



NEWS

Graham Farquhar (PS) has been awarded the 2015 Prime Minister's Prize for Science, for his groundbreaking work on understanding the process of photosynthesis (see photo, right.)

Eric Stone has been appointed Director of the Centre for Genomics, Metabolomics and Bioinformatics (CGMB). He will be a Professor within the RSB (0.9FTE) and the Research School of Finance and Applied Statistics (0.1FTE) and will take up his role on 1 July 2016.



Currently Professor in Biological Sciences at North Carolina State University in the USA, he is a quantitative biologist who combines statistical methods and mathematical theory to

investigate how genetic variation has shaped biological diversity.

Chris Fulton (EEG) has been elected President of the Australian Society for Fish Biology.

LI6400 portable photosynthesis system course

Participants from RSB and CSIRO were given detailed theory and practical demonstrations during a two day workshop sponsored by the



ARC CoE for Translational Photosynthesis. Sessions covered gas exchange and chlorophyll fluorescence, how to operate and maintain the instrument. The photo shows PhD scholar **Lingling Zhu** (Atkin Group, PS) taking

apart the optical bench.

Awards

Sabrina Chin (Mathesuis Group, PS) won a student poster prize at the 9th International Symposium of Root Research.

Barry Pogson (PS) and **Craig Moritz** (EEG) have been identified by Thomson Reuters as highly cited researchers in Plant and Animal Sciences (Barry) and Environment/Ecology (Craig).

Grants

The International Wheat Yield Partnership has just announced their first round of grants; total value of funded research is ~US\$20 million across 8 selected projects. RSB was successful in both submitted bids: the first involves **Barry Pogson**, **Owen Atkin**, **Justin Borevitz** (ARC CoE in Plant



Distinguished Professor Graham Farquhar after receiving the Prime Minister's Prize for Science, flanked by Christopher Pyne, Minister for Industry, Innovations and Science (left), and the Prime Minister, Malcolm Turnbull (right) (see News).

Energy Biology) and **Robert Furbank** (ARC CoE for Translational Photosynthesis), and is concerned with screening wheat varieties to identify the genetic basis for variation in respiratory energy use efficiency; and the second involves **John Evans**, **Robert Furbank** and the ARC CoE for Translational Photosynthesis which will screen wheat to establish a genetic association with photosynthetic characters.

Peter Solomon (PS) has secured a grant of \$320,000 from the Grain Research and Development Council to undertake viral-induced gene silencing, in conjunction with Rothamsted Research, UK.

Robert Sharwood (PS) has been awarded a 2016 Thomas Davies Research Grant for Marine, Soil and Plant Biology. The grant, which is awarded by the Australian Academy of Science, is worth \$10,000 over 2 years.

IN THE MEDIA

Thomas Merkling (EEG) was interviewed on 666 ABC Canberra about his group's work on how the diet and habitat of frilled lizards affects the colour of the frill.

Tamara Kayali Browne (BTLC) was interviewed on 666 ABC Canberra, as part of a panel discussion on the ethics of choosing the sex of your child.

PHDS SUBMITTED

Christina Delay (Djordjevic Group, PS) 'CoE peptides as regulators of root development.'

Iliana Medina (Langmore Group, EEG) 'Coevolution between shining bronze-cuckoos and their thornbill hosts.'

NEW APPOINTMENTS

Nichole Hanlon joins the RSB administration team as **Allen Rodrigo's** Executive Assistant. Nichole worked at Parliament for six years, in a number of roles, including in the Parliamentary travel agency and as the EA to Prime Minister Julia Gillard.



Among her claims to fame, she has made President Obama a cup of tea (Earl Grey, hot, with honey)! Nichole works 9.30am-2.30pm, five days a week and can be found in Room 124, Building 46 (Robertson).

Thomas Davis has been appointed to the role of RSB IT Client Services Team Leader

WELCOME

Daisuke Sugiura is visiting the Evans



Group (PS) for 9 months, supported by a Japanese postdoctoral fellowship. He will be investigating effects of source:sink interactions on leaf morphology and physiology in association with the ARC CoETP.

Patrick Meir (PS) has returned to RSB to complete his Future Fellowship and take up his continuing position. He is located near his old office in the ecophysiology lab in the Robertson building.

Early career researcher profile:

Thomas Wallenius (EEG)

Research background



I completed my PhD in 2013 with a research focus on the obligate pollination mutualism between weevils and cycad

host plants. The research largely involved investigating heat production (thermogenesis) and volatile emissions in cycads, and their effects in mediating behaviours of the pollinating insects. During and since completing my PhD I have also had strong involvement with the Australian National Insect Collection at CSIRO, and in teaching Entomology and Invertebrate Zoology in ANU undergraduate courses.

Research achievements

Some of the most interesting research I have conducted has involved investigating olfaction and the neuroethological bases of insect behaviour in pollination. This was achieved using a method known as electroantennography (EAG), which relies on measures of electrical activity of nerves to determine biologically relevant responses.

Current research interests

I am extremely lucky to be involved with some great research groups at the ANU and to have the opportunity to expand on my background in invertebrate biology, chemical ecology and pollination biology. Of late, my research interests have (more formally) progressed to taxonomy of a spectrum of terrestrial and marine invertebrates, phylogeography of Mygalomorph spiders, freshwater ecosystems, and coevolutionary associations/processes of other plant-insect mutualisms.

Who do you admire in science?

