



NEWS

Kai Chan is the 2017 ACT Scientist of the Year

Congratulations to Kai Chan (Pogson group, PS), named as ACT Scientist of the Year this month by Chief Minister Andrew Barr MLA, in a ceremony at the Australian National Botanic Gardens (see main photo). Read more on the RSB news page, ACT government site and on the ANU media page.

Distinguished Professor Susanne von Caemmerer

Congratulations to Susanne von Caemmerer, on her promotion to Distinguished Professor.

3MT competition

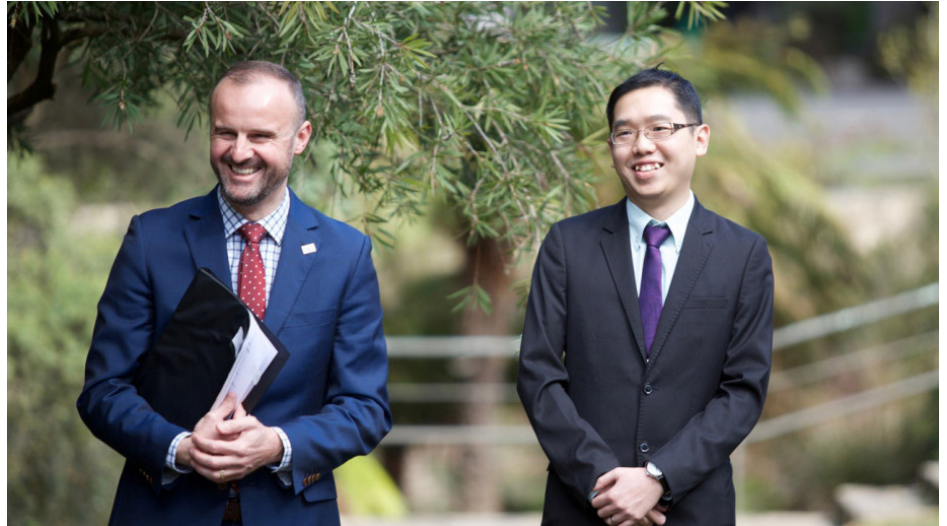


RSB 3MT winner Christiana McDonald-Spicer (Moritz group, E&E) (front right) and runner-up Rita Chou (Backwell group, E&E) (front left) with the other contestants and judges. Second row, contestants: Erin Andrew (Fahrer group, BSB), Melanie Ridgway (Maier group, BSB), Jessica Fenker (Moritz group, E&E), Zara Ahmed (Atkin group, PS), Kathryn Parker (van Dooren & Kirk groups, BSB). Back row, judges: Alex Maier (BSB), Michael Jennions (E&E), Karen Scholte (BTLC), Susan Howitt (BSB & BTLC), Adrienne Nicotra (E&E), Tom Davis (RSB IT), Kai Chan (Pogson group, PS). Image: Sharyn Wragg.

Seven candidates took up the challenge to explain their research into three minutes, in the RSB Three Minute Thesis (3MT) competition held recently in the Slatyer seminar room. Christiana McDonald-Spicer (Moritz group, E&E) won first prize (\$200), with her talk 'Refugia: islands in the landscape'. Rita Chou (Backwell group, E&E), was runner up (\$100), with 'Too hot and thus too hard to be a good mother'.



RSB dominated the leader board for the CMBE 3MT competition, with Melanie Ridgway (Maier group, BSB), pictured left, taking first place, Christiana McDonald-Spicer (Moritz group, E&E)



ACT Chief Minister Andrew Barr, and Kai Chan, at the ACT Scientist of the Year award ceremony, at the Australian National Botanic Garden. Image Jamie Kidston.

taking second and third place going to Erin Andrew (Fahrer group, BSB). Melanie Ridgway won the CMBE People's Choice award.



Erin Andrew, runner up of the Open Day People's Choice 3MT, with Inger Mewburn (Director of Research Training, ANU) and Imelda Whelehan, Dean, Higher Degree Research.

Erin Andrew was also runner-up at the special People's Choice 3MT held at the ANU Open Day. Erin and Christiana go on to the ANU 3MT, to be held on 6 September, tickets available here.

Science in ACTION



Alisha Duncan (CoETP Education Officer, Furbank group, PS), Emmanuel Young (Whitney group, PS), and Riya Rebecca Kuruvilla (von Caemmerer group, PS) at the Science in ACTION event this month.

