



NEWS

Kai Xun Chan wins JG Crawford Prize

Kai Xun Chan (Pogson group, PS) has been awarded the JG Crawford prize for 2015, for his thesis entitled 'Structural and Functional Characterisation of Chloroplast Signalling'.



The Crawford Prize is

ANU's premier award for graduate research excellence. Only one is awarded each year in all of the sciences from medicine to engineering, physics and maths.

The last biologist to win the PhD award was in 2008, and since 1973, only 12 students from RSB, RSBS, BAMBI and BOZO have been awarded the prize.

Kai, who continues at RSB as a postdoc in the Centre of Excellence in Plant Energy Biology, will receive a medal, and a cash prize of \$2000 at a ceremony in December.

Konzo update



Allen Rodrigo and Stefan Bröer visited the Konzo call centre on ANU Giving Day, and it was a hive of activity. (Image: Stefan Bröer).

More than \$84,000 has been raised so far for Konzo prevention during the ANU giving day campaign, from 806 donors.

Flora of the Pacific Basin exhibition opening



Guillaume Tcherkez and His Excellency Christophe Lecourtier, Ambassador of France to Australia, at the opening of 'Flora of the Paris Basin', at the National Botanic Gardens in Canberra. (Image: Sharyn Wragg).

The opening ceremony for Guillaume Tcherkez's (PS) exhibition 'Flora of the Paris basin' took place at the Australian National



Computational biologists Thomas (King Fung) Wong, Allen Rodrigo, Louis Ranjard and Paul Slade (all Rodrigo group, CBBU) extracting DNA from a kangaroo steak in the EBL (Ecogenomics and Bioinformatics lab). (Image: Mel Norris) (see News story).

Botanic Gardens (ANBG) on the evening of Friday 14 October. Speakers included Peter Byron, General Manager of the ANBG, Graham Farquhar (PS), Guillaume, and RSB Director Allen Rodrigo, and the exhibition was declared officially open by His Excellency Christophe Lecourtier, the Ambassador of France to Australia. The exhibition is on at the ANBG Visitor Centre, until Sunday 6 November 2016, and features the flora of the Paris Basin and its history in the advancement of science, wild flowers depicted in impressionist art, and the relationships between Australian species and French species.

Guillaume took a similar exhibition to Paris in 2013, on Australian flowers, supported by the Australian Embassy.



Cyrille Abadie, Sophie Blanchet (both Tcherkez group, PS), Josette Masle (PS), Zied Kaabia (Tcherkez group, PS), Margaret Barbour (University of Sydney), Meisha-Marika Holloway Phillips (Farquhar group, PS) at the exhibition. (Image: Sharyn Wragg).

Lab training for Computational Biologists

Computational biologists and bioinformaticists from the Rodrigo group (CBBU) got a lab skills refresher this month, with a crash course in DNA extraction in the EBL (see main photo). "Bioinformaticists use sequencing data all the time, but some have never done it in the lab," says Rodrigo group lab manager Louis Ranjard. "DNA extraction is an important aspect of

generating data, and it's important that they have an idea of how difficult it can be, and to better understand the problems you can face doing lab work."

Bioinformatics workshops are popular with scientists working in the lab and in the field, according to Louis, but statisticians and computational biologists need to know how to do lab experiments as well.

Also learning to do DNA extraction in the



Paul Slade, Allen Rodrigo and Charley Lineweaver in the EBL (Image: Mel Norris).

EBL that day was astrobiologist and Friend of RSB, Charley Lineweaver, who has funding to produce a MOOC (Massive Open Online Course) around the topic of 'where do we come from/are we alone?'. Video of Charley doing and

explaining DNA sequencing will be used in the course, which will cover the origins of life on earth, evolution to the modern day, and will show how DNA sequences are used to build phylogenetic trees.

Controlled Environment/AusPheno conference

The combined 5th International Controlled Environment/inaugural AusPheno Conference 2016 was held recently at the CSIRO Discovery Centre. The conference brought together 155 Australian and International plant science researchers and professionals for a week of talks and activities. RSB's Bob

Teaching faculty profile:

Isabelle Ferru (BTLC)



What is your research interest?

I am originally a parasitologist but my interest is not restricted to parasites and the diseases they cause. I am passionate about health and disease in general and particularly how the health of vulnerable populations can be improved. This ranges from better access to sanitation, education, safe drinking water, healthy eating to mitigating climate change and reducing loss of biodiversity. Making our modern world a healthier world is a big challenge and I am deeply interested in making a small contribution to it.

What do you enjoy about teaching?

Being surrounded by young enthusiastic people making me forget I am not as young as them any longer! More seriously, I most enjoy the challenge of empowering young individuals with the knowledge and skills necessary to critically reflect on current issues in health and disease and to persuade them to take part in actions that will make this world a more equitable and healthier world. I am also always amazed by the progress of my students. I teach at all levels, from first year to Masters and I have the privilege to see many students make huge progress throughout their years of study at ANU.

Who is your science hero?