While this person could probably be regarded more as an artist than a scientist, I would have to say that I most admire Ernst Haeckel. He had a supreme ability to exquisitely and exactly render the structures and forms found in nature. To me, his works remain continually and truly captivating masterpieces.

This newsletter is archived at biology.anu.edu.au/news-events/newsletter.

Layout: Mel Norris & Sharyn Wragg
Editing: Stefan Bröer & Mel Norris.

PAPERS ACCEPTED

Agarwal, V, Toshniwal, P, Smith, NE, Smith, NM, Corry, B, *et al*, Enhancing the efficacy of cation-independent mannose 6- phosphate receptor inhibitors by intracellular delivery, *Chemical Communications*

Breen, S, Solomon, PS, Bedon, F, Vincent D, Surveying the potential of secreted antimicrobial peptides to enhance plant disease resistance, *Frontiers in Plant Science*

Browne, TK, Why parents should not be told the sex of their fetus, *Journal of Medical Ethics*

Cain, KE, Cockburn, A, Langmore, N, Female song rates in response to simulated intruder are positively related to reproductive success, *Frontiers in Ecology and Evolution*.

Chakrabarti, A, Velusamy, T, Tee, CY, Jones, DA, A mutational analysis of the cytosolic domain of the tomato Cf-9 disease-resistance protein shows membrane-proximal residues are important for Avr9-dependent necrosis, *Molecular Plant Pathology*

Corry, B, Long timescale molecular dynamics simulations for understanding ion channel function. In *Pumps, Channels and Transporters: Methods of Functional Analysis* RJ Clarke and MAA Khalid (eds)

Cranston, PS & Krosch, MN, Molecules and morphology include the informal taxon 'Genus Chile' in *Podonomopsis Brundin* (Chironomidae: Podonominae), *Invertebrate Systematics*

Drobnak, I, Braselmann, E, Chaney, JL, Leyton, DL, *et al.*, Of linkers and autochaperones: an unambiguous nomenclature to identify common and uncommon themes for autotransporter secretion, *Molecular Microbiology*

Elso, CM, Chu, EPF, Alsayb, MA, Bröer, S, *et al.*, *Sleeping Beauty* transposon mutagenesis as a tool for gene discovery in the NOD mouse model of Type 1 Diabetes, *G3*

Farrow, R, Butterfield, M, Cranston, PS, New austral records of massive swarming by a chloropid fly, *Chloromerus striatifrons* (Diptera: Chloropidae), *Austral Entomology*.

Head ML, Vega Trejo R, Jacomb F, Jennions MD, Predictors of male insemination success in the mosquitofish *Gambusia holbrooki*, *Ecology and Evolution*

Kramer, MJ, Bellwood, O, Fulton, CJ, Bellwood, DR, Refining the invertivore: diversity and specialisation in fish predation on coral reef crustaceans, *Marine Biology*

Leyton, DL, Belousoff, MJ, Lithgow, T, The Beta-Barrel assembly machinery complex,

Methods in Molecular Biology.

Lim, IE, Wilson, SK, Holmes, TH, Noble, MM, Fulton, CJ, Specialisation within a shifting habitat mosaic underpins the seasonal abundance of a tropical fish, *Ecosphere*

Medina, I & Langmore, NE, Batten down the thatches: Front-line defences in an apparently defenceless cuckoo host, *Animal Behaviour*

Nhassico, D, Bradbury, JH, Cliff, J, Majonda, R, *et al.*, Use of the wetting method on cassava flour in three konzo villages in Mozambique reduces cyanide intake and may prevent konzo in future droughts, *Food Science and Nutrition*

Nottingham AT, Turner BL, Whitaker J, Ostle N, McNamara NP, Bardgett RD, Salinas N, Meir P, Soil microbial nutrient constraints along a tropical forest elevation gradient: a belowground test of a biogeochemical paradigm, *Biogeosciences*

Paternoster, L, Standl, M, Waage, J, Lockett, GA, *et al.*, Multi-ethnic genome-wide association study of 21,000 cases and 95,000 controls identifies 10 new risk loci for atopic dermatitis, *Nature Genetics*

Perez, DM, Heatwole, SJ, Morrell, LJ, Backwell, PRY, Handedness in fiddler crab fights, *Animal Behaviour*

Rowland, L, Lobo do Vale, RL, Christoffersen, B, Meir, P, *et al.*, After more than a decade of soil moisture deficit, tropical rainforest trees maintain photosynthetic capacity, despite increased leaf respiration, *Global Change Biology*

Shabala, S, White, R, Djordjevic, MA, Ruan, Y-L, Mathesius U, Root to shoot signaling: diverse molecules, pathways and functions, *Functional Plant Biology*.

Starrs, T, Starrs, D, Lintermans, M, Fulton, CJ, Assessing upstream invasion risk in alien freshwater fishes based on intrinsic variations in swimming speed performance, *Ecology of Freshwater Fish*

Thomas, M, Corry, B, A computational assessment of the permeability and salt rejection of carbon nanotube membranes and their application to water desalination, *Philosophical Transactions of the Royal Society*

Wilson, PB, Rebetzke, GR, Condon, AG, Of growing importance: combining greater early vigour and transpiration efficiency for wheat in variable rainfed environments, *Functional Plant Biology*.

Zavafer, A, Hon, CM, Hillier, W, Chow, WS, Takahashi, S, Photodamage to the oxygen evolving complex of Photosystem II by visible light, *Scientific Reports*.