2017

THE UNIVERSITY OF WESTERN AUSTRALIA

Annual Research Report

SCHOOL OF BIOLOGICAL SCIENCES

ACKNOWLEDGEMENTS

This report was prepared by the School of Biological Sciences, University of Western Australia.

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HEAD OF SCHOOL MESSAGE

The new School of Biological Sciences (SBS) was formed at the end of 2016 after a University-wide re-structure that saw the merger of the previous Schools of Animal Biology and Plant Biology. This 2017 Annual Research Report provides a summary of the School's key research directions, progress and activities during its first year of operation. The School's vision is Biology without Borders, and our mission is to investigate the Earth's species and natural environments to ensure sustainable futures.

This collection of 2017 discipline reports demonstrates how our researchers are tackling challenging questions about our living planet. We are passionate about plants and animals and study how they live, work, reproduce, sense the world around them and communicate, survive in threatened environments, as well as provide clues to advance medical science and treatment. We study plants and animals in managed and natural environments including below and on the ground, in the air and in marine and fresh waters. We also study ways in which to best communicate our science to the public and external stakeholders. We place great emphasis on both field and laboratory-based studies.

The School places great value on its outstanding cohort of research and teaching academic staff who are highly committed to using cutting-edge science to deliver high quality research, innovative research-led teaching and far-reaching community engagement. Our mission is supported to an exceptionally high level by teams of professional staff. The School's research expertise is diverse, spanning five major disciplines: computational biology, evolutionary biology, conservation & ecology, neuroscience and science communication. Our academics comprise teaching and research staff, externally-funded research staff as well as a substantial number of adjunct staff who are engaged in the Schools' teaching, research and community engagement. Much of our core business is strongly supported by our excellent and highly productive partnerships with a wide range of industry and governmental organisations.

Collaboration and collegiality are central to the School's approach. The School hosted 23 visiting researchers in 2017 to share knowledge and expertise. We have 457 collaborations with academics in universities and research and industry organisations across the globe. Through these international collaborations, our School's strengths in fundamental and applied biology are being harnessed to address pressing issues of international concern.

Our scientific research is coupled to a clear commitment to training and knowledge exchange and our staff are regularly engaged with the media. Excellence in science also requires outstanding infrastructure. The School houses some excellent core facilities and we continue to work with the University to expand our facilities and build capacity. We also seek ways to use our existing facilities to develop novel methodologies to answer fundamental research questions.

Please enjoy discovering more about the School of Biological Sciences and our research as you read this report.

Professor Sarah Dunlop

Head: UWA School of Biological Sciences

Professor Sarah Dunlop
Head of School

ABOUT OUR SCHOOL

The School of Biological Sciences (SBS) is a large, research intensive school within the Faculty of Science at the University of Western Australia. The School is the product of the amalgamation of the School of Animal Biology and the School of Plant Biology in January 2017.

We have a total of 96 substantive staff positions (74 academic staff and 22 professional staff). Of the academic staff 33 are involved in teaching and research and 41 are research only staff. Of the professional staff, there are 11 professional research staff and 11 service delivery staff members (4 technical and 6 academic service staff).

The School generated research income of approximately $5,174,000 (of a total income of $20,032,105) in 2017 and had a HDR load of 109 PhD enrollments.

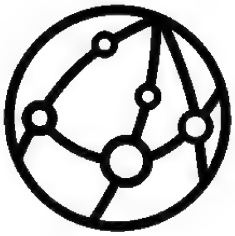
The school is housed in four main locations on the Crawley campus; the Zoology Building, the Botany and Biology Buildings, the Agriculture North building and the Curnow Building (Neuroscience). We also have staff located at CSIRO in Floreat, science communication staff at Myer Street and the Indian Ocean Marine Research Centre on Parkway.

PERFORMANCE IN 2017

Working with others in 2017

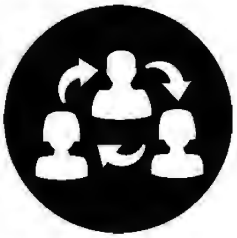
OUR COLLABORATIVE ACADEMIC PROJECTS

AU & WORLDWIDE



457

EXTERNAL COLLABORATIONS



182

INTERNAL COLLABORATIONS

People we've trained in our school this year

MASTERS COMPLETED

23

PhD's COMPLETED

27

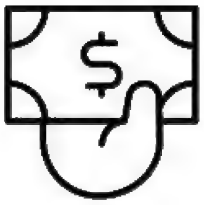
VISITING RESEARCHERS

23

Total income

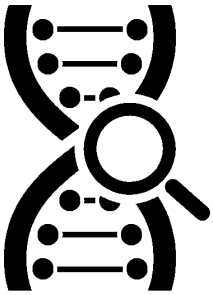
$20,032,105

Value of grants awarded in 2017



$5,173,702

RESEARCH THEMES

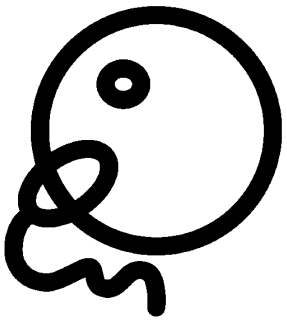


Computational Biology

Our research group addresses fundamental and applied questions in biology using methods and tools from mathematics, statistics and computer science. Our research develops and applies data-analytical and theoretical methods, mathematical modeling and computational simulation techniques to the study of biological, ecological and behavioral systems.

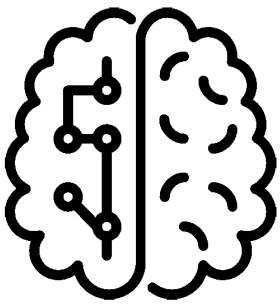
Ecology & Conservation

We research how animals and plants interact with other species and with their physical environment. This fundamental ecological understanding is required to conserve endangered species and protect their habitats with effective, evidence -based methods. Our research takes us to habitats from suburban backyards to deserts, and the depths of the ocean.



Evolutionary Biology

Our research explores evolutionary responses to selection at the phenotypic and genomic level, with the broad aim of discovering how organisms adapt to their changing environment. The Centre of Evolutionary Biology at SBS takes a multidisciplinary approach to explore selective processes acting on the morphological and life-history traits of whole organisms and their gametes. We have particular expertise in acoustic signalling, predator-prey interactions, visual ecology, sperm competition, chemical ecology and the genetic mapping of complex traits.



Neuroscience

By researching the nervous and sensory systems of animals we are discovering how animals detect light, chemicals, sound and other environmental cues, as well as finding ways to explain abnormal brain development and treat traumatic neural injury in humans. Our work extends from animal behaviour and neuroecology, via fundamental neuroscience, to clinical trials, and encompasses animals from insects and crabs , to mammals and sharks.

Science Communication

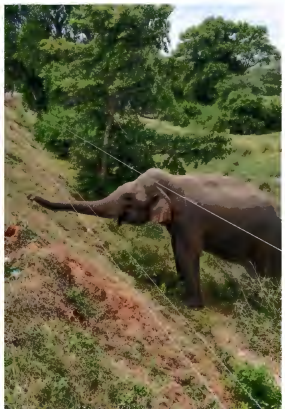
Researching how best to communicate complex scientific information and how to increase the impact of science engagement is the task of science communication experts. Our research in science communication considers the multitude of ways in which different community's engage with science. The work is multidisciplinary, drawing on methods from science, education, psychology, social science, media studies and communication studies.

BIOLOGY WITHOUT BORDERS

We Are Worldwide

As biologists, we are passionate about understanding how living organisms – microorganisms, fungi, plants and animals – grow, adapt, sense the world around them, communicate, reproduce and evolve. We study how species and ecosystems can be managed, conserved and restored. Our work also provides clues to advance food production, treatment of plant and animal diseases and medical science.

Our researchers tackle challenges in the laboratory and at field sites across the world (as shown in the diagram above), studying plants and animals in both natural and managed environments. We use techniques ranging from molecular and genetic analysis, to data collection from whole populations, communities and ecosystems, to big-data synthesis science. We are committed to the communication of science to our communities.



