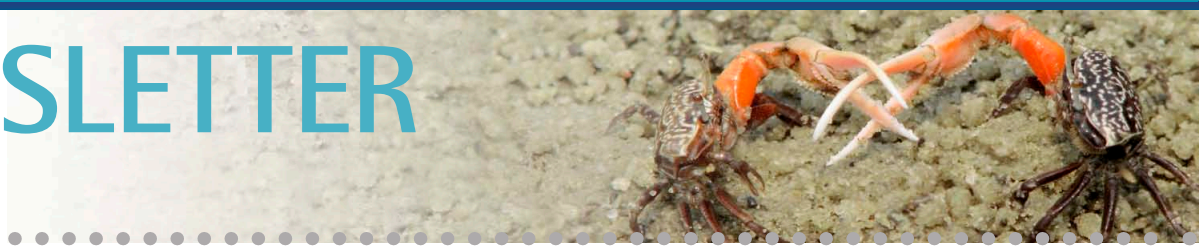
RESEARCH SCHOOL OF BIOLOGY

THE AUSTRALIAN NATIONAL UNIVERSITY

NEWSLETTER



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NEWS

BIOLOGY TEACHING AND LEARNING

A meeting with lab leaders was held on 8 April to discuss the goals and process of the biology curriculum review. In addition, Susan Howitt discussed the different types of research projects undergraduate students can do, Adrienne Nicotra described the research-directed innovations she and a group of academics from RSB have introduced into one of our second year courses on plant science, and Dave Rowell talked about what is involved in teaching. All of these presentations are now accessible on Intranet RSB Noticeboard, 'RSB Lab Leaders meeting on biology T&L, 8 April 2010'.

SUPER SCIENCE FELLOWSHIPS SUCCESS

RSB researchers were successful in the recently announced scheme, receiving over $600K to fund two postdoctoral appointments over a three year period. The researchers involved are **Murray Badger, Susanne von Caemmerer, Barry Pogson** and **Dean Price**, PS, together with Chris Goodnow from the JCSMR.

The Super Science Fellowship scheme was designed to enhance the research outcomes for both NCRIS Funded Research Facilities and Centres of Excellence, and to train early career researchers. The project proposed by the group involves interactions between the Australian Phenomics Facility (mice), The Australian Plant Phenomics Facility (plants) and the ARC Centre of Excellence in Plant Energy Biology. The work will entail harnessing the power of next-generation DNA sequencing techniques to speed up analysis of gene function in both plants and animals. The study capitalises on the co-location of Plant and Mouse Phenomics facilities at ANU and will contribute to an improved understanding of fundamental aspects of medicine such as obesity, immunity and cancer, and aspects of plant biology including photosynthetic energy metabolism, vitamin biosynthesis and drought tolerance.

EQUIPMENT GRANTS

In the ANU Major Equipment Grant Scheme:

Peter Solomon, John Rathjen, David Jones, Adrienne Hardham and **Ulrike Mathesius,** PS, were awarded $80K for the purchase of a new AKTA FPLC protein purification system. This will be available for use by all laboratories in RSB.

Graham Farquhar, Susanne von Caemmerer, John Evans, Marilyn Ball, Hilary Stuart-Williams, Chin Wong, PS, and University of Sydney colleagues Mark Adams, Claudia Keitel and Charles Warren were awarded $90K for the purchase of a new Picarro device for rapid laser-based measurement of water isotopologues. The device should be delivered in four months and please see Hilary if you are interested in making such measurements.

Owen Atkin, Marilyn Ball, John Evans, Ulrike Mathesius (PS), **Bill Foley, Adrienne Nicotra, Paul Cooper** (EEG), and partners from the Fenner School (Richard Greene, David Lindenmayer, John Field, Chris McElhinny) were awarded $100K for the purchase of an automated flow injection ion analysis system. This system will be based in the Forestry Building, and be available to all ANU students and staff.

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NOTICES

PLANT BIOLOGY SEMINAR SERIES

Wednesday 28 April, 1pm
Plant Industry Lecture Theatre, CSIRO.
FAS-containing Arabino-galactan proteins specialised for plant stem biomechanics.
Dr Colleen MacMillan, CSIRO, PI.

HAPPY HOUR

Friday 30 April, 5pm
EEG tearoom, Banks Bldg 41
Free snacks and cheap beers.
All welcome.

This newsletter is distributed fortnightly by email and hard-copy, and is archived at http://biology.anu.edu.au/Newsletter.

Contact Diane Whitehead to be added to the mailing list, and to submit material for future issues.

CONGRATULATIONS

Sam Inverso, Visual Sciences, James Lab, BSB, was recently awarded the 2010 Burgmann College Medal. The award is given at commencement for outstanding leadership, academics, and service to the College. From 2005 to 2010 Sam was progressively a tutor, Senior Fellow, and finally Postgraduate Dean. Sam organised many academic seminars, made lots of pastoral care pancakes, tutored, and worked with the Principal and Undergraduate Deans to develop a successful undergrad/postgrad mentoring program.

Rebecca Hinton, O'Neill Lab, BSB, submitted her PhD thesis entitled *In vitro haematopoiesis and dendritic cell development* on 15 April. Rebecca will be employed in O'Neill Lab for a short period to prepare papers from her thesis for publication.

Richard Milner, PhD candidate in EEG, Backwell Lab, has been awarded a fourth grant this month. It is from the Sigma Xi Committee on Grants-in-Aid of Research, USA. His other awards are a Crustacean Society graduate fellowship for his work on fiddler crabs, a Student Research Grant by the Animal Behavior Society, USA, and a Linnean Society of New South Wales research grant.

Tegan Dolstra commenced her PhD in BSB, Martin Lab, at the beginning of April and has made a fantastic start by winning 2nd prize ($350) for her entry in the ANU ResearchFest Research Note competition.

WELCOME

Justin Welbergen has joined the Magrath Lab, EEG, as a Visiting Fellow. Justin is a behavioural ecologist who has worked on the social behaviour of flying foxes, and behavioural coevolution of cuckoos and their hosts. Justin is also a Research Fellow in the Department of Zoology, and Fellow

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In the NHMRC Equipment Grant Scheme:

Lisa Alleva, BSB, was awarded $8.45K for the purchase an under-bench -80°C freezer to store quarantined virus stocks in the Wes Whitten animal facility quarantine room.

Kiaran Kirk, Kevin Saliba, Rowena Martin, Stefan Bröer, BSB were awarded $29.9K for an HPLC Radioactivity Monitor for use in metabolic labelling experiments.

PAPERS HIGHLIGHTED

A recent publication from Ryszard Maleszka's group, EEG, entitled *Epigenetic regulation of the honey bee transcriptome: unravelling the nature of methylated genes* received a rare score of 9 (Exceptional) in a Faculty of 1000 review. This paper is available at the BMC Genomics web site (Foret, S., Kucharski, R., Pittelkow, Y., Lockett, G.A., Maleszka, R., 2009, *BMC Genomics*. 10, 472).

A new paper by **Tanya Detto, Michael Jennions** and **Pat Backwell,** EEG, on the rules of coalition formation in fiddler crabs featured as a Research Highlight in the 25 March issue of *Nature*. And Hanna Kokko and Michael Jennions have a new News and Views article in *Nature*.

African Fiddler Crab, *Uca annulipes*. Image by Tanya Detto

AWARD WINNING THESIS

Centre honours student wins the Dean's Prize for Best Thesis of 2009 in the ANU College of Medicine, Biology and Environment.

Peter Crisp, PS, Pogson Lab, has been awarded the College of Medicine, Biology and Environment Prize for most outstanding honours thesis in the College in 2009. The prize is sponsored by the India-Australia Association and is awarded each year to the student who, in that year, achieved the most outstanding Honours result, as determined by the Dean of Science.

Peter's thesis described his investigation of the consequences of mutation of the Arabidopsis *SAL1* gene, revealing a novel biochemical pathway that appears to regulate a range of stress responses, for example high-light genev induction. Together with his supervisor Gonzalo Estavillo and fellow PhD student Nok Pornsiriwong, the 'SAL1 research team' has found that this pathway is regulated from the chloroplast. Peter attributes his award to "hard work, a healthy dose of good fortune, fantastic supervisors and the terrific resources and opportunities that the Centre has created". Peter is now working towards his PhD on the same topic in the Pogson lab.

of Darwin College, at the University of Cambridge.

Brani Igic has joined the Magrath Lab, EEG, as a PhD student, after moving from the University of Auckland. He will be studying vocal behaviour and mimicry in thornbills.

Farid Rahimi has joined the Bröer group, BSB, as a Postdoc to work on protein-protein interactions of glutamine transporters. Farid is from Afghanistan and did his BSc and Honours at UNSW. He received a PhD in pathology also from UNSW in 2004 and subsequently went for a Postdoc to UCLA.

Ying-ying Hey has begun her PhD in BSB, O'Neill Lab. Ying completed a successful honours year under the supervision of Helen O'Neill and won an international scholarship to undertake her PhD. She is working on the characterisation and function of a novel antigen presenting cell type in spleen.

Sawang Petvises recently joined BSB, O'Neill Lab, as an international PhD student supported by the Thai government. He currently holds an appointment as Lecturer, Thammasat University, Thailand. His project involves characterisation of myelopoiesis specific to spleen.

PAPERS ACCEPTED

Biffin, E., Lucas, E., Craven, L., Ribeiro Da Costa, I., Harrington, M., Crisp, M.D. Evolution of exceptional species richness amongst lineages of fleshy-fruited Myrtaceae. *Annals of Botany*.

Drayton, J.M., Milner, R.N.C., Hunt, J. Jennions, M.D. Inbreeding and advertisement calling in the cricket *Teleogryllus commodus*: laboratory and field experiments. *Evolution*.

Henry, R.I., Cobbold, S.A., Allen, R.J.W., Khan, A., Hayward, R., Lehane, A.M., Bray, P.G., Howitt, S.M., Biagini, G.A., Saliba, K.J. and Kirk, K. An acid-loading chloride transport pathway in the intraerythrocytic malaria parasite, *Plasmodium falciparum*. *J. Biol. Chem.*

Hoskin, C.J., Higgie, M. Speciation via species interactions: the divergence of mating traits within species. *Ecology Letters*.

Kokko, H., Jennions, M.D. Ways to raise tadpoles. *Nature*. doi:10.1038/464990b

Kozulin, P., Natoli , R.C., Bumsted O'Brien, K.M., Madigan, M.C., Provis, J.M. The cellular expression of anti-angiogenic factors in fetal primate macula. *Journal Investigative Ophthalmology & Visual Science*.

Long, B.,M., Tucker, L., Badger, M.R., Price, G.D Functional cyanobacterial beta-carboxysomes have an absolute requirement for both long and short forms of the CcmM protein. *Plant Phys*.

Magrath, R. D., Haff, T. M., Horn, A. G., Leonard, M. L. Calling in the face of danger? How predation risk affects acoustic communication by parent birds and their offspring. *Advances in the Study of Behaviour.*

Reef R., Ball, M.C., Feller, I.C., Lovelock, C.E Relationships among RNA:DNA ratio, growth and elemental stoichiometry in mangrove trees. *Functional Ecology.*

Robinson, A.L., Trengove, R.D., Boss, P.K., Solomon, P.S., Heymann, H. The effect of simulated shipping conditions on sensory attributes and volatile composition of white and red wines. *American Journal of Enology and Viticulture*.

Summers, R.L., Martin, R.E. Functional characteristics of the malaria parasite's 'chloroquine resistance transporter': implications for chemotherapy. *Virulence*.

Vanslambrouck, J. M., Bröer, A., Thavyogarajah, T., Holst, J., Bailey, C.G., Bröer, S., Rasko, J. E. Renal imino acid and glycine transport system ontogeny and involvement in developmental iminoglycinuria. *Biochem J.*

Editing: Kiaran Kirk, Diane Whitehead & Sharyn Wragg. Design & layout: Sharyn Wragg. Banner: Tanya Detto. African Fiddler Crab, *Uca annulipes*.