



NEWS

New RSB Director and Deputy Director



Allen Rodrigo takes up the position of Director on 1 July. The ANU Vice-Chancellor, Professor Ian Young AO, said Professor Rodrigo is a distinguished scientist who would add to the research strengths of the University and RSB.



Stefan Bröer will take up the role of Deputy Director.

Awards

Gabrielle Lockett (EEG) won 2nd prize in the poster presentations, at The Australian Society for Medical Research (ASMR) New Investigator Forum (NIF) conference held at JCSMR on 2 June.

Plenary lecture

Later this month, Rod Peakall (EEG) will be presenting a plenary at the International Society for Chemical Ecology in Sweden, on the Sex pheromone chemistry of thynnine wasps and the evolution of its exploitation by sexually deceptive orchids.

IN THE MEDIA

A paper by Branislav Igetic, Jessica McLachlan, Robert Magrath (EEG) and colleague has been featured widely in online news articles and interviews. The study found that brown thornbills mimic the 'hawk' warning call of a variety of birds to scare off predators threatening its nest. This deception is outlined in an ANU news article, and in a short video entitled 'Birds cry wolf to scare predators' (see main image).

A paper by William Feeney, Naomi Langmore (EEG) and colleagues has been featured in ANU and online media.



The study found that a cuckoo finch in Zambia (pictured above, left) has evolved to be almost indistinguishable from a harmless weaver bird (pictured above, right), a mimicry that helps them to evade detection



The Brown thornbill mimics the 'hawk' alarm calls of other species to protect its nestlings from predatory birds. Photo: Jessica McLachlan See under 'IN THE MEDIA'.

and lay eggs in the nest of a host bird. (Photo: Claire Spottiswoode.)

Kieran Kirk, Adelaide Dennis (BSB) and malaria researchers in other ANU Research Schools have been featured in an ANU article entitled 'Beating malaria: All guns to bear'.

PHDs SUBMITTED

Hamish Webb (Foley Group, EEG) 'The genetics of essential oil yield in Melaleuca alternifolia and Eucalyptus loxophleba'.

Peter Crisp (Pogson Group, PS) 'Balancing the messages: RNA dynamics during stress-signaling, recovery and memory in plants'.

PHDs AWARDED

Brian Garms (Rowell Group, EEG), 'Native insects as guides for understanding potential impacts of exotic species'.

Yvonne Gonzalez-Cendales (Jones Group, PS), 'Isolation and functional characterisation of the tomato I-7 gene for Fusarium wilt resistance'.

Richa Jakheta (Verma Group, BSB), 'Isolation and characterisation of Bacteriophages in 1a and 1c serotypes of Shigella flexneri'.

Vinson Tran (O'Neill Group, BSB), 'Molecular characterisations of niches for hematopoiesis in murine spleen'.

Hannah Windley (Foley Group, EEG), 'Nutritional ecology of common brushtail possums in New Zealand'.

NEW APPOINTMENTS

Susan Howitt has been confirmed as the Head of BSB and will assume the role once approved by HR.

Marcin Adamski will be employed for three years to improve bioinformatics support in the School. Marcin will be based in RSB and in the Genome Discovery Unit (GDU). His position is funded by the Office of the Vice Chancellor.

David Tscharke (BSB) will take up the position of Associate Director Education in JCSMR. David will assume the role from the beginning of July, but will maintain his research laboratory in RSB until the end of the year.

Melodie Norris will be employed for one year as an outreach and communication officer for RSB. The position is funded by start-up funds of Allen Rodrigo.

Trent Orchard has taken up the new fixed term roles of 'RSB Building Project Manager' to ensure smooth progression of the RN Robertson Building Refurbishment project.

Shannon McMullen has been seconded from the RSB Animal Services Team into a combination of the RSB Building Coordinator (Trent Orchard) and RSB Operations Officer (Jeanette Cashin) positions for an initial period of 12 months.

Sara Chica Latorre will be employed for a year as a technical assistant on the project 'Top-Down Rehydration in Mangroves' in Marilyn Ball's Group (PS).

Group Leader profile: Rob Magrath (EEG)

Group research focus



We are interested in avian behavioural ecology, particularly acoustic communication. We use sound analysis and field playback experiments to test ideas about signal design and function, and have special interests in communication about danger, interspecific eavesdropping, parent-offspring communication, duetting and vocal mimicry.

What's your current main research challenge?

Vertebrates live in an acoustically complex world, with sounds providing a rich source of information. We are fascinated by this acoustic web of information, and so aim to place communication in a broad ecological context. We study how individuals acquire and use information by eavesdropping on the alarm signals of other species or the acoustic signatures of predators. A bird flees to another species communicating about danger; a vocal mimic exploits a predator's own awareness of sounds of danger; a young nestling goes silent to the distinctive footfall of a predator. How do individuals recognize what sounds are relevant, and how do they use this information?