I could say it is Louis Pasteur, being French myself it would make sense! Yet I will rather select an Australian microbiologist, the late Frank Fenner who I had the pleasure and privilege to know. Not only is Frank Fenner internationally well-known for his participation in the eradication of smallpox but less well-known maybe was his implication in environmental science. Yet, it is the generosity and approachability of this grand man which touched me most. He would provide advice and guidance to anyone who asked.

This newsletter is archived at biology.anu.edu.au/news-events/newsletter.
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Furbank (PS), Justin Borevitz (PS, EE), Tim Brown, (Borevitz group, PS, EE) Sarah Taghavi Namin (Borevitz group, PS, EE) and Alexander Ivakov (Furbank group, PS) presented talks on plant phenomics and analysis alongside an international selection of plant scientists, growth environment experts, NASA scientists and palaeobotanists. More information including copies of the talks presented can be accessed from the [website](#). - Aly Weirman (Pogson group, PS).

Congratulations

Awards

At the recent International Congress for Tropical Medicine and Malaria in Brisbane (18-22 September), a congress with more than 1000 delegates, **Adele Lehane** (Kirk group, BSB) won the prize for best presentation by an early career researcher and **Erick Tjhin** (Saliba group, BSB) was runner up for best student oral presentation.

Diep Ganguly (Pogson group, PS) won the Functional Plant Biology best paper award for 2015, which was officially presented at the ComBio 2016 meeting this month.



President of the Australian Society of Plant Scientists, John Evans, presents Diep Ganguly with the FPB award, at the ComBio meeting this month (Image: supplied).

Stephen Fairweather (Bröer group, BSB) was awarded an Australian Society for Biochemistry and Molecular Biology (ASBMB) Fellowship at ComBio 2016.



Stephen Fairweather (far right) and the other recipients of ASBMB fellowships, at the ComBio meeting this month (Image: supplied).

Lucy Aplin (EE PhD graduate with Andrew Cockburn in 2013, now a Junior Fellow in Zoology at Oxford) won the American Society of Naturalists Young Investigator Award this year. This is a highly prestigious international award - here is a link to her talk.

Grants

Aude Fahrer (BSB) is part of a team led by Desmond Yip (ANU Medical School and The Canberra Hospital) that has been awarded a Private Practice grant of \$26,905, for 'Phase I study of Complete Freund's Adjuvant (CFA) in patients with refractory and relapsed solid tumours'.

Chris Fulton (EE) has won the 2017 Thomas Davies Research Grant from the Australian Academy of Science for his research on how habitat-forming seaweeds respond to unseasonal shifts in sea surface temperature arising from ocean warming and marine heatwaves.

Iliana Medina (Langmore group, EE) has won an Alfred Deakin Research Fellowship to support two years of research at Deakin University.

Marta Vidal-Garcia (Keogh group, EE) and **Liam Bailey** (Langmore and van de Pol groups, EE) have both won 6-month Endeavour Fellowships for next year.

IN THE MEDIA

A video produced by the College of Science marketing team and featuring **Rob Magrath** (EE) has been their most popular Facebook post ever. "The reach of this post was three times that of the second most popular post and is far and away our most popular video", says Tabitha Carvan, from the team who made the video. The video, which also featured Will Grant and Rod Lamberts from CPAS coming under attack from the Linnaeus Way magpies, has had 39,000 views, been shared 345 times, and the post has been seen by 126,700 people. "The purpose of the video was to promote the good-natured expertise of scientists at ANU, and to pique interest in science as a subject area, and I think it achieved both those things," says Tabitha. Missed the video? You can watch it again [here](#).

ABC news and ABC666 recently featured a story about **Dan Starrs** (Divisional Visitor, EE) and former EE post grad **Richard Milner's** work on bringing back broad-toothed rats to the ACT.

WELCOME



Matthew Johnson joined Denisse Leyton's (BSB) group this week. Matt will be working on the complexities of outer-membrane beta-barrel assembly using

biochemical and structural techniques. Matt joins us from Monash University where he worked on outer-membrane homeostasis systems and their role in antimicrobial resistance in *A. baumannii*, and the structure and function of AB5 toxins.

Welcome to **Erin Walsh** who is joining **Scott Keogh's** (EE) group until mid next year. Erin comes from Psychology (via epidemiology) and she works part time in the Research School of Population Health. Erin is co-authoring a book with



Scott while she is in RSB. You can see a short video about Erin's illustration work [here](#).

Welcome to the following people, who join the ARC Centre of Excellence in Plant Energy Biology this month:

Derek Collinge rejoins the Pogson group (PS) after a year working as a postdoc at the University of Helsinki on a project entitled 'Investigating protein-protein interactions with the cysteine-rich receptor-like kinases'. He will be lab manager for the Centre.



Shinichi Asao (left) has joined the Atkin group (PS). Shinichi was previously at Colorado State University in the USA. **Oorbessy (Reshmi) Gaju** (below left) (Atkin group, PS) and **Darren Cullerne** (bottom left) (Borevitz group, PS) have also joined the Centre as part of a recently funded International Wheat Yield Program grant. Reshmi comes from Nottingham University, while Darren has recently completed his PhD at the University of Newcastle/CSIRO, and previously worked at RSB in the IT department.



