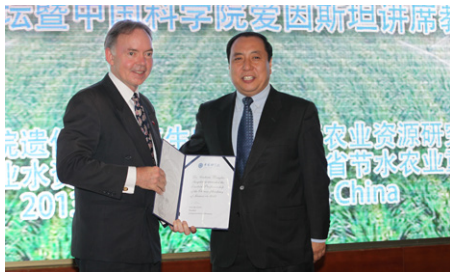




NEWS

Einstein Professorship

In September **Graham Farquhar** (PS), accompanied by **Josette Masle** and their son Etienne, together with **Fubao Sun** and **Kieran Kirk**, travelled to Shijiazhuang in China where Graham was presented with the Chinese Academy of Sciences' (CAS') prestigious [Einstein Professor](#) award, as well as being made an Honorary Professor in the CAS Center for Agricultural Resources Research.



The Last Lecturer

Kieran Kirk (BSB) has been voted by students to deliver the University's [2013 Last Lecture](#), held each year in the Hall at University House on the final teaching Thursday of the year (October 31).

MEDIA

Craig Moritz and **Rosa Agudo** (EEG) have an [invited review](#) in *Science*, titled 'The future of species under climate change: resilience or decline?'. In it, the authors explain that species can persist under rapid climate change if they can adapt *in situ*, or shift geographic range to track their required climate conditions. A [summary](#) is provided on the Centre for Biodiversity Analysis website.

Research by **Lucy Aplin** (Cockburn lab, EEG) and colleagues has been featured [in the media](#). The [paper](#), published in *Ecology Letters*, describes how the personality of individual great tits (*Parvus major*) predicts aspects of their social behaviour and population structure.

David Kainer (Foley lab, PS), has had his [Three Minute Thesis](#) (3MT) topic featured in an ANU YouTube video and [web article](#). In it, David explains that while Australia is no longer the biggest producer of eucalypt oil, it could produce the best quality oil through applying genetic studies to inform selective breeding of the blue mallee.



In male great tits (*Parvus major*), bold birds were found to have more relationships, while shy birds maintained smaller but more stable social groups (see item under 'MEDIA'). (Photo: Joe Tobias.)

Sandra Binning (Keogh and Backwell labs, EEG) and **Dominique Roche** (Jennions lab, EEG), have had their research featured as an ANU YouTube video and [web article](#). Sandra and Dominique are studying how a species of reef fish copes with increases in water flow, as is predicted by climate change models to occur.

Cats and foxes are infamous for their negative impact on Australia's native mammals. However, a [paper](#) by **Emily Hanna** (Cardillo lab, EEG) and **Marcel Cardillo** (EEG), published in *Global Ecology and Biogeography*, and featured [in online media](#), shows that in certain circumstances, these predators can actually help mammal survival by suppressing mesopredators such as the black rat.

APPOINTMENTS

Veronica Roman Reyna has joined the Rathjen lab (PS) as a PhD student. Veronica has a Master's degree in microbiology from the National University of Colombia, and will study the exploitation of host photosynthesis by the wheat stripe rust fungus.

Tijana Stefanovic has joined the Tscharke lab (BSB) as a Research Assistant. Tijana did honours in the Tscharke lab in 2012 and has returned after six months working in the Gordon lab (EEG) and a few months travelling.

Dimitri Tolleter has joined the Badger lab (PS) as a Postdoctoral Fellow. Dimitri will be working on transferring algal bicarbonate transporters into plant chloroplasts.

Ciro Troise is visiting the Solomon lab (PS) from University of Naples 'Federico II' where he is doing a PhD in agrobiology and agrochemistry. Ciro will work for six months on the purification and characterisation of phytotoxins from the cereal pathogen *Cochliobolus sativus*.

PAPERS ACCEPTED

Alkaladi, A & Zeil, J, The functional anatomy of the Fiddler crab compound eye (*Uca vomeris*: Ocypodidae, Brachyura, Decapoda), *Journal of Comparative Neurology*.

Aplin, LM, Farine, DR, Morand-Ferron, J, Cole, EF, Cockburn, A & Sheldon, BC, Individual personalities predict social behaviour in wild networks of great tits (*Parus major*), *Ecology Letters*.

Binning, SA, Roche, DG & Fulton, CJ, Localised intraspecific variation in the swimming phenotype of a coral reef fish across different wave exposures, *Oecologia*.

Brouwer, L, van de Pol, M & Cockburn A, The role of social environment on parental care: offspring benefit more from the presence of female than male helpers, *Journal of Animal Ecology*.

Chen R & Chung S-H, Molecular dynamics simulations of scorpion toxin recognition by the Ca²⁺-activated potassium channel KCa3.1, *Biophysical Journal*.

Cowman, P & Bellwood, D, Vicariance across major marine biogeographic barriers: temporal concordance and the relative intensity of hard

Lab Leader profile: Eldon Ball (EEG)



Lab researching:
The molecular basis of coral biology.

Greatest achievement:

- Participation in the discovery and characterization of insect 'muscle pioneers'; the scaffolds upon which insect muscles develop.
- Discovery, with Jim Truman, that nitric oxide plays a role in target recognition by outgrowing embryonic motoneurons in insects.
- Molecular characterization, together with David Miller, David Hayward, and Sylvain Foret, of many aspects of coral biology, particularly embryonic development and metamorphosis. This work has led to increasingly complete genome and transcriptome data for *Acropora millepora* and will culminate in the imminent release of the genome.

Next big thing:

Our understanding of gene function in adult corals has lagged far behind that for developmental stages due to the presence of the massive calcium carbonate skeleton and the contractility of the adult polyps. We want to expand our studies on coral nervous system function and on calcification into adult corals.

What do you see as future challenges for your field of research?

Putting the flood of genome sequence data that has recently become available into a functional context.

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Content & layout: Sharyn Wragg
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versus soft barriers, *Proceedings of the Royal Society B*.

Delay, C, Nijat I & Djordjevic, MA, CEP genes regulate root and shoot development in response to environmental cues and are specific to seed plants, *Journal of Experimental Botany*.

Griffiths, K, Tan, J & O'Neill, HC, Investigation into the prevalence of a novel dendritic-like cell subset *in vivo*. *Journal of Cellular and Molecular Medicine*.

Hanna, E & Cardillo, M, Island mammal extinctions are determined by interactive effects of life history, island biogeography and mesopredator suppression, *Global Ecology and Biogeography*.

Heskel, MA, Bitterman, D, Atkin, OK, Mackay, LK, Rahimpour, A, Ma, JZ, Stefanovic, T, Tschärke, D et al, The development pathway for CD103⁺CD8⁺ tissue-resident memory T cells (TRM) of skin, *Nature Immunology*.

Hu, Y-Y, Zhang, Y-L, Yi, X-P, Chow, WS et al, The relative contribution of non-foliar organs of cotton to yield and related physiological characteristics under water deficit, *Journal of Integrative Agriculture*.

Huasco, WH, Girardin, CAJ, Doughty, CE, Meir, P et al, Seasonal production, allocation and cycling of carbon in two mid-elevation tropical montane forest plots in the Peruvian Andes, *Plant Ecology and Diversity*.

Hueber, SD, Rauch, R, Djordjevic, MA, Weiller, GF, Frickey T, et al, Analysis of central Hox protein types across bilaterian clades: On the diversification of central Hox proteins from an Antennapedia/Hox7-like protein, *Developmental Biology*.

Jennions, MD & Kokko, H, 'Mate choice' in J Losos (ed), *Oxford bibliographies in evolutionary biology*. Oxford University Press, New York.

Kerr, P, Rogers, M, Fitch, A, DePasse, J, Tschärke D et al, Genome scale evolution of myxoma virus (MYXV) reveals host-pathogen adaptation and rapid geographic spread, *Journal of Virology*.

Kirk, K, & Lehane, AL, Membrane transport in the malaria parasite and its host erythrocyte, *Biochemical Journal*.

Kokko, H, Klug, H, & Jennions, MD, 'Mating systems', in DM Shuker & LW Simmons, (eds), *The evolution of insect mating systems*, Oxford University Press, Oxford.

Lanfear, R, Eyre-Walker, A & Kokko, H, Population size and the rate of evolution, *Trends in Ecology & Evolution*.

Mallela, J, Lewis, S & Croke, B, Coral skeletons provide historical evidence of phosphorus runoff on the Great Barrier Reef, *PLoS ONE*.

Meir, P, Mencuccini, M, Williams, M & Magnani, F, Forest, instruments and ideas. *Plant Ecology and Diversity*.

Mohd-Radzman, NA, Djordjevic, MA & Imin, N, Nitrogen modulation of legume root architecture signaling pathways involves phytohormones and small regulatory molecules, *Frontiers in Plant Science*.

Pascovici, D, Gardiner, D, Song, X, Solomon P, et al, Coverage and consistency: Bioinformatics aspects of the analysis of multi-run iTRAQ experiments of wheat leaves, *Journal of Proteome Research*.

Poorter, H, Lambers, H & Evans, JR, Trait correlation networks: a whole-plant perspective on the recently criticised leaf economic spectrum, *New Phytologist*.

Roche, DG, Jennions, MD, Binning, SA, Fees will hurt public data archives, *Nature*.

Roche, DG, Taylor, MK, Binning, SA, Johansen, JL, Steffensen, JF, Domenici, P, Unsteady water flow affects swimming performance in a labriform fish (*Cymatogaster aggregata*), *Journal of Experimental Biology*.

Rowland, L, Hill, T, Stahl, C, Meir, P et al, Evidence for strong seasonality in the carbon storage and carbon use efficiency of an Amazonian forest, *Global Change Biology*.

Rowland, L, Malhi, Y, Silva-Espejo, JE, Meir, P et al, The sensitivity of wood production to seasonal and interannual variations in climate in a lowland Amazonian rainforest, *Oecologia*.

Sage TL, Busch FA, Johnson D, et al, Initial events in the evolution of C₄ photosynthesis in C₃ species of *Flaveria* (Asteraceae), *Plant Physiology*.

Turnbull, MH & Griffin KL, Seasonality of foliar respiration in two dominant plant species from the arctic tundra: response to long-term warming and short-term temperature variability, *Functional Plant Biology*.

Ve, T, Williams, SJ, Catanzariti, A-M, Rafiqi, M, Hardham, AR, Jones, DA et al, Structures of the flax-rust effector AvrM reveal insights into the molecular basis of plant-cell entry and effector-triggered immunity, *Proceedings of the National Academy of Sciences USA*.