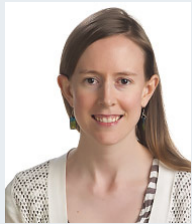
RSB plant scientists, parasitologists and others participated in Science in ACTION this month. More than 7,200 people visited the two-day event at the Old Bus Depot in Kingston, including 1200 students and

teachers from the ACT. Many people from RSB were involved in this big outreach event. From the Centre of Excellence for Translational Photosynthesis:

Tim Rhodes (Whitney group, PS), Ross Dennis (Furbank group, PS), Ben Long (Badger, Price groups, PS), Britta Förster (Badger, Price groups, PS), Bingjun (Amy) Li (Whitney group, PS), Loraine Rourke (Price group, PS), Soumi Bala (Evans, von Caemmerer groups, PS), John Evans (PS), Riya Kuruvilla (von Caemmerer group, PS), Emmanuel Young (Whitney group, PS), Laura Wey (Price group, PS), Florence Danila (von Caemmerer group, PS), Lauren Venugoban (von Caemmerer group, PS), Peng Zhang (von Caemmerer group, PS), Rowarne Leith (Furbank group, PS), Sally-Anne Buck (Whitney group, PS), Viridiana Silva-Perez (Evans group, PS), Stephanie Skinner (Evans group, PS), Eng Kee Au (Price group, PS), Gonzalo Estavillo (Pogson group, PS), Natalia Bateman Vargas (Furbank group, PS), Alisha Duncan (Furbank group, PS), and Link Williams, Trent Wilson and Michael Hill from the combined RSB/RSC workshop.

RSB parasitologists: Melanie Ridgway (Maier group, BSB), who organised the parasitology stand, Richa Harnal (Maier group, BSB), Meenu Pratap (Maier group, BSB), Merryn Fraser (Maier group, BSB), Linden Mueller-Wong (van Dooren group, BSB), Esther Rajendran (Kirk/Lehane group, van Dooren group, BSB), Sanduni Hapuarachchi (van Dooren group, BSB),

DECRA profile: Adele Lehane (Kirk & Lehane group, BSB)



Research background

My interest in research started when I was a second year student at

ANU. I wanted to trade in my job at a supermarket deli for a job in a lab. I was fortunate to be given the opportunity to do a malaria physiology project with Kiaran Kirk and Kevin Saliba, and I have been doing research ever since. After a PhD on chloroquine resistance in Kiaran Kirk's lab, I moved to Columbia University on an NHMRC Overseas Biomedical Fellowship to work in a malaria genetics lab. I returned in 2012 for the Australia-based years of the fellowship and was awarded a DECRA in 2015 to study ion regulation in malaria and *Toxoplasma* parasites.

Current research interests

I am interested in how antiparasitic compounds act and how resistance to them arises, manifests, and can be prevented. My current research centres on membrane transport proteins involved in ion regulation in parasites - some of these have emerged as new drug targets and/or new determinants of drug resistance.

What do you enjoy most about research?

Malaria research is at an exciting stage, with new ways of killing the parasite and promising drug candidates being discovered with increasing frequency. I enjoy being part of both the large, global team that is trying to end malaria, and a small lab team full of highly motivated people. I particularly enjoy the moments when puzzling observations finally make sense, and when a large study comes together and it's time to write the paper.

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



Face painting was a big hit at the RSB parasitology stall. This is a hookworm! Image Alex Maier.

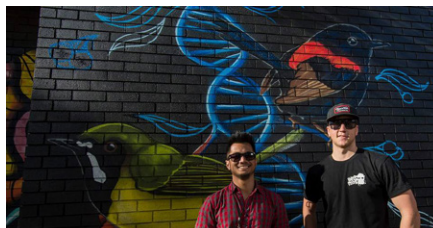
Giel van Dooren (BSB), **Erick Tjhin** (Saliba group, BSB), **Edwin Tjhin** (van Dooren group, BSB), **Christina Spry** (Saliba group, BSB), **Meng Zhang** (Maier group, BSB), **Alex**

Maier (BSB).



Derek Collinge (Pogson group, PS) with a young visitor trying out the CoEPEB virtual reality display at Science in ACTION. Image Mel Norris.

From the Centre of Excellence in Plant Energy Biology: **Lucy Hayes** (Atkin group, PS), **Buddhima Kariyawasam** (Atkin group, PS), **Aaron Smith** (Pogson group, PS), **Ellen Levingston** (Borevitz group, PS), **Pip Wilson** (Pogson group, PS), **Shinichi Asao** (Atkin group, PS), **Arun Yadav** (Pogson group, PS), **Zara Rashid** (Atkin group, PS), **Xin Hou** (Pogson group, PS), **Diep Ganguly** (Pogson group, PS), **Estee Tee** (Pogson group, PS), **Beth Stone** (Pogson group, PS), **Kai Chan** (Pogson group, PS), **Su Yin Phua** (Pogson group, PS), and **Derek Collinge** (Pogson group, PS). **Jack Simpson** (Zeil group, E&E) and Rina Soetanto (formerly JCSMR) attended Science in ACTION to promote their website BioSky, which they set up to give plain-language summaries of medical and health related research.



