fiddler crabs'.

## PAPERS ACCEPTED

Bromham L, Duchêne S, Hua X, *et al.*, Bayesian molecular dating: Opening up the black box, *Biological Reviews*.

Busch FA, Sage RF, Farquhar GD, Plants increase CO<sub>2</sub> uptake by assimilating nitrogen via the photorespiratory pathway, *Nature Plants*.

Dashiell C, Le Bel S, ..., Venn S, *et al.*, Insect herbivory on Snow Gum (*Eucalyptus pauciflora*, Myrtaceae) saplings near the alpine treeline: the influence of local- and landscape-scale processes, *Australian*

*Journal of Botany*.

Hayward AD, Pemberton JM, Berenos C, Wilson AJ, Pilkington JG, Kruuk LEB, Evidence for selection-by-environment but not genotype-by-environment interactions for fitness-related traits in a wild mammal population, *Genetics*.

Hill E, Solomon P, 'A lesser-known pathogen of wheat: *Bipolaris sorokiniana*', In *Integrated disease management of wheat and barley*, Burleigh Dodds Publishing, Cambridge UK.

Hsieh J-F, Chuah A, Patel HR, Sandhu K, Foley WJ, Kulheim C, Transcriptome profiling of *Melaleuca quinquenervia* challenged by myrtle rust reveals differences in defense responses among resistant individuals, *First Look*.

King AJ, George A, Buckle DJ, Novak PA, Fulton CJ, Efficacy of remote underwater video cameras for monitoring tropical wetland fishes, *Hydrobiologia*.

Kruuk LEB, Wilson AN, The challenge of estimating indirect genetic effects on behaviour, *Behavioural Ecology*.

Murray T, Zeil J, Quantifying navigational information: The catchment volumes of panoramic snapshots in outdoor scenes, *PLOS ONE*.

O'Leary B, Burd M, Venn SE, Gleadow R, Integrating the Passenger-Driver hypothesis and plant community functional traits to the restoration of lands degraded by invasive trees, *Forest Ecology and Management*.

Patel N, Mohd-Radzman NA, .. Ivanovici A, Taylor K, .. Djordjevic MA, *et al.*, Diverse peptide hormones affecting root growth identified in the *Medicago truncatula* secreted peptidome, *Molecular and Cellular Proteomics*.

Rolland V, Rae BD, Long BM, Setting sub-organellar sights: accurate targeting of multi-transmembrane-domain proteins to specific chloroplast membranes, *Journal of Experimental Botany*.

Silva-Perez V, Molero G, ..., Furbank RT, Evans JR, *et al.*, Hyperspectral reflectance as a tool to measure biochemical and physiological traits in wheat, *Journal of Experimental Botany*.

Tong H, Cranston PS, *Nilodosis* Kieffer (Diptera: Chironomidae: Chironominae) from South China: a new species and generic overview, *ZooTaxa*.