COMPUTATIONAL BIOLOGY

COMPUTATIONAL BIOLOGY

Academic Staff

Prof. Jacqui Batley

- Plant pathogen interactions
- Disease resistance
- Genetics and genomics of Brassica crops
- Population genomics
- Evolutionary genomics

Prof. Dave Edwards

- Genomics: structure, expression and variation
- Bioinformatics
- Evolution
- Crop improvement
- Climate change

Dr Michael Renton

- Ecological & agricultural modelling
- FSPM modelling
- Evolution of resistance to herbicide and pesticide
- Prediction & management of weeds, pests & diseases
- Statistical modelling & analysis

A/Prof Patrick Finnegan

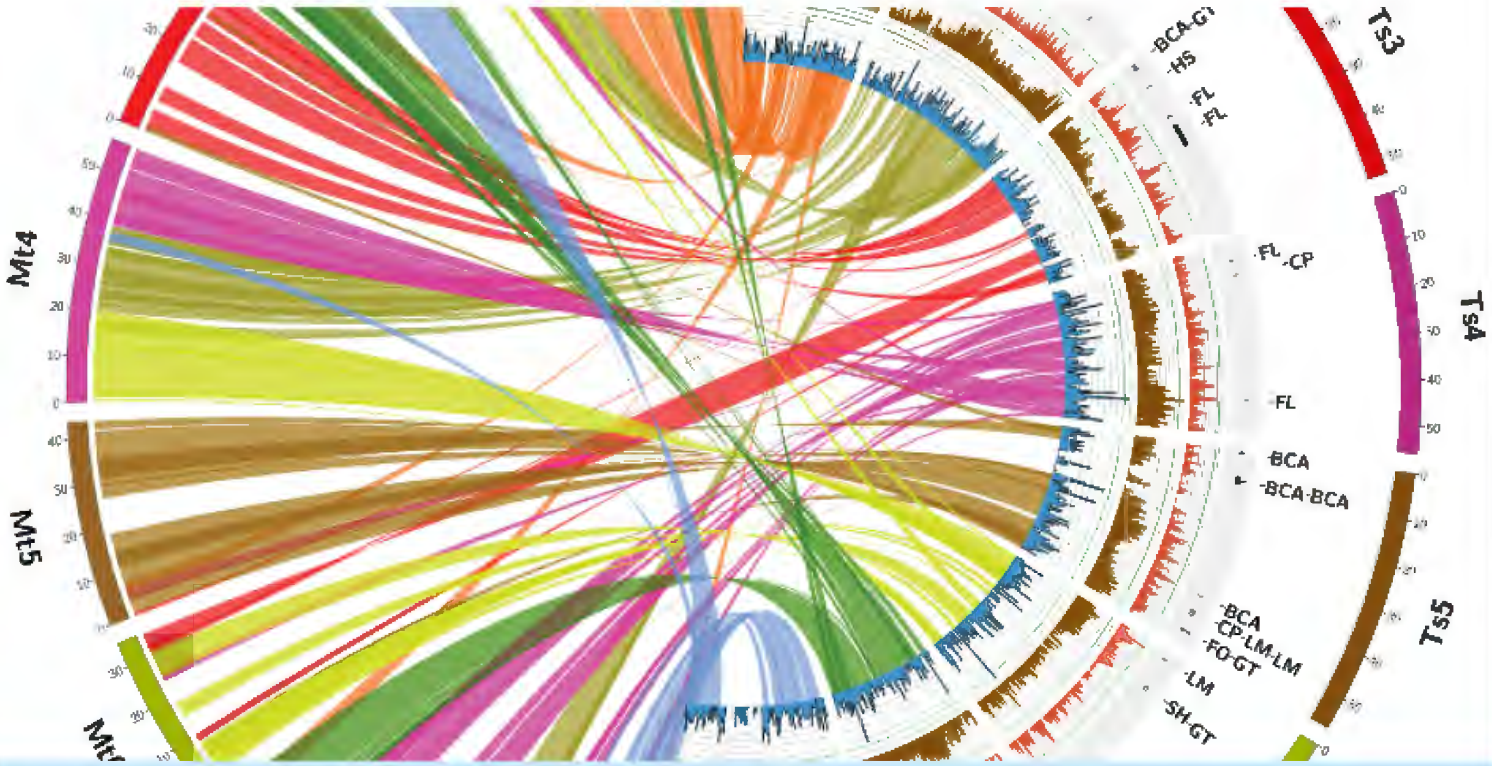
- Genetic manipulation of plants
- Phosphate transport
- Mitichondrial biogenesis & evolution
- Plant physiology
- Phosphate homeostasis

Dr Katarina Streit

- Functional-structural plant modelling (FSPM)
- Plant disease modelling
- Tree architectural modelling
- L-systems
- Light simulations
- Sensitivity analysis

Dr Philipp Bayer

- Plant genomics
- Plant pangenomics
- Computer-assisted breeding programs
- Brassica
- Wheat
- Legumes
- Seagrasses



COMPUTATIONAL BIOLOGY RESEARCH GROUPS

The Batley Laboratory

Professor Jacqueline Batley established the Batley lab when she moved to The University of Queensland in 2007. In August 2014 she moved to the University of Western Australia as an ARC Future Fellow. The lab consists of several full time researchers and PhD students. The research group focus on genetics and genomics for crop improvement, with emphasis on plant-pathogen interactions. We develop and apply breakthrough biotechnological advances for canola crop improvement, through identification of genomic regions controlling traits, which are being translated to commercial outcomes. These novel methods are leading to an increase in the yield of this important crop, and thus contributing to national exports and increasing global food security. Whilst much of the work is focussed on Brassicas we also apply these technologies to other species.

Applied Bioinformatics Group

The applied bioinformatics group was founded in 2007 at the University of Queensland and moved to the University of Western Australia in January 2015. Since this time, the group has established itself as a leading bioinformatics group in Australia. Our current research activities include the second generation sequencing of complex genomes and metagenomic populations, genome annotation, diversity analysis, trait association and data visualisation.

The group receives funding from the University of Western Australia, the Australian Research Council, the Grains Research and Development Corporation and several industry partners to undertake applied bioinformatics research in genetics and genomics.

The group is led by Professor David Edwards and consists of researchers with diverse backgrounds. We offer training in applied bioinformatics at all levels and publish widely in the fields of genomics, genetics and bioinformatics

2017 RESEARCH HIGHLIGHTS

2

PhD Completions

1

Masters Completions

6

Visiting Researchers

44

Publications

External Grants

3

$1.67 M

8

External Collaborations

4

Internal Collaborations

1

Awards & Recognition

POST GRADUATE RESEARCH STUDENTS

Ms Anna Cresswell
Coord Supervisor: Michael Renton
Disturbance dynamics in coral reef ecosystems

Mr Aria Dolatabadian
Coord Supervisor: Jacqui Batley
Copy Number Variation and Blackleg Resistance in Canola

Mr Fabian Inturrisi
Coord Supervisor: Jacqui Batley
Genome-wide analysis of NBS-LRR genes in Indian mustard (Brassica juncea) and prediction of candidate disease resistance genes

Mr Md. Aamir Waseem Khan
Coord Supervisor: Dave Edwards
Pangenome analysis in Cicer spp.provides insights into evolution of chickpea (Cicer arietinum)

Ms Seyedeh Derazmahalleh
Coord Supervisor: Dave Edwards
Exploring legume genome evolution and domestication using genomics and bioinformatics approaches

Ms Ting Xiang Neik
Coord Supervisor: Jacqui Batley
Identification of blackleg resistance gene in Brassica napus

Ms Fiamma Riviera
Coord Supervisor: Michael Renton
Testing ecological theory and informing restoration practice using temporal patterns in the floristics and functional traits of kwongan vegetation restored after mining

Ms Yueqi Zhang
Coord Supervisor: Jacqui Batley
Identification of candidate blackleg disease resistance genes in Brassica napus and study of evolution of disease resistance gene analogues in Brassica genomes

Mr Habib Rijzaani
Coord Supervisor: Dave Edwards
Construction of the Banana (Musaceae) Pangenome

Mr Armin Scheben
Coord Supervisor: Dave Edwards
DNA fingerprinting in canola

Ms Gaylene Somerville
Coord Supervisor: Michael Renton
The influences of spatial structure and stacking weed control tactics on predictions of herbicide resistance evolution

Mrs Soodeh Tirnaz
(Coord Supervisor: Jacqui Batley
DNA methylation in canola

Ms Elizabeth Trevenen
Coord Supervisor: Michael Renton
Predicting resilience in restored plant communities

Mr Yuxuan Yuan
Coord Supervisor: Dave Edwards
Uncovering structural variations using optimized plant reference genomes

Miss Fangning Zhang
Coord Supervisor: Jacqui Batley
Pangenome study of blackleg disease patho-system

NEW POSTGRADUATE ENROLMENTS

Mr Shes Bhandari
Coord Supervisor: Michael Renton
Individual based growth modelling in Eucalyptus marginata

Mr Haifei Hu
Coord Supervisor: Dave Edwards
Comparative pangenomics in Amborella trichopoda and Glycine max

Mr Stanly Mastrantonis
Coord Supervisor: Michael Renton
Modelling the conservation of wide ranging species.

Ms Clementine Merce
Coord Supervisor: Dave Edwards
Brassica napus DNA methylation study: effect of tissue culture and heritability

POST GRADUATE COMPLETIONS

Dr Benjamin Congdon
Coord Supervisor: Michael Renton
The causes and consequences of individual variation in cognitive ability in the cooperatively breeding Australian magpie (Cracticus tibicen dorsailis)

Dr Nathan Craig
Coord Supervisor: Michael Renton
Labile organic matter and mineral nitrogen dynamics of contrasting crop rotations under long term no-tillage.

