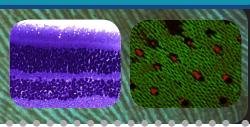
RESEARCH SCHOOL OF BIOLOGY



NEWSLETTER



ISSUE 26 | 31 JANUARY 2011

NEWS

CONGRATULATIONS

Penny Olsen, a long-standing Visiting Fellow in Evolution, Ecology and Genetics has been awarded an Order of Australia "for service to the conservation sciences as an author and researcher, and through the study and documentation of Australian bird species and their history".

Chris Fulton, EEG, has been awarded the 2011 Yulgilbar Fellowship at Lizard Island (worth \$11K) to support his research on climatic forcing of seaweed patch dynamics on the Great Barrier Reef, and Sandra Binning (PhD student, EEG) has won the 2011 lan Potter Doctoral Fellowship at Lizard Island (\$16K) to fund her research on the phenotypic plasticity of swimming in reef fish.

2010 Honours students, Rosalind Attenborough, Tom Bennett, Kai Xun Chan, Alvin Pratama and Helen Rickards were awarded University Medals at the December graduation ceremony.

A number of papers from RSB staff and students have featured in the media over the summer. These include: a paper from Stefan Bröer (BSB) and colleagues on a gene linking kidney function and obsessive compulsive disorder; a paper from Wiebke Ebeling, Ricardo Natali and Jan Hemmi, EEG on trichromatic vision in marsupials; Britta Winterberg, PS, and colleagues, for her recent

paper in *Science* on <u>pathogenic</u> <u>fungi of maize</u>, and a paper from Naomi Langmore and colleagues, EEG, for their work on the <u>mimicry</u> <u>by cuckoo chicks of the chicks of their hosts.</u>

WELCOME & NEW APPOINTMENTS
Welcome to the 2011 Honours
cohort, who start this week.

Dr Marconi Barbosa from NICTA is working with Andrew James and Ted Maddess on methods for understanding visual processing. Marconi's background is in physics, but he has been working in areas related to Machine Learning and classifier models.

Professors Marty Leonard and Andy Horn are on sabbatical from the Department of Biology, Dalhousie University, Canada. They will be based with Rob Magrath, EEG, until August 2011. They have both worked on vertebrate bioacoustics and conservation biology. Marty is currently Chair of the Committee on the Status of Endangered Wildlife in Canada, and Andy is the American editor of Bioacoustics.

The Zeil lab has had a big influx of visitors. Dr. Wolfgang Stürzl, University of Bielfeld and Elmar Mair, Technical University Munich, are visiting the lab to develop high-resolution 3D models of natural environments. Prof. Willi Ribi, University of Liechtenstein has joined Ajay Narendra and

Jochen as a Visiting Fellow to work on the functional anatomy of ocelli in honeybees and ants, and Katherine Gill, a Masters Student from Melbourne University will join the lab as an Intern to work on ant vision and navigation.

Piyankarie Jayatilaka has started her PhD on Vision, Navigation & Foraging Careers in Jack Jumper

Ants, working with Ajay, Jochen

and Jan Hemmi.

Lipotek, an ANU spin-off company that had its origins in work done in JCSMR and BaMBi, is establishing a small lab in the Robertson building (room216/218, formerly occupied by the Arkell lab). The staff to be based here are lnes Atmosukarto (CEO), Neil White (General Manager), Katharine Gosling, Jason Price, Torsten Juelich, David

Brett Lidbury, a 'Medical Advances Without Animals' Fellow and Associate Professor in Alternatives to Animals in Research, will be based in the Robertson Building until the end of this year when he will transfer to JCSMR.

Mann, and Jenni Milward.

Alexander Schmidt-Lebuhn, has joined the Crisp lab and will lecture in the Australian Plant Diversity course.

Will Feeney has arrived from JCU to start a PhD with Naomi Langmore, EEG, investigating coevolutionary interactions between cuckoos and fairy-wrens.

FAREWELL

Lindsay Popple, an ARC research associate with the Crisp lab, EEG, is leaving on February 24 to take up an environmental consulting job in Brisbane.

Matt Phillips, a postdoc with the Bromham lab, EEG, left in November to take up a position in Brisbane.

Eric Yip, PhD student with the Rowell lab, EEG, completed his work on spiders and returned to Cornell University.