Josh Penalba (Moritz group, E&E)(above) and Marcin Falkowski (Zeil group, E&E) (below) with their artist collaborator and the artwork inspired by their research. Image Martin Ollman.



Two RSB PhD students - **Josh Penalba** (Moritz group, E&E) and **Marcin Falkowski** (Zeil group, E&E) collaborated one on one with an artist at Science in ACTION, who conceptualised their research as street art,

on the corner of Wentworth Avenue and Eastlake Parade.

ANU Open Day 2017

RSB members were out in force again for the second big outreach event this month - ANU Open Day.

The Union Court reconstruction meant that Science activities were separated from the rest of the university but a steady stream of people visited the lectures, lab coat party, information booth and the biology drop-in centre.

Dave Rowell (E&E), **Uli Mathesius** (PS) and **John Evans** (PS) gave talks, and the following people manned the busy information booth in the Physics Link building: **Andras Keszei** (BTLC), **Rob Magrath** (E&E), **Owen Atkin** (PS), **Juliey Beckman** (BTLC), **Susan Howitt** (BSB), **Rod Peakall** (E&E), **Allen Rodrigo** (CBBU) and **Panit Thamsongsana** (BTLC).



Panit Thamsongsana (BTLC) and Owen Atkin (PS) manning the RSB information booth. Image Mel Norris.

Members of the ARC Centre of Excellence for Translational Photosynthesis helped visitors make algae and yeast balls, at the biology bench at the lab coat party. The balls were then dropped into a pH indicator solution, to show that photosynthesis reduces the acidity of the system, while respiration increases acidity. Thanks to **Baxter Massey** (Price group, PS), **Dean Price** (PS), **Eng Kee Au** (Price group, PS), **Sally-Anne Buck** (Whitney group, PS), **Laura Wey** (Price group, PS), and **Hilary and Mary Stuart Williams** (Farquhar group, PS).



Sally Anne Buck (Whitney group, PS) and Eng Kee Au (Price group, PS) making algae balls with visitors to the lab coat party. Hilary Stuart Williams is behind them. Image Alisha Duncan.

The breadth of RSB research was evident at the biology drop in centre, with work from all three divisions on show, as well as undergraduate students from the ANU Biology Society. Thanks to **Stefan Bröer** (BSB), **Tim Brown** (Borevitz group, PS), **Kai Chan** (Pogson group, PS), **Stephen Fairweather** (Bröer group, BSB),

Yiheng Hu (Rathjen group, PS), **Scott Keogh** (E&E), **Andras Keszei** (BTLC), **Ellen Levingston** (Borevitz group, PS), **Xuan Kun Li** (Rowell group, E&E), **Ram Nagar** (Rathjen group, PS), **Mel Norris** (RSB comms officer), **Michaela Purcell** (Rowell group, E&E), **Dave Rowell** (E&E), **Jack Simpson** (Zeil group, E&E), **Aly Weirman** (Borevitz group, PS), **Panit Thamsongsana** (BTLC) and **Tom Davis** (RSB IT).



Yiheng Hu (Rathjen group, PS) demonstrates the portable MiniON sequencing device (left) while Kai Chan (Pogson group, PS) helps ANU Dean of Science Kieran Kirk with the virtual reality headset, in the biology drop-in centre. Image Mel Norris.



Stefan Bröer (BSB) explains his diabetes research to visitors in the biology drop-in centre. Image Mel Norris.



Xuan Kun Li (Rowell group, E&E) showed items from the Zoology museum and the Australian National insect Collection. Image Mel Norris.

IN THE MEDIA

Rod Peakall (E&E) appeared on Scope - Network Ten's science show for kids, in an episode entitled 'Evolving and Adapting Science', that aired on Thursday 10 August. You can watch the [episode here](#), Rod's segment runs from 5.37 - 8.03.

Rob Magrath's (E&E) recent work has been covered in the journal *Anthropocene* in an article entitled 'Translating the language of birds', and *Forbes* magazine, 'Conspicuous birds are cautious birds'.