UNDER GRADUATE TEACHING

Unit Code	Level	Unit Name	SAB Teaching Staff
AGRI2202	2	Agribusiness models	Michael Renton
ENVT2221	2	Global climate change and biodiversity	Dave Edwards
PLNT3306	3	Australian vegetation	Michael Renton
SCI3314	3	Crops and cropping systems	Michael Renton
AGRI4401	4	Advanced crop production science	Michael Renton
AGRI4402	4	Data management and analysis in the natural sciences	Michael Renton, Dave Edwards
AGRI4403	4	The conduct, ethics and communication of science	Michael Renton
AGRI4404	4	Breeding and animal biotechnology	Dave Edwards
AGRI4405	4	Breeding and plant biotechnology	Jacqui Batley, Dave Edwards
AGRI5501	5	Advanced breeding and biotechnology in action	Jacqui Batley , Dave Edwards
AGRI5502	5	Case studies in breeding and technology	Jacqui Batley , Dave Edwards
AGRI5542	5	Conservation biology	Jacqui Batley
SCIE5500	5	Modelling natural systems	Michael Renton

PUBLICATIONS

Research Papers

Mason, A., Higgins, E., Snowdon, R., Batley, J., Stein, A., Werner, C., Parkin, I. 2017 A user guide to the Brassica60K Illumina Infinium SNP genotyping array. Theoretical and Applied Genetics: 130: 621-633.

Kaur, P., Bayer, P., Milec, Z., Vrána, J., Yuan, Y., Appels, R., Edwards, D., Batley, J., Nichols, P., Erskine, W., Doležel, J. 2107 An advanced reference genome of Trifolium subterraneum L. reveals genes related to agronomic performance. Plant Biotechnology Journal: 90: 1007-1013

Bayer, P., Hurgobin, B., Golicz, A., Chan, C., Yuan, Y., Lee, H., Renton, M., Meng, J., Li, R., Long, Y., Zou, J., Bancroft, I., Chalhoub, B., King, G., Batley, J., Edwards, D. 2017 Assembly and comparison of two closely related Brassica napus genomes. Plant Biotechnology Journal: 15: 1602-1610

Dolatabadian, A., Patel, D., Edwards, D., Batley, J 2017.Copy number variation and disease resistance in plants. Theoretical and Applied Genetics: 130: 2479-2490.

Neik, T Barbetti, M Batley, J. 2017. Current status and challenges in identifying disease resistance genes in Brassica napus. Frontiers in Plant Science: 8: 1788 .

Dhaliwal, I Mason, A Banga, S Bharti, S Kaur, B Gurung, A Salisbury, P Batley, J Banga, S. 2017. Cytogenetic and molecular characterization of B-genome introgression lines of Brassica napus L. G3-Genes Genomes Genetics: 7: 77-86.

Valdiani, A., Talei, D., Lattoo, S., Ortiz, R., Rasmussen, S., Batley, J., Rafii, M., Maziah, M., Sabu, K., Abiri, R., Sakuanrungsirikul, S., Tan, S. 2017 Genoproteomics-assisted improvement of Andrographis paniculata: toward a promising molecular and conventional breeding platform for autogamous plants affecting the pharmaceutical industry. Critical Reviews in Biotechnology: 8: 1-4.

Scheben, A Batley, J Edwards, D. 2017 Genotyping-by-sequencing approaches to characterize crop genomes: choosing the right tool for the right application. Plant Biotechnology Journal: 15: 149-161.

Yuan, Y Bayer, P Batley, J Edwards, D.2017 Improvements in Genomic Technologies: Application to Crop Genomics. Trends In Biotechnology: 35: 547-558.

Mirzaei, S., Batley, J., El-Mellouki, T., Liu, S., Meksem, K., Ferguson, B., Gresshoff, P. 2017 Neodiversification of homeologous CLAVATA1-like receptor kinase genes in soybean leads to distinct developmental outcomes. Scientific Reports: 7: 8878

Lim, D., Schuhmann, H., Thomas-Hall, S., Chan, K., Wass, T., Aguilera, F., Adarme-Vega, T., Dal'Molin, C., Thorpe, G., Batley, J., Edwards, D., Schenk, P. 2017. RNA-Seq and metabolic flux analysis of Tetraselmis sp. M8 during nitrogen starvation reveals a two-stage lipid accumulation mechanism. Bioresource Technology: 244: 1281-1293.

Mwathi, M Gupta, M Atri, C Banga, S Batley, J Mason, A. 2017 Segregation for fertility and meiotic stability in novel Brassica allohexaploids. Theoretical and Applied Genetics: 130: 767-778.

Nelson, M Ksiazkiewicz, M Rychel, S Besharat, N Taylor, C Wyrwa, K Jost, R Erskine, W Cowling, W Berger, J Batley, J Weller, J Naganowska, B Wolko, B. 2017. The loss of vernalization requirement in narrow-leafed lupin is associated with a deletion in the promoter and de-repressed expression of a Flowering Locus T (FT) homologue. New Phytologist: 213: 220-232.

Montenegro, J Golicz, A Bayer, P Hurgobin, B Lee, H Chan, C Visendi, P Lai, K Doležel, J Batley, J Edwards, D. 2017 The pangenome of hexaploid bread wheat. Plant Journal: 90: 1007-1013

Scheben, A., Wolter, F., Batley, J., Puchta, H., Edwards, D. 2017. Towards CRISPR/Cas crops - bringing together genomics and genome editing. New Phytologist: 216: 682-698.

Yuan Y, Bayer PE, Scheben A; Chan CKK and Edwards D. 2017. BioNanoAnalyst: A visualisation tool to assess genome assembly quality using BioNano data. BMC Bioinformatics: 18: 323.

Dwivedi SL, Scheben AP, Edwards D, Spillane C, Ortiz 2017 Assessing and exploiting functional diversity in germplasm pools to enhance abiotic stress adaptation and yield in cereals and food legumes. Frontiers in Plant Science. 8: 30.

Hane, J., Ming, Y., Kamphuis, L., Nelson, M., Garg, G., Atkins, C., Bayer, P., Bravo, A., Bringans, S., Cannon, S., Edwards, D., Foley, R., Gao, L., Harrison, M., Huang, W., Hurgobin, B., Li, S., Liu, C., McGrath, A., Morahan, G., Murray, J., Weller, J., Jian, J., Singh, K. 2017. A comprehensive draft genome sequence for lupin (Lupinus angustifolius), an emerging health food: insights into plant–microbe interactions and legume evolution. Plant Biotechnology Journal: 15: 318-330.

Kaur, P Appels, R Bayer, P Keeble-Gagnere, G Wang, J Hirakawa, H Shirasawa, K Vercoe, P Stefanova, K Durmic, Z Nichols, P Revell, C Isobe, S Edwards, D Erskine, W. 2017. Climate Clever Clovers: New Paradigm to Reduce the Environmental Footprint of Ruminants by Breeding Low Methanogenic Forages Utilizing Haplotype Variation. Frontiers in Plant Science: 8: 1463.

.Yuan, Y Bayer, P Lee, H Edwards, D. 2017. runBNG: a software package for BioNano genomic analysis on the command line. Bioinformatics: 33: 3107-3109

Hurgobin, B Edwards, D. 2017. SNP discovery using a pangenome: Has the single reference approach become obsolete? Biology: 6: 21.

Schneider, M Griffin, P Tyagi, S Flannery, M Dayalan, S Gladman, S Watson-Haigh, N Bayer, P Charleston , M Cooke, I Cook, R Edwards, R Edwards, D Gorse, D McConville, M Powell, D Wilkins , M Lonie, 2017 Establishing a distributed national research infrastructure providing bioinformatics support to life science researchers in Australia. Briefings in Bioinformatics: 1-6.

Cresswell, A Thomson, D Trevenen, E Renton, M.2017. A functional-structural coral model. MODSIM2017: 22nd International Congress on Modelling and Simulation

Congdon, B Coutts, B Renton, M Flematti, G Jones, R. 2017 Establishing alighting preferences and species transmission differences for Pea seed-borne mosaic virus aphid vectors. Virus Research: 241: 145-155.

Orchard, S Standish, R Dickie, I Renton, M Walker, C Moot, D Ryan, M. 2017. Fine root endophytes under scrutiny: a review of the literature on arbuscule-producing fungi recently suggested to belong to the Mucoromycotina Mycorrhiza: 27: 619-638.

Congdon, B., Coutts, B., Jones, R., Renton, M.2017. Forecasting model for Pea seed-borne mosaic virus epidemics in field pea crops in a Mediterranean-type environment. Virus Research: 241: 163-171.

Smith, R., Renton, M., Reid, N. 2017. Growth and carbon sequestration by remnant Eucalyptus camaldulensis woodlands in semi-arid Australia during La Niña conditions. Agricultural and Forest Meteorology: 232: 704-710.

Somerville, G., Powles, S., Walsh, M., Renton, M.2017. How do spatial heterogeneity and dispersal in weed population models affect predictions of herbicide resistance evolution? Ecological Modelling: 362: 37-63.

You, M Rensing, K Renton, M Barbetti, M. 2017 Modeling effects of temperature, soil, moisture, nutrition and variety as determinants of severity of Pythium damping-off and root disease in subterranean clover. Frontiers in Microbiology: 8: 2223.

Renton, M. Chauhan, B. 2017. Modelling crop-weed competition: Why, what, how and what lies ahead? Crop Protection: 95: 173-176.