FAREWELL

Alonso Zavaleta Fernandez de Cordova, who started his PhD under the supervision of the late Warwick Hillier, completed it in Fred Chow's group (PS), with a thesis entitled "Spectroscopic studies

of photodamage and photoprotection of Photosystem II". He has now gone on to take up a postdoctoral position at the Bioenergetics and Protein Design Lab, Migal-Galilee Research Institute, Tel-Hai, Israel. Alonso remains as a Visiting Fellow in the Chow group until October 2017.

PHDS SUBMITTED

Catherine Young (Backwell Group EE) 'The Causes and Consequences of Group Living in the Crimson Finch (*Neochmia Phaeton*)'.

Jared Streich (Borevitz Group PS) 'Genetic, Geographic, and Climate Diversity of a Weedy Species: The *Brachypodium Distachyon* Species Complex'.

PHDS AWARDED

Mariano (Jordi) Muria Gonzalez (Solomon Group PS) 'Secondary Metabolites in the *Parastagonospora Nodorum*-Wheat Pathosystem'.

PAPERS ACCEPTED

Busch, FA, Sage, RF, The sensitivity of photosynthesis to O₂ and CO₂ concentration identifies strong Rubisco control above the thermal optimum, *New Phytologist*.

Campany, CE, Tjoelker, MG, von Caemmerer, S, Duursma, RA, Coupled response of stomatal and mesophyll conductance to light enhances photosynthesis of shade leaves under sunflecks, *Plant Cell and Environment*.

Casey, L, Lavrencic, P, Bentham, AR, ...Williams, SJ, *et al.* The CC domain structure from the wheat stem rust resistance protein Sr33 challenges paradigms for dimerization in plant NLR proteins, *Proceedings of the National Academy of Sciences of the United States of America*.

Eichten, SR, Stuart, T, Srivastava, A, Lister, R, Borevitz, JO, DNA methylation profiles of diverse *Brachypodium distachyon* aligns with underlying genetic diversity, *Genome Research*.

Fulton, CJ, Wainwright, PC, Hoey, AS, Bellwood, DR, Global ecological success of *Thalassoma* fishes in extreme coral reef habitats, *Ecology & Evolution*.

Harts, AMF, Booksmythe, I, Jennions, MD, Mate guarding and frequent copulation in birds: a meta-analysis of their relationship to paternity and male phenotype, *Evolution*.

Ishikawa, N, Takabayashi, A, Noguchi, K, Tazoe, Y, Yamamoto, H, von Caemmerer, S, Sato, F, Endo, T, NDH-mediated cyclic electron flow around photosystem I is crucial for C4 photosynthesis, *Plant Cell Physiology*.

Kawasaki, A, Donn, S, Ryan, PR, Mathesius, U, Devilla, R, Jones, A, Watt, M, Microbiome and exudates of the root and rhizosphere of *Brachypodium distachyon*, a model for wheat, *PLoS ONE*.

Li, Y, Alonso-Peral, M, Wong, G, Wang, M-B, Millar AA, Ubiquitous miR159 repression of MYB33/65 in Arabidopsis rosettes is robust and is not perturbed by a wide range of stresses, *BMC Plant Biology*.

Osborn, HL, Alonso-Cantabrana, H, Sharwood, RE, Covshoff, S, Evans, JR, Furbank, RT, von Caemmerer, S, Effects of reduced carbonic anhydrase activity on CO₂ assimilation rates in *Setaria viridis*: a transgenic analysis, *Journal of Experimental Botany*.

Perez, DM, Christy, JH, Backwell, PRY, Choosing a mate in a high predation environment: Female preference in the fiddler crab *Uca terpsichores*, *Ecology and Evolution*.

Ranjard, L, Reed, BS, Landers, TJ, Rayner, MJ, Friesen, MR, Sagar, RL, Dunphy, BJ, MatlabHTK: a simple interface for bioacoustic analyses using Hidden Markov Models, *Methods in Ecology and Evolution*.

Reichel, M, Liao, Y, Rettel, M, Ragan, C, Evers, M, Alleaume, A-M, Horos, R, Hentze, MW, Preiss, T and Millar, AA, *In planta* determination of the mRNA-binding proteome of Arabidopsis etiolated seedlings, *The Plant Cell*.

Rogers, A, Medlyn, B, Dukes, J, Bonan, G, von Caemmerer, S, *et al.*, Roadmap for improving the representation of photosynthesis in earth system models, *New Phytologist*.

Venn, S, Myers-Smith, I, Camac, J, Nicotra, A, Climate change: Alpine shrubs as ecosystem engineers, *Hot Topics in Ecology*.

Zhu, H, Zeng, L-D, Yi, X-P, Peng, C-L, Zhang, W-F, Chow, W-S, The half-life of the cytochrome *bf* complex in leaves of pea plants after transfer from moderately-high growth light to low light, *Functional Plant Biology*.