The Canberra Times featured an article about **Rob Sharwood's** (Furbank group, PS) upcoming trip to East Timor, with his former science teacher, David Johns, now principal of the Islamic School of Canberra. The pair will meet with East Timor teachers and share simple experiments that don't need expensive equipment and new ways

of lesson delivery, to help them teach science with limited resources.

NEW APPOINTMENTS

Argyll McGhie (Borevitz group, PS) joined the Australian Plant Phenomics Facility (APPF) ANU node on the 5th June as a web developer to work on improving user access to the APPF traitcapture webservice. The webservice provides monitoring and visualization services to APPF clients.



Flavia Machado, from Brazil, will be with the Cardillo group until the end of the year, working on extinction risk in primates.



PAPERS ACCEPTED

Aguilar C, Raina, J-B, Motti CA, Fôret S, Hayward DC, *et al.*, Transcriptomic analysis of the response of *Acropora millepora* to hypo-osmotic stress provides insights into DMSP biosynthesis by corals, *BMC Genomics*.

Busch FA, Deans RM, Holloway-Phillips M-M, 'Estimation of photorespiratory fluxes by gas exchange', in: Fernie AR, Bauwe H, Weber APM (eds) *Photorespiration. Methods in Molecular Biology*, vol 1653. Humana Press, New York, NY.

Butler NE, Magrath RD, Peters RA, Lack of alarm calls in a gregarious bird: models and videos of predators prompt alarm responses but no alarm calls by zebra finches, *Behavioral Ecology & Sociobiology*.

Doughty C, Goldsmith G, Raab N, Girardin C, Amezcua FF, Meir P *et al.*, What controls carbon use efficiency among Amazonian tropical forests, *Biotropica*.

Esquivel-Muelbert A, Galbraith D, Dexter KG, Baker TR, Lewis SL, Meir P *et al.*, Biogeographic distributions of neotropical trees reflect their directly measured drought tolerances. *Scientific Reports*.

Feller IC, Ball MC, Ellis JI, Lovelock CE, Reef R, Interactive effects of climate and nutrient enrichment on patterns of herbivory by different feeding guilds in mangrove forests, *Global Ecology and Biogeography*.

Head ML, Kahn AT, Henshaw J, Keogh JS, Jennions MD, Sexual selection on male body size, genital length and

heterozygosity: consistency across habitats and social settings, *Journal of Animal Ecology*.

Henry RJ, Rangan P, Furtado A, Busch FA, Farquhar GD, Does C4 photosynthesis occur in wheat seeds? *Plant Physiology*.

Kohlen W, Ng JLP, Deinum EE, Mathesius U, Auxin transport, metabolism and signaling during nodule initiation: Indeterminate and determinate nodules, *Journal of Experimental Botany*.

Marsh J, Vega Trejo R, Jennions MD, Head ML, Why does inbreeding reduce male paternity? Effects on sexually selected traits, *Evolution*.

Nottingham AT, Hicks LC, Bååth E, Meir P, Fungal growth responds to nitrogen but bacterial growth responds to phosphorus in tropical forest soils, *Biology and Fertility of Soils*.

Pavón-Vázquez CJ, Nieto-Montes de Oca A, Mendoza-Hernández AA, Centenero-Alcalá E, *et al.*, A new species of *Plestiodon* (Squamata: Scincidae) from the Balsas Basin, Mexico, *Zootaxa*.

Rumman R, Atkin OK, Bloomfield KJ, Eamus D, Variation in bulk-leaf $\delta^{13}C$ discrimination, leaf traits and water-use efficiency-trait relationships along a continental-scale climate gradient in Australia, *Global Change Biology*.

Szabó M, Larkum AWD, Suggett DJ, Osmond, C.B., Zavafer A, Chow, WS, *et al.*, Non-intrusive assessment of Photosystem II and photosystem I in whole coral tissues, *Frontiers in Marine Science*.

Tcherkez G, Gauthier P, Buckley TN, Busch FA, Atkin OK, Farquhar GD, *et al.*, Leaf day respiration: low CO₂ flux but high significance for metabolism and carbon balance, *New Phytologist*.

Turnbull MH, Ogaya R, Barbeta A, Atkin OK, *et al.*, Light inhibition of foliar respiration in response to soil water availability and seasonal changes in temperature in Mediterranean holm oak (*Quercus ilex*) forest, *Functional Plant Biology*.

Zhang X, Farah N, Rolston L, Ericsson DJ, Catanzariti A-M, Hardham A, Williams SJ, Jones DA, *et al.*, Crystal structure of the *Melampsora lini* effector AvrP reveals insights into a possible nuclear function and recognition by the flax disease resistance protein P, *Molecular Plant Pathology*.