Congdon, B Coutts, B Renton, M Jones, R. 2017. Pea seed-borne mosaic virus Pathosystem Drivers under Mediterranean-Type Climatic Conditions: Deductions from 23 Epidemic Scenarios. Plant Disease: 101: 929-940.

Teste, F., Kardol, P., Turner, B., Wardle, D., Zemunik, G., Renton, M., Laliberté, E. 2017. Plant-soil feedback and the maintenance of diversity in Mediterranean-climate shrublands Science: 355: 173-176.

Strehlow, B., Pineda, M., Duckworth, A., Kendrick, G., Renton, M., Abdul Wahab, M., Webster, N., Clode, P. 2017. Sediment tolerance mechanisms identified in sponges using advanced imaging techniques. Peerj: 2017: 11.

Congdon, B., Coutts, B., Renton, M. van Leur, J., Jones, R.2017 Seed fractionation as a phytosanitary control measure for Pea seed-borne mosaic virus infection of field pea seed-stocks. European Journal of Plant Pathology: 1: 733-737.

Moniodis, J Jones, C Renton, M Plummer, J Barbour, E Ghisalberti, E Bohlmann, J. 2017. Sesquiterpene Variation in West Australian Sandalwood (Santalum spicatum). Molecules: 6: 940.

Streit, K Bahr, C Evers, J Renton, M 2017. Simulation of the progression of yellow spot on wheat using a functional-structural plant model (FSPM): Model concepts. Modsim2017, 22nd International Congress on Modelling and Simulation:

Gagliano, M Grimonprez, M Depczynski, M Renton, M. 2017. Tuned in: plant roots use sound to locate water. Oecologia: 174: 1-10.

Somerville, G Powles, S Walsh, M Renton, M. 2017. Why was resistance to shorter-acting pre-emergence herbicides slower to evolve? Pest Management Science: 73: 844-851.

Book Chapters

Khan AW, Thudi M, Varshney R and Edwards D 2017 Sequencing the Chickpea Genome Compendium of Plant Genomes: Chapter 10: 117-123. Springer International Publishing.

Invited and Contributed Presentations

Batley, J. Plenary lecture: Agricultural Genomics 2017: Functional Genomics towards Green Crops for Sustainable Agriculture, Wuhan, China

Batley, J. Symposium talk: COMBIO, Adelaide, Australia

Batley, J. Keynote address: Genetics Society of Australasia (GSA) and the NZ Society for Biochemistry and Molecular Biology (NZSBMB) Conference, Dunedin, New Zealand

Batley, J. Lead lecture: Enhancing Oilseed Brassica Production through Climate Smart Technologies: 3rd National Brassica Conference, New Delhi, India

Editorial Boards

Jacqui Batley

Editorial Board: PeerJ (Impact Factor 2.177. Ranking 20/64 Multidisciplinary journals)

Editorial Board: Frontiers in Plant Science (Impact factor 4.298. Ranking 20/211 Plant Science journals)

Guest Editor of Special Issue: Crop and Pasture Science (Impact Factor 1.804. Ranking 10/56 Agriculture journals)

Editorial Board: BMC Genomics (Impact Factor 3.729. Ranking 33/158 Biotechnology and Applied Microbiology journals)

Editorial Board: Plant Molecular Biology Reporter (Impact Factor 1.932: Ranking: 70/211 Plant Science journals)

Dave Edwards

Editorial Board: Plant Biotechnology Journal, The Plant Genome

Member of the Multinational Brassica Genome Project steering committee

Co-chair of the international wheat information system expert working group

Member of the multinational Brassica information system

Advisory board for the international rice informatics consortium

Member of international pea genome sequencing project consortium.

Member of international lentil genome sequencing project consortium.

UWA Node leader for EMBL Australia Bioinformatics Resource

Chair of agriculture and climate change conference (2019), Budapest, Hungary.

Michael Renton

Treasurer of the Asian Pacific Weeds Science Society

External Collaborations

Dave Edwards

Australian Genome Research Facility Ltd, Melbourne

CSIRO Agriculture, Wembley, WA, Australia

Department of Environment and Agriculture, CCDM Bioinformatics, Centre for Crop and Disease

EMBL Australia Bioinformatics Resource (EMBL-ABR)
Institute of Experimental Botany, Centre of the Region Hana for Biotechnological and Agricultural Research, Czech Republic

Institute of System and Synthetic Biology, Genopole, Centre National de la Recherche Scientifique, Universite d'Evry, Val d'Essonne, Universite Paris-Saclay, Evry, France

National Key Laboratory of Crop Genetic Improvement, Key Laboratory of Rapeseed Genetic Improvement, Ministry of Agriculture P. R. China, Huazhong Agricultural University, Wuhan, China

Plant Breeding and Acclimatization Institute—National Research Institute, Oilseed Crops Research Centre, Poznan, Poland

Queensland Cyber Infrastructure Foundation Ltd (QCIF)

Department of Plant Breeding Justus-Liebig University, Giessen

Agriculture and Agrifood Canada (Saskatoon),

School of Biology University of York

Southern Cross Plant Science, Southern Cross University

School of Agriculture and Food Sciences, University of Queensland

QFAB Bioinformatics (Brisbane, Australia)

Jacqui Batley

Plant Breeding and Acclimatization Institute—National Research Institute, Oilseed Crops Research Centre, Poznan, Poland

Department of Plant Breeding Justus-Liebig University, Giessen

Agriculture and Agrifood Canada (Saskatoon),

School of Biology University of York

Southern Cross Plant Science, Southern Cross University

Punjab Agricultural University

School of Agriculture and Food Sciences, University of Queensland (also Dave)

Yangzhou University, China

Member of the Multinational Brassica Genome Project steering committee

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Member of international pea genome sequencing project consortium.

Member of international lentil genome sequencing project consortium.

Gene Technology technical Advisory Committee in 2017.

Australian Biosciences Data Capability Reference Group

Australian Genome Research Facility Ltd, Melbourne

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Internal Collaborations

Jacqueline Batley & Dave Edwards

Institute of Agriculture, The University of Western Australia, Crawley, WA, Australia

Centre for Plant Genetics and Breeding, The University of Western Australia, Crawley, WA, Australia,

School of Agriculture and Environment, The University of Western Australia, Crawley, WA, Australia

Center of Excellence for Plant Energy Biology, The University of Western Australia, Crawley, WA, Australia

The Centre for Energy, The University of Western Australia, Crawley, WA, Australia

National & International Visitors

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Dr Jinjin Jiang, Yangzhou University, China.

Dr Kalidas Pati, ICAR – Central Tuber Crops Research Institute, India.

Dr Md. Shahid, Huazhong Agricultural University, China

Ms Kiran Zubair, Hazan University Manshara, Pakistan

Dave Edwards

Dr Junliang Zhao, Guangdong Academy of Agricultural Sciences, China

Michael Renton

Mr Christopher Bahr, University of Gottingen, Germany.

Funding Success

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Global Innovation Linkages: $995,700, plus $600,000 from industry

NHMRC Equipment Grants: 2017 - Purchase of a Kingfisher 96 Flex nucleic acid/protein purification system. $50,000

Michael Renton

UWA Research Collaboration Awards: Plant-soil interactions through space and time: forecasts and ecological relevance: $28,627

COMPUTATIONAL BIOLOGY

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Academic Staff

Prof. Jacqui Batley

- Plant pathogen interactions
- Disease resistance
- Genetics and genomics of Brassica crops
- Population genomics
- Evolutionary genomics

Prof. Dave Edwards

- Genomics: structure, expression and variation
- Bioinformatics
- Evolution
- Crop improvement
- Climate change

Dr Michael Renton

- Ecological & agricultural modelling
- FSPM modelling
- Evolution of resistance to herbicide and pesticide
- Prediction & management of weeds, pests & diseases
- Statistical modelling & analysis