What do you enjoy about teaching?

I teach at all levels, from first year to graduate students, so there are different pleasures and challenges – although it's always fun to share an enthusiasm for biology and to interact with students. In first year, I value class participation; it's great to get insightful and challenging questions. In later undergraduate years, I focus on recent research and how we test hypotheses, and it's rewarding when students suggest ideas and question evidence. For Honours and PhD students, the pleasure is in guiding students through the vagaries of research and the process of communicating their findings.

This newsletter is archived at biology.anu.edu.au/news-events/newsletter.
Layout: Sharyn Wragg
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Benjamin Schwessinger is a new independent research fellow in Plant Science. Benjamin arrived from the University California Davis and did his PhD at the Sainsbury Laboratory in Norwich, UK. He will work with John Rathjen (PS) on the evolution of highly virulent wheat stripe rust races in Australia. In order to do, so Benjamin obtained his own funding from Human Frontier Science Program and a DECRA. His move to ANU was also highlighted by *Naturejob* as #Scientistonthemove.

WELCOME

Associate Professor **Rafael Coopman** from the Universidad Austral de Chile is collaborating with **Marilyn Ball** (PS) on two major international eco-physiological projects. One project is an ongoing study of responses of sub-Antarctic alpine vegetation to climate change, and the other is a new ARC-funded Discovery project to study top-down rehydration: the role of multiple water sources in maintaining mangrove productivity along gradients in salinity and aridity.

Tom Semple will join the Peakall Group (EEG) as a PhD student to work on the 'Phylogeny and evolution of Thynnine wasps'. Thynnines are a hyperdiverse group of Australasian and South American wasps which have been poorly studied. They are also important specialist pollinators of orchids. Other aspects of the thynnine wasp biology are being investigated by **Alyssa Weinstein** who joined the Peakall Group as a PhD student in May. Alyssa will be working on the 'Chemical ecology and evolution of pollinator transitions in orchids', with thynnine pollinators a major (but not exclusive) focus.

Patrice Kurnath is visiting the Foley Group (EEG) from the University of Utah as a NSF East Asia and Pacific Summer Institutes Scholar.

FAREWELL

Jeanette Cashin, Wayne Genner and Charles Hocart are retiring on 3 July.

Jeanette Cashin (Operations) started her 28 year association with us pre BaMBi and BoZo in the Biochemistry Department (1976-79), then she returned to Zoology in 1987, moving



to Operations in 2010. A farewell morning tea is planned for Jeanette on July 3 in the Banks tearoom. Jeanette is now planning an extended overseas trip, and looks forward to more time with her hobbies and family.

Charles Hocart (Manager, MSF) first came to RSBS as a PhD student in 1981, working on cytokinin plant hormones. After four years overseas as a post-doc, he returned to RSBS as a National Research Fellow, where he worked as researcher, mass spectrometry officer and student supervisor. He has managed the RSB Mass Spectrometry Facility since its inception in 1996 (it was officially opened in 2005), while continuing to publish his research and carry out duties as a chemical and radiation safety officer. Charles' greatest satisfaction while at RSB was seeing students develop as researchers, and he hopes in retirement to return as a visitor.



Wayne Genner (Manager, Combined Workshop), started with RSBS in 1996 as the Electronics Workshop Manager. Prior to this, Wayne spent 20 years in the Royal Australian Air Force (RAAF). During nearly two decades at



RSB(S), Wayne has seen mergers and relocations to the Workshop, and has developed and mentored many junior staff who have gone on to bigger and brighter roles. One of Wayne's greatest accomplishments was the design and implementation of the on call alarm system connecting growth cabinets, fridges and freezers in building 46 and adjoining facilities. Wayne was one of very few volunteers responding to the call outs in the early days of the system. Wayne has played a significant role in the general running of building 46, the CEF, and greenhouses, earning a reputation as 'the quiet achiever'.

Rod Eyles (Djordjevic Group, PS), having submitted his PhD thesis, is leaving to take up a position at the International Institute for Tropical Agriculture (IITA) based in Kenya. Rod will work in virus-induced gene silencing (VIGS) in cassava, an African staple crop which is being ravaged by Cassava Brown Streak Disease.

Yit-Heng Chooi (Heng) has been a dynamic DECRA Fellow in the Solomon Group (PS) for just over two years, publishing multiple papers and supervising students. Heng has been a great influence in the lab, and leaves us to take up a new continuing position at the University of Western Australia.

Brendan O'Leary will leave the Atkin Group (PS) on June 29 to take up a DECRA Fellowship at the UWA node of the ARC CoE in Plant Energy Biology.