STUDENT THESES AND AWARDS

Sam Reid, Zeil lab, EEG, has submitted his PhD thesis on "Life in the dark: Vision and navigation in a nocturnal bull ant."

David Stephenson, Allison lab, BSB, has submitted his PhD thesis entitled "Microbial ecology of *Lactobacillus* strains in the chicken gastrointestinal tract: identification of persistent strains for use as live vectors".

Simon Cobbold, Kirk lab, BSB, has submitted his PhD thesis "Amino acid transport in the malaria parasite, *Plasmodium falciparum*". Simon will be commencing a postdoc at Princeton in April/May.

Deborah Segal, Honours 2010, cosupervised by Adrienne Nicrota and Gemma Hoyle, PS, won the best inaugural talk at the Ecological Society of Australia meeting in December for her talk on alpine seed ecology.

GRANTS AND FELLOWSHIPS

Thomas Lenné, from Marilyn Ball's lab, PS, and Taavi Hunt (RMIT) "Localisation of trehalose in oriented DOPC bilayers by neutron diffraction", Access to Major Research Facilities Program ANSTO grant. This project seeks to understand fundamental cryo-protective mechanisms whereby sugars protect against deleterious membrane phase transitions. \$8K.

SPECIAL JOURNAL ISSUE

John Evans and Suzanne von Caemmerer, PS, have edited a Focus issue on Enhancing Photosynthesis in the January Plant Physiology Journal.

NOTICES

The 'Coopers and Cladistics' discussion group on systematics and evolution has run continuously since the mid 1980s. For the last three years, it has been organised by Richard Carter, who has just left to take up a postdoctoral position in

Zurich. Now, the founder of the group, Peter Cranston, pscranston@gmail.com, has returned to take up the reins. All are welcome to join - send an email to Pete if you want to be added to the mailing list.

This newsletter is distributed fortnightly by email and hard-copy, and is archived at http://biology.anu.edu.au/Newsletter. Please contact Sharyn.wragg to submit material for future issues.

Editing: Kiaran Kirk and Sharyn Wragg. Design & layout: Sharyn Wragg. Banner image: Wiebke Ebeling, wallaby choroid. Inset: Wallaby retina, dunnart retina.

PAPERS ACCEPTED

Al Nadaf S., Waters, P.D., Koina, E., Deakin, J.E., Jordan, K.S. and Graves, J.A. Activity map of the tammar X chromosome shows that marsupial X inactivation is incomplete and escape is stochastic *Genome Biology*.

Booksmythe, I., Jennions M.D., Backwell, P.R.Y. Male fiddler crabs prefer conspecific females but court indiscriminately. Animal Behaviour.

Bromham, L. The genome as a life history character: why rate of molecular evolution varies between mammal species. *Philosophical Transactions of the Royal Society*

Cardillo, M. Phylogenetic structure of mammal assemblages at large geographic scales: linking phylogenetic community ecology with macroecology. Philosophical Transactions of the Royal Society, London, series B.

Crisp, M. D., G. E. Burrows, L. G. Cook, A. H. Thornhill, and D. M. J. S. Bowman. Flammable biomes dominated by eucalypts originated at the Cretaceous–Palaeogene boundary. *Nature Communications*.

Davidson, A., Nicotra, A., and Jennions, M. Do invasive species show higher phenotypic plasticity than native species and, if so, is it adaptive? A meta-analysis. *Ecology Letters*.

Ebeling, W., Natoli, R.C., Hemmi, J.M. Diversity of colour vision: not all Australian marsupials are trichromatic PLoS One.

Fallow, P.M., Gardner, J.L. and Magrath, R.D. Sound familiar? Acoustic similarity provokes responses to unfamiliar heterospecific alarm calls. *Behavioral Ecology*

Haff, T.M. and Magrath, R.D. Calling at a cost: elevated nestling calling attracts predators to active nests. Biology Letters.

Hetherington, S., C. Gally, J.-A. Fritz, J. Polanowska, J. Reboul, Y. Schwab, H. Zahreddine, C. Behm and M. Labouesse. PAT-12, a potential antinematode target, is a novel spectraplakin partner essential for *C. elegans* hemidesmosome integrity and embryonic morphogenesis." *Developmental Biology.*

Jennions, M.D. and Mengersen K. Meta-analysis. In: Hastings A & Gross L (Eds) Sourcebook of Theoretical Ecology. University of California Press.