A/Prof Patrick Finnegan

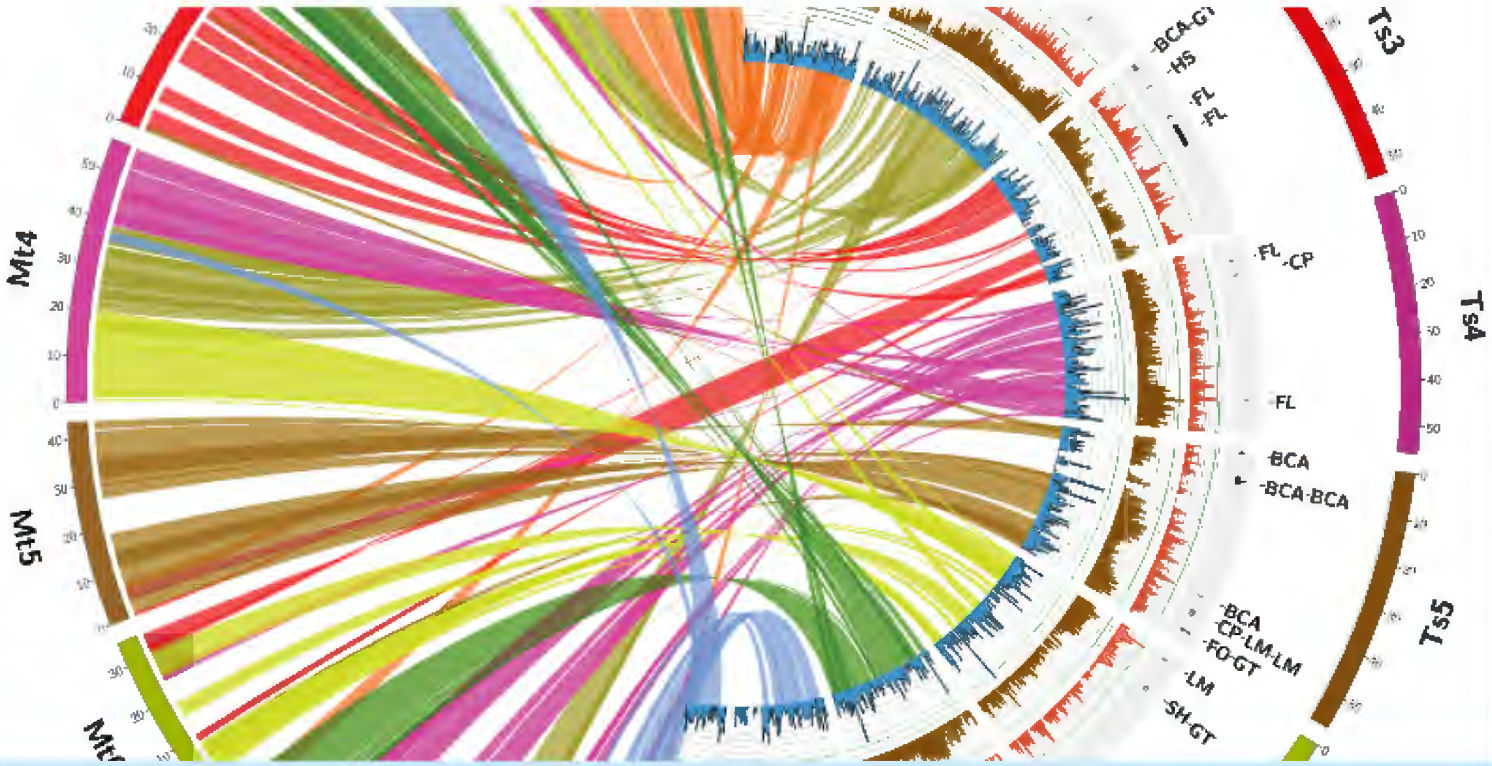
- Genetic manipulation of plants
- Phosphate transport
- Mitichondrial biogenesis & evolution
- Plant physiology
- Phosphate homeostasis

Dr Katarina Streit

- Functional-structural plant modelling (FSPM)
- Plant disease modelling
- Tree architectural modelling
- L-systems
- Light simulations
- Sensitivity analysis

Dr Philipp Bayer

- Plant genomics
- Plant pangenomics
- Computer-assisted breeding programs
- Brassica
- Wheat
- Legumes
- Seagrasses



COMPUTATIONAL BIOLOGY RESEARCH GROUPS

The Batley Laboratory

Professor Jacqueline Batley established the Batley lab when she moved to The University of Queensland in 2007. In August 2014 she moved to the University of Western Australia as an ARC Future Fellow. The lab consists of several full time researchers and PhD students. The research group focus on genetics and genomics for crop improvement, with emphasis on plant-pathogen interactions. We develop and apply breakthrough biotechnological advances for canola crop improvement, through identification of genomic regions controlling traits, which are being translated to commercial outcomes. These novel methods are leading to an increase in the yield of this important crop, and thus contributing to national exports and increasing global food security. Whilst much of the work is focussed on Brassicas we also apply these technologies to other species.

Applied Bioinformatics Group

The applied bioinformatics group was founded in 2007 at the University of Queensland and moved to the University of Western Australia in January 2015. Since this time, the group has established itself as a leading bioinformatics group in Australia. Our current research activities include the second generation sequencing of complex genomes and metagenomic populations, genome annotation, diversity analysis, trait association and data visualisation.

The group receives funding from the University of Western Australia, the Australian Research Council, the Grains Research and Development Corporation and several industry partners to undertake applied bioinformatics research in genetics and genomics.

The group is led by Professor David Edwards and consists of researchers with diverse backgrounds. We offer training in applied bioinformatics at all levels and publish widely in the fields of genomics, genetics and bioinformatics

2017 RESEARCH HIGHLIGHTS

2

PhD Completions

1

Masters Completions

6

Visiting Researchers

44

Publications

External Grants

3

$1.67 M

8

External Collaborations

4

Internal Collaborations

1

Awards & Recognition

POST GRADUATE RESEARCH STUDENTS

Ms Anna Cresswell
Coord Supervisor: Michael Renton
Disturbance dynamics in coral reef ecosystems

Mr Aria Dolatabadian
Coord Supervisor: Jacqui Batley
Copy Number Variation and Blackleg Resistance in Canola

Mr Fabian Inturrisi
Coord Supervisor: Jacqui Batley
Genome-wide analysis of NBS-LRR genes in Indian mustard (Brassica juncea) and prediction of candidate disease resistance genes

Mr Md. Aamir Waseem Khan
Coord Supervisor: Dave Edwards
Pangenome analysis in Cicer spp.provides insights into evolution of chickpea (Cicer arietinum)

Ms Seyedeh Derazmahalleh
Coord Supervisor: Dave Edwards
Exploring legume genome evolution and domestication using genomics and bioinformatics approaches

Ms Ting Xiang Neik
Coord Supervisor: Jacqui Batley
Identification of blackleg resistance gene in Brassica napus

Ms Fiamma Riviera
Coord Supervisor: Michael Renton
Testing ecological theory and informing restoration practice using temporal patterns in the floristics and functional traits of kwongan vegetation restored after mining

Ms Yueqi Zhang
Coord Supervisor: Jacqui Batley
Identification of candidate blackleg disease resistance genes in Brassica napus and study of evolution of disease resistance gene analogues in Brassica genomes

Mr Habib Rijzaani
Coord Supervisor: Dave Edwards
Construction of the Banana (Musaceae) Pangenome

Mr Armin Scheben
Coord Supervisor: Dave Edwards
DNA fingerprinting in canola

Ms Gaylene Somerville
Coord Supervisor: Michael Renton
The influences of spatial structure and stacking weed control tactics on predictions of herbicide resistance evolution

Mrs Soodeh Tirnaz
(Coord Supervisor: Jacqui Batley
DNA methylation in canola

Ms Elizabeth Trevenen
Coord Supervisor: Michael Renton
Predicting resilience in restored plant communities

Mr Yuxuan Yuan
Coord Supervisor: Dave Edwards
Uncovering structural variations using optimized plant reference genomes

Miss Fangning Zhang
Coord Supervisor: Jacqui Batley
Pangenome study of blackleg disease patho-system

NEW POSTGRADUATE ENROLMENTS

Mr Shes Bhandari
Coord Supervisor: Michael Renton
Individual based growth modelling in Eucalyptus marginata

Mr Haifei Hu
Coord Supervisor: Dave Edwards
Comparative pangenomics in Amborella trichopoda and Glycine max

Mr Stanly Mastrantonis
Coord Supervisor: Michael Renton
Modelling the conservation of wide ranging species.

Ms Clementine Merce
Coord Supervisor: Dave Edwards
Brassica napus DNA methylation study: effect of tissue culture and heritability

POST GRADUATE COMPLETIONS

Dr Benjamin Congdon
Coord Supervisor: Michael Renton
The causes and consequences of individual variation in cognitive ability in the cooperatively breeding Australian magpie (Cracticus tibicen dorsailis)

Dr Nathan Craig
Coord Supervisor: Michael Renton
Labile organic matter and mineral nitrogen dynamics of contrasting crop rotations under long term no-tillage.

UNDER GRADUATE TEACHING

Unit Code	Level	Unit Name	SAB Teaching Staff
AGRI2202	2	Agribusiness models	Michael Renton
ENVT2221	2	Global climate change and biodiversity	Dave Edwards
PLNT3306	3	Australian vegetation	Michael Renton
SCI3314	3	Crops and cropping systems	Michael Renton
AGRI4401	4	Advanced crop production science	Michael Renton
AGRI4402	4	Data management and analysis in the natural sciences	Michael Renton, Dave Edwards
AGRI4403	4	The conduct, ethics and communication of science	Michael Renton
AGRI4404	4	Breeding and animal biotechnology	Dave Edwards
AGRI4405	4	Breeding and plant biotechnology	Jacqui Batley, Dave Edwards
AGRI5501	5	Advanced breeding and biotechnology in action	Jacqui Batley , Dave Edwards
AGRI5502	5	Case studies in breeding and technology	Jacqui Batley , Dave Edwards
AGRI5542	5	Conservation biology	Jacqui Batley
SCIE5500	5	Modelling natural systems	Michael Renton

PUBLICATIONS

Research Papers

Mason, A., Higgins, E., Snowdon, R., Batley, J., Stein, A., Werner, C., Parkin, I. 2017 A user guide to the Brassica60K Illumina Infinium SNP genotyping array. Theoretical and Applied Genetics: 130: 621-633.