PAPERS ACCEPTED

Bromham L, 'Evolutionary change: nothing stands still in biology' in *Change! Combining analytic approaches with street wisdom*, ed. G Bammer

Clark, IA, & Vissel, B, Amyloid β : one of three danger-associated molecules that are secondary inducers of the proinflammatory cytokines that mediate Alzheimer's disease, *British Journal of Pharmacology*

Clark, IA, & Vissel, B, A neurologist's guide to TNF biology, and to the principles behind the therapeutic removal of excess TNF in disease, *Neuronal Plasticity*

Everson, TM, Lyons, G, Zhang, H, Lockett, GA, *et al.*, DNA methylation loci associated with atopy and high serum IgE: A genome-wide application of recursive random forest feature selection, *Genome Medicine*

Feeney, WE, Trosckianko, J, Langmore, NE, Spottiswoode, CN, Evidence for aggressive mimicry in an adult brood parasitic bird, and generalised defences in its host, *Proceedings of the Royal Society: Biological Sciences*

Gordon, DM, O'Brien, CL, & Pavli, P, *Escherichia coli* diversity in the lower intestinal tract of humans, *Environmental Microbiology Reports*

Henshaw, J, Kokko, H, & Jennions, MD, Direct reciprocity stabilises simultaneous hermaphroditism at high mating rates: a model of sex allocation with egg trading and hermaphrodites, *Evolution*

Holman, L, Head, ML, Lanfear, R, Jennions, MD, Evidence of experimental bias in the life sciences: why we need blind data recording, *PLoS Biology*

Magrath, RD, Haff, TM, McLachlan, JR & Iqic, B, Learning by wild birds to eavesdrop on heterospecific alarm calls, *Current Biology*

Medina, I, & Langmore, NE, The evolution of acceptance and tolerance in hosts of avian brood parasites, *Biological Reviews*

Medina, I, Langmore, NE, The costs of parasitism explain variation in egg rejection behaviour in brood parasite hosts, *Biology Letters*.

Morris, GP, Clark, IA, & Vissel, B, Inconsistencies and controversies

surrounding the amyloid hypothesis of Alzheimer's disease, *Acta Neuropathologica Communications*

O'Dea, RE, Vega-Trejo, R, Head, ML, & Jennions, MD, Maternal effects on offspring size and number in mosquitofish, *Gambusia holbrooki*, *Ecology & Evolution*

Li, W, Luo, J, Tian, X, Chow, WS, *et al.*, A new strategy for controlling invasive weeds: selecting valuable native plants to defeat them, *Scientific Reports*

Rolland, V, Bergstrom, DM, Lenné, T, Ball, MC. *et al.*, Easy come, easy go: capillary forces enable rapid refilling of embolized primary xylem vessels, *Plant Physiology*

Rollins, LA, Whitehead, MR, Woolnough, AP, Sinclair, R, & Sherwin, WB, No evidence of selection in the dopamine receptor D4 gene in invasive starling populations, *Current Zoology*

Schwessinger, B, & Rathjen, J, Changing SERKs and priorities during plant life, *Trends in Plant Science*

Pruitt, RN, Schwessinger, B, *et al.*, The rice immune receptor XA21 recognizes a tyrosine-sulfated protein from a Gram-negative bacterium, *Science Advances*

Semple, TL, Gullan, PJ, Hodgson, CJ, Hardy, NB, & Cook, LG, Systematic review of the Australian 'bush-coconut' genus *Cystococcus* (Hemiptera: Eriococcidae) uncovers a new species from Queensland, *Invertebrate Systematics*

Søndergaard, S, Aznauryan, M, Hastrup, E, Corry, B, *et al.*, Dynamics of fluorescent dyes attached to G-quadruplex DNA and the effect on FRET experiments, *ChemPhysChem*

Sun, Z-Y, Zhang, T-J, Su, J-Q, Chow, WS, *et al.*, A novel role of ethephon in controlling the noxious weed *Ipomoea cairica* (Linn.) Sweet, *Scientific Reports*

Walczewska-Szewc, K, Deplazes, E, & Corry, B, A comparison of the ability of enhanced sampling molecular dynamics methods to reproduce the behaviour of fluorescent labels on proteins, *Journal of Chemical Theory and Computation*

Way, DA, Holly, C, Bruhn, D, Ball, MC & Atkin, OK, Diurnal and seasonal variation in light and dark respiration in field-grown *Eucalyptus pauciflora*, *Tree Physiology*

Whitehead, MR, Linde, CL, & Peakall, R, Pollination by sexual deception promotes outcrossing and mate diversity in self-compatible clonal orchids, *Journal of Evolutionary Biology*

Zdenek, C, Heinsohn, RG, & Langmore, NE, Vocal complexity in the palm cockatoo (*Probosciger aterrimus*), *Bioacoustics*.