Jennions, M.D., Lortie, C., and Koricheva, J. Meta-analysis for evaluation of controversies and theory. *In*: J. Koricheva, J. Gurevitch, K. Mengersen (Eds) Handbook of Meta-analysis in Ecology and Evolution, Princeton University Press, Princeton

Jiang, C.-D., Wang, X., Gao, H.-Y., Shi, L. and Chow, W. S. Systemic Regulation of Leaf Anatomical Structure, Photosynthetic Performance and Highlight Tolerance in Sorghum. *Plant Physiology.*

Joseph, L., Zeriga, T. Adcock, G. Langmore, N.E. Phylogeography of the little bronze-cuckoo (Chalcites minutillus) in Australia's monsoon tropics. Emu.

Kelly, C.D. and Jennions, M.D. Sexual selection, sperm quality & sperm quantity: meta-analyses of strategic ejaculation. *Biological Reviews of the Cambridge Philosophical Society.*

Kilner, R.M. and Langmore, N.E. Cuckoos versus hosts in insects and birds: adaptations, counter-adaptations and outcomes. Biological Reviews.

Kokko, H. Directions in modelling partial migration: how adaptation can cause a population decline and why the rules of territory acquisition matter.

Koricheva, J., Jennions, M.D., and Lau, J. Temporal changes in effect sizes: detection and causes, cumulative meta-analysis *In*: J. Koricheva, J. Gurevitch, K. Mengersen (Eds) *Handbook of Meta-analysis in Ecology and Evolution, Princeton University Press, Princeton*

Landstrom, M. T., Heinsohn, R., Langmore, N. E. Does clutch variability differ between populations of cuckoo hosts in relation to the rate of parasitism? *Animal Behaviour.*

Langmore, N. E., Stevens, M., Maurer, G., Heinsohn, R., Hall, M. L., Peters, A., Kilner, R. M. Visual mimicry of host nestlings by cuckoos. *Proceedings of the Royal Society: Biological Sciences*.

Milner, R.N.C., Jennions, M.D., Backwell, P.R.Y. Non-independent mate choice in a fiddler crab: a case of stimulus enhancement. *Behavioral Ecolology and Sociobiology*.

Natoli, R., Valter, K., Chrysostomou, V., Stone, J., Provis, J. Morphological, functional and gene expression analysis of the hyperoxic mouse retina. *Experimental Eye Research*.

Oguchi, R., Douwstra, P., Fujita, T., Chow, W. S. and Terashima, I. Intra-leaf gradients of photoinhibition induced by different color lights: Implications for the dual mechanisms of photoinhibition and for the application of conventional chlorophyll fluorometers. *New Phytologist*.

Oguchi, R., Terashima, I., Kou, J. and Chow, W. S. Operation of dual mechanisms that both lead to photoinactivation of Photosystem II in leaves by visible light. *Physiologia Plantarum*.

Patel, V.S., Ezaz, T., Deakin, J.E. and Graves, J.A. Globin gene structure in a reptile supports the transpositional model for amniote α - and β -globin gene evolution *Chromosome Research*.

Rankin, D.J., Dieckmann, U. and Kokko, H. Sexual conflict and the tragedy of the commons. American Naturalist.

Rutar, M., Natoli, R., Valter, K., Provis, J.M. Early focal expression of the chemokine Ccl2 by Müller cells during exposure to damage-inducing bright continuous light. *Invest Ophthalmol Vision Science*.

Sun, F., Roderick, M. L., Lim, W. H., and Farquhar G. D. Hydro-climatic projections for the Murray Darling Basin based on an ensemble derived from IPCC AR4 climate models. *Water Resources Research*.

Taylor, R.W. Australasian ants of the subfamily Heteroponerinae (Hymenoptera: Formicidae): (1) General introduction and review of the *Heteroponera leae* (WHEELER 1923) species–group, with descriptions of two new species. *Myrmecological News* (Ross H. Crozier Memorial Volume).

van de Pol, M. and Cockburn, A. Identifying the critical climatic time-window that affects trait expression. The American Naturalist.

Yamori, W., Takahashi, S., Makino, A., Price, G.D., Badger, M.R., and von Caemmerer S. The roles of ATP synthase and the cytochrome b6/fcomplexes in limiting chloroplast electron transport and determining photosynthetic capacity. *Plant Physiology*.