Kaur, P., Bayer, P., Milec, Z., Vrána, J., Yuan, Y., Appels, R., Edwards, D., Batley, J., Nichols, P., Erskine, W., Doležel, J. 2107 An advanced reference genome of Trifolium subterraneum L. reveals genes related to agronomic performance. Plant Biotechnology Journal: 90: 1007-1013

Bayer, P., Hurgobin, B., Golicz, A., Chan, C., Yuan, Y., Lee, H., Renton, M., Meng, J., Li, R., Long, Y., Zou, J., Bancroft, I., Chalhoub, B., King, G., Batley, J., Edwards, D. 2017 Assembly and comparison of two closely related Brassica napus genomes. Plant Biotechnology Journal: 15: 1602-1610

Dolatabadian, A., Patel, D., Edwards, D., Batley, J 2017.Copy number variation and disease resistance in plants. Theoretical and Applied Genetics: 130: 2479-2490.

Neik, T Barbetti, M Batley, J. 2017. Current status and challenges in identifying disease resistance genes in Brassica napus. Frontiers in Plant Science: 8: 1788 .

Dhaliwal, I Mason, A Banga, S Bharti, S Kaur, B Gurung, A Salisbury, P Batley, J Banga, S. 2017. Cytogenetic and molecular characterization of B-genome introgression lines of Brassica napus L. G3-Genes Genomes Genetics: 7: 77-86.

Valdiani, A., Talei, D., Lattoo, S., Ortiz, R., Rasmussen, S., Batley, J., Rafii, M., Maziah, M., Sabu, K., Abiri, R., Sakuanrungsirikul, S., Tan, S. 2017 Genoproteomics-assisted improvement of Andrographis paniculata: toward a promising molecular and conventional breeding platform for autogamous plants affecting the pharmaceutical industry. Critical Reviews in Biotechnology: 8: 1-4.

Scheben, A Batley, J Edwards, D. 2017 Genotyping-by-sequencing approaches to characterize crop genomes: choosing the right tool for the right application. Plant Biotechnology Journal: 15: 149-161.

Yuan, Y Bayer, P Batley, J Edwards, D.2017 Improvements in Genomic Technologies: Application to Crop Genomics. Trends In Biotechnology: 35: 547-558.

Mirzaei, S., Batley, J., El-Mellouki, T., Liu, S., Meksem, K., Ferguson, B., Gresshoff, P. 2017 Neodiversification of homeologous CLAVATA1-like receptor kinase genes in soybean leads to distinct developmental outcomes. Scientific Reports: 7: 8878

Lim, D., Schuhmann, H., Thomas-Hall, S., Chan, K., Wass, T., Aguilera, F., Adarme-Vega, T., Dal'Molin, C., Thorpe, G., Batley, J., Edwards, D., Schenk, P. 2017. RNA-Seq and metabolic flux analysis of Tetraselmis sp. M8 during nitrogen starvation reveals a two-stage lipid accumulation mechanism. Bioresource Technology: 244: 1281-1293.

Mwathi, M Gupta, M Atri, C Banga, S Batley, J Mason, A. 2017 Segregation for fertility and meiotic stability in novel Brassica allohexaploids. Theoretical and Applied Genetics: 130: 767-778.

Nelson, M Ksiazkiewicz, M Rychel, S Besharat, N Taylor, C Wyrwa, K Jost, R Erskine, W Cowling, W Berger, J Batley, J Weller, J Naganowska, B Wolko, B. 2017. The loss of vernalization requirement in narrow-leafed lupin is associated with a deletion in the promoter and de-repressed expression of a Flowering Locus T (FT) homologue. New Phytologist: 213: 220-232.

Montenegro, J Golicz, A Bayer, P Hurgobin, B Lee, H Chan, C Visendi, P Lai, K Doležel, J Batley, J Edwards, D. 2017 The pangenome of hexaploid bread wheat. Plant Journal: 90: 1007-1013

Scheben, A., Wolter, F., Batley, J., Puchta, H., Edwards, D. 2017. Towards CRISPR/Cas crops - bringing together genomics and genome editing. New Phytologist: 216: 682-698.

Yuan Y, Bayer PE, Scheben A; Chan CKK and Edwards D. 2017. BioNanoAnalyst: A visualisation tool to assess genome assembly quality using BioNano data. BMC Bioinformatics: 18: 323.

Dwivedi SL, Scheben AP, Edwards D, Spillane C, Ortiz 2017 Assessing and exploiting functional diversity in germplasm pools to enhance abiotic stress adaptation and yield in cereals and food legumes. Frontiers in Plant Science. 8: 30.

Hane, J., Ming, Y., Kamphuis, L., Nelson, M., Garg, G., Atkins, C., Bayer, P., Bravo, A., Bringans, S., Cannon, S., Edwards, D., Foley, R., Gao, L., Harrison, M., Huang, W., Hurgobin, B., Li, S., Liu, C., McGrath, A., Morahan, G., Murray, J., Weller, J., Jian, J., Singh, K. 2017. A comprehensive draft genome sequence for lupin (Lupinus angustifolius), an emerging health food: insights into plant–microbe interactions and legume evolution. Plant Biotechnology Journal: 15: 318-330.

Kaur, P Appels, R Bayer, P Keeble-Gagnere, G Wang, J Hirakawa, H Shirasawa, K Vercoe, P Stefanova, K Durmic, Z Nichols, P Revell, C Isobe, S Edwards, D Erskine, W. 2017. Climate Clever Clovers: New Paradigm to Reduce the Environmental Footprint of Ruminants by Breeding Low Methanogenic Forages Utilizing Haplotype Variation. Frontiers in Plant Science: 8: 1463.

.Yuan, Y Bayer, P Lee, H Edwards, D. 2017. runBNG: a software package for BioNano genomic analysis on the command line. Bioinformatics: 33: 3107-3109

Hurgobin, B Edwards, D. 2017. SNP discovery using a pangenome: Has the single reference approach become obsolete? Biology: 6: 21.

Schneider, M Griffin, P Tyagi, S Flannery, M Dayalan, S Gladman, S Watson-Haigh, N Bayer, P Charleston , M Cooke, I Cook, R Edwards, R Edwards, D Gorse, D McConville, M Powell, D Wilkins , M Lonie, 2017 Establishing a distributed national research infrastructure providing bioinformatics support to life science researchers in Australia. Briefings in Bioinformatics: 1-6.

Cresswell, A Thomson, D Trevenen, E Renton, M.2017. A functional-structural coral model. MODSIM2017: 22nd International Congress on Modelling and Simulation

Congdon, B Coutts, B Renton, M Flematti, G Jones, R. 2017 Establishing alighting preferences and species transmission differences for Pea seed-borne mosaic virus aphid vectors. Virus Research: 241: 145-155.

Orchard, S Standish, R Dickie, I Renton, M Walker, C Moot, D Ryan, M. 2017. Fine root endophytes under scrutiny: a review of the literature on arbuscule-producing fungi recently suggested to belong to the Mucoromycotina Mycorrhiza: 27: 619-638.

Congdon, B., Coutts, B., Jones, R., Renton, M.2017. Forecasting model for Pea seed-borne mosaic virus epidemics in field pea crops in a Mediterranean-type environment. Virus Research: 241: 163-171.

Smith, R., Renton, M., Reid, N. 2017. Growth and carbon sequestration by remnant Eucalyptus camaldulensis woodlands in semi-arid Australia during La Niña conditions. Agricultural and Forest Meteorology: 232: 704-710.

Somerville, G., Powles, S., Walsh, M., Renton, M.2017. How do spatial heterogeneity and dispersal in weed population models affect predictions of herbicide resistance evolution? Ecological Modelling: 362: 37-63.

You, M Rensing, K Renton, M Barbetti, M. 2017 Modeling effects of temperature, soil, moisture, nutrition and variety as determinants of severity of Pythium damping-off and root disease in subterranean clover. Frontiers in Microbiology: 8: 2223.

Renton, M. Chauhan, B. 2017. Modelling crop-weed competition: Why, what, how and what lies ahead? Crop Protection: 95: 173-176.

Congdon, B Coutts, B Renton, M Jones, R. 2017. Pea seed-borne mosaic virus Pathosystem Drivers under Mediterranean-Type Climatic Conditions: Deductions from 23 Epidemic Scenarios. Plant Disease: 101: 929-940.

Teste, F., Kardol, P., Turner, B., Wardle, D., Zemunik, G., Renton, M., Laliberté, E. 2017. Plant-soil feedback and the maintenance of diversity in Mediterranean-climate shrublands Science: 355: 173-176.

Strehlow, B., Pineda, M., Duckworth, A., Kendrick, G., Renton, M., Abdul Wahab, M., Webster, N., Clode, P. 2017. Sediment tolerance mechanisms identified in sponges using advanced imaging techniques. Peerj: 2017: 11.

Congdon, B., Coutts, B., Renton, M. van Leur, J., Jones, R.2017 Seed fractionation as a phytosanitary control measure for Pea seed-borne mosaic virus infection of field pea seed-stocks. European Journal of Plant Pathology: 1: 733-737.

Moniodis, J Jones, C Renton, M Plummer, J Barbour, E Ghisalberti, E Bohlmann, J. 2017. Sesquiterpene Variation in West Australian Sandalwood (Santalum spicatum). Molecules: 6: 940.

Streit, K Bahr, C Evers, J Renton, M 2017. Simulation of the progression of yellow spot on wheat using a functional-structural plant model (FSPM): Model concepts. Modsim2017, 22nd International Congress on Modelling and Simulation:

Gagliano, M Grimonprez, M Depczynski, M Renton, M. 2017. Tuned in: plant roots use sound to locate water. Oecologia: 174: 1-10.

Somerville, G Powles, S Walsh, M Renton, M. 2017. Why was resistance to shorter-acting pre-emergence herbicides slower to evolve? Pest Management Science: 73: 844-851.

Book Chapters

Khan AW, Thudi M, Varshney R and Edwards D 2017 Sequencing the Chickpea Genome Compendium of Plant Genomes: Chapter 10: 117-123. Springer International Publishing.

Invited and Contributed Presentations

Batley, J. Plenary lecture: Agricultural Genomics 2017: Functional Genomics towards Green Crops for Sustainable Agriculture, Wuhan, China

Batley, J. Symposium talk: COMBIO, Adelaide, Australia

Batley, J. Keynote address: Genetics Society of Australasia (GSA) and the NZ Society for Biochemistry and Molecular Biology (NZSBMB) Conference, Dunedin, New Zealand

Batley, J. Lead lecture: Enhancing Oilseed Brassica Production through Climate Smart Technologies: 3rd National Brassica Conference, New Delhi, India

Editorial Boards

Jacqui Batley

Editorial Board: PeerJ (Impact Factor 2.177. Ranking 20/64 Multidisciplinary journals)

Editorial Board: Frontiers in Plant Science (Impact factor 4.298. Ranking 20/211 Plant Science journals)

Guest Editor of Special Issue: Crop and Pasture Science (Impact Factor 1.804. Ranking 10/56 Agriculture journals)

Editorial Board: BMC Genomics (Impact Factor 3.729. Ranking 33/158 Biotechnology and Applied Microbiology journals)

Editorial Board: Plant Molecular Biology Reporter (Impact Factor 1.932: Ranking: 70/211 Plant Science journals)

Dave Edwards

Editorial Board: Plant Biotechnology Journal, The Plant Genome

Member of the Multinational Brassica Genome Project steering committee

Co-chair of the international wheat information system expert working group

Member of the multinational Brassica information system

Advisory board for the international rice informatics consortium

Member of international pea genome sequencing project consortium.

Member of international lentil genome sequencing project consortium.

UWA Node leader for EMBL Australia Bioinformatics Resource

Chair of agriculture and climate change conference (2019), Budapest, Hungary.

Michael Renton

Treasurer of the Asian Pacific Weeds Science Society

External Collaborations

Dave Edwards

Australian Genome Research Facility Ltd, Melbourne

CSIRO Agriculture, Wembley, WA, Australia

Department of Environment and Agriculture, CCDM Bioinformatics, Centre for Crop and Disease

EMBL Australia Bioinformatics Resource (EMBL-ABR)
Institute of Experimental Botany, Centre of the Region Hana for Biotechnological and Agricultural Research, Czech Republic

Institute of System and Synthetic Biology, Genopole, Centre National de la Recherche Scientifique, Universite d'Evry, Val d'Essonne, Universite Paris-Saclay, Evry, France

National Key Laboratory of Crop Genetic Improvement, Key Laboratory of Rapeseed Genetic Improvement, Ministry of Agriculture P. R. China, Huazhong Agricultural University, Wuhan, China

Plant Breeding and Acclimatization Institute—National Research Institute, Oilseed Crops Research Centre, Poznan, Poland

Queensland Cyber Infrastructure Foundation Ltd (QCIF)

Department of Plant Breeding Justus-Liebig University, Giessen

Agriculture and Agrifood Canada (Saskatoon),

School of Biology University of York

Southern Cross Plant Science, Southern Cross University

School of Agriculture and Food Sciences, University of Queensland

QFAB Bioinformatics (Brisbane, Australia)

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Punjab Agricultural University

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Center of Excellence for Plant Energy Biology, The University of Western Australia, Crawley, WA, Australia

The Centre for Energy, The University of Western Australia, Crawley, WA, Australia

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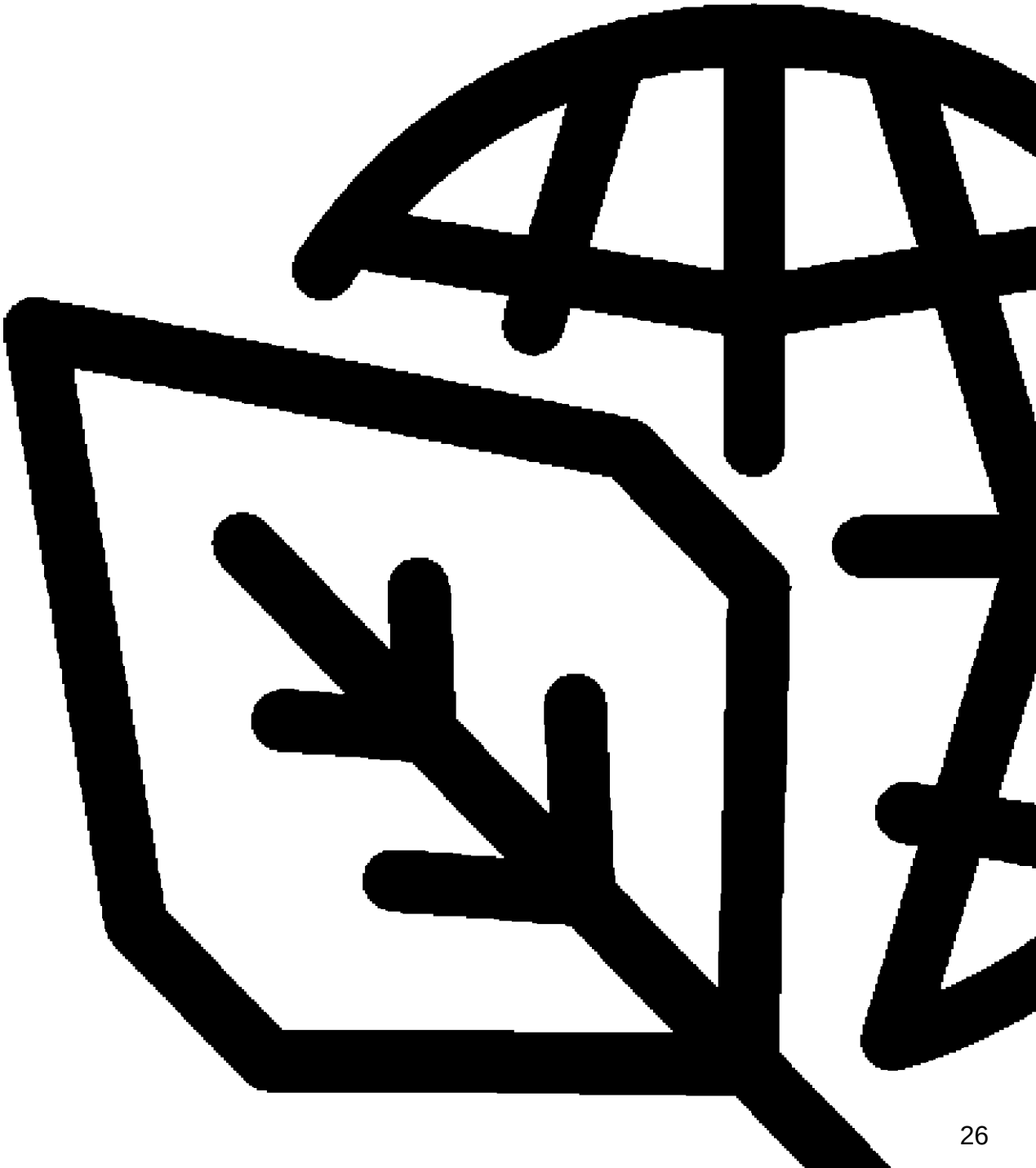
ECOLOGY AND CONSERVATION



ECOLOGY AND CONSERVATION

Ecological research

Ecologists study how species interact with each other, with other species, and with their physical environment. At theSchool of Biological Sciences, we seek to understand the ecological and evolutionary causes of patterns of abundance and extinction, the processes that maintain the balance of natural ecosystems, and how to achieve conservation success. The diverse landscape and extensive coastline of Western Australia provides abundant opportunities to study species in spectacular marine, freshwater and terrestrial environments. We also work extensively across a wide range of environments and climates around the world. Research in ecology and conservation is a multidisciplinary and researchers often cross-themes in their work.

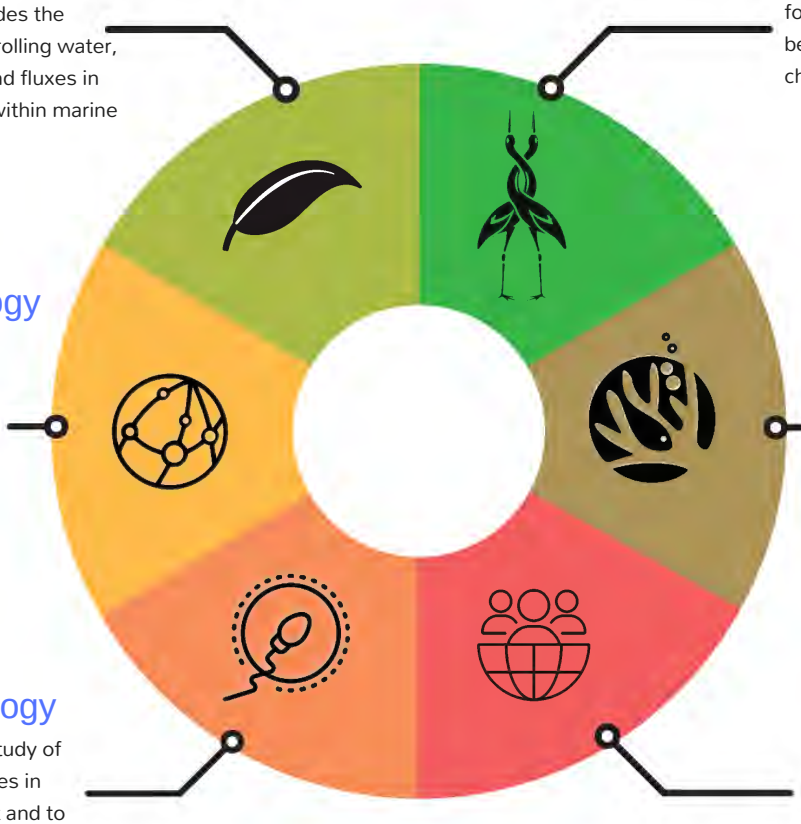
Research themes in ecology

Ecosystem ecology

We research major ecological challenges to maintain ecosystem functioning, including advancing understanding of the processes that drive biodiversity across various scales of time and space. This includes the fundamental processes controlling water, carbon and nutrient stores and fluxes in plants, soils and sediments within marine and terrestrial ecosystems.

Behavioural ecology

Behavioural ecology studies the ecological and evolutionary basis for animal behaviour; how animals perceive their environments, find food and mates; and how plasticity in behaviour enables them to adapt to changing selective pressures.



Community ecology

Community ecology studies the interactions among species in communities at several spatial and temporal scales. Studies include assessment of the distribution, structure and abundance of communities.

Marine ecology

Our studies of marine systems focus on determining what drives the dynamics and structure of populations and ecosystems in marine environments.

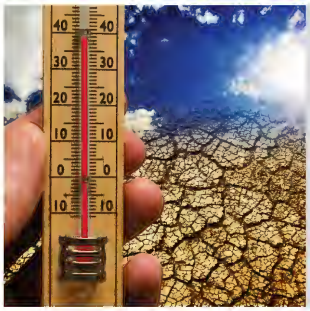
Evolutionary ecology

Evolutionary ecology is the study of how form and function evolves in response to the environment and to other organisms. We investigate the natural and sexual selection pressures that generate species and population divergence in morphological traits.

Population ecology

Population ecology deals with the demography and dynamics of populations, and seeks to understand the drivers of variation in population size and probability of species persistence in space and time.

Research themes in conservation



Global change biology

Understanding the nature of climate change and its impacts is a pressing concern for the management of threatened species and the ecosystems where they live. We use our knowledge of the behaviour and physiology of affected organisms to understand whether species can persist under current rates of climate change, or where species may live in the future. We also use our understanding of the way species respond to their environment to reconstruct past climates

Marine conservation

Marine animals are increasingly facing the impacts of human manipulation of the marine environment, together with more general threats such as ocean warming and acidification. Understanding how marine animals respond to changed environments is vital if we are to predict changes in distributions, growth rates, population dynamics and ecosystem sustainability. We work with threatened species but also common species that are impacted by pressures such as tourism, recreational fishing, and oil and gas installations

Ecosystem restoration and intervention policy

We aim to understand the processes that lead to the degradation of ecosystems and the mechanisms by which they can be conserved and restored. Our research covers a broad range of areas in ecology and natural resource management, from conceptual ecology, to environmental policy via ecosystem restoration and the management and captive breeding of rare and threatened flora and fauna.

Conservation genetics

Threats to the persistence of species through time are tightly linked to the genetic health of populations. We conduct field-based assessments of genetic diversity in species and populations under threat, as well as understanding the genetic basis to extinction risk in a laboratory setting.

2017 RESEARCH HIGHLIGHTS

14 PhD Completions

44 Hon/Masters Students

13 Visiting Researchers

177 Publications

External Grants **25** **$3.36 M**

360 External Collaborations

123 Internal Collaborations

8 Awards & Recognition

Academic Staff
Ecosystem ecology

Prof. Michael Douglas

Tropical rivers | Weed management | Fire management | Environmental flows | Food webs | Freshwater ecology

Assoc. Prof. Samantha Setterfield

Tropical ecology | Invasive plant ecology | Fire ecology | Biodiversity conservation | Plant ecology

Dr Pauline Grierson

Terrestrial & aquatic ecosystem biogeochemistry | Ecohydrology | Ecological water requirements | Tree physiology & hydraulic architecture | Dendroclimatology | Fire ecology | Forest ecology

Dr Matthew Fraser

Marine habitat management | Microbial ecology | Climate change impacts on benthic primary producers | Interactions of sediment health on seagrasses | Biogeochemistry in marine ecosystems

Assoc. Prof. Erik Veneklaas

Carbon balance | Plant physiology/ecology | Plant function in natural, degraded & rehab landscapes | Plant exudates & P acquisition | Water & nutrient use

Dr Kym Abrams

Systematics | Subterranean fauna | Phylogeography | Biodiversity conservation | Invertebrate zoology | Phylogenetics

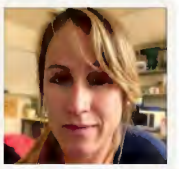
Behavioural ecology

Assoc. Prof. Jon Evans

Behavioural ecology | Evolutionary biology | Fish biology and behaviour | sperm competition | Genital & gamete evolution | Mating systems

Assoc. Prof. Theodore Evans

Social behaviour | Evolutionary phylogenetics | Ecosystem services | Agroecosystems | Pest management | Entymology



Dr Renee Firman

Post copulatory sexual selection | Sperm competition | Selective fertilisation | Adaptive sex allocation | Mammals | House mice | Native rodents

Dr Cyril Grueter

Primatology | Biological anthropolgy | Behavioural ecology | Socioecology | Social behaviour | Comparative analysis

Assoc. Prof. Jan Hemmi

Invertebrate vision & behaviour | Sensory ecology | Neuroscience | Vision | Colour vision | Marsupial vision & behaviour

Dr. Jennifer Kelley

Behavioural ecology | Visual ecology | Freshwater fish ecology | Animal colouration | Predator-prey interactions

Dr Nicola Mitchell

Ecophysiology | Conservation biology | Amphibians | Reproductive biology of vertebrates | Reptiles | Population viability assessment | Adaptation | Assisted colonisation | Climate change | Turtles

Dr Amanda Ridley

Behavioural ecology | Evolutionary biology | Cooperative breeding | Social evolution | Conservation & climate change

Prof. Leigh Simmons

Evolutionary biology | Sperm competition | Behavioural ecology | Sexual selection | Entymology | Evolutionary psychology

Assoc. Prof. Joseph Tomkins

Allometry | Alternative reproduction tactics | Genetic variation | Inbreeding | Sexual selection | Threshold traits

Marine ecology

Prof. Gary Kendrick

Recruitment ecology & spatial dynamics of seagrasses | Ecology of marine macroalgae | Habitat mapping | Spatial population modelling | Seagrass restoration

Dr Jane Price

Marine ecology | Community ecology | Human impacts on marine systems | Long-term population changes

Prof. Jessica Meeuwig

Fish and fisheries ecology | Marine policy | Predictive modelling | Science outreach

Dr Thomas Wernberg

Marine Ecology | Kelp forests | Seaweed Ecology | Impacts of climate change & climate variability | Marine range shifts | Marine invasive species | Marine biogeography & macroecology

Dr Tim Langlois

Ecology of marine crustaceans | Experimental ecology | Multivariate analysis | Ecology of marine fishes

Dr Renae Hovey

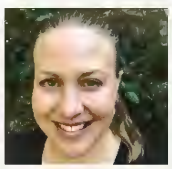
Marine ecology | Benthic habitat mapping | Community ecology | Fisheries management | Geographic information systems | Geostatistics

Dr Dianne McLean

Fish ecology | Stereo-video systems | Fishery independent sampling | Marine conservation

Dr Belinda Cannell

Seabird conservation | Seabird ecology | Climate change | Coastal and marine ecology | Movement behaviour | Little penguin ecology



Dr Ylva Olsen

Marine macrophyte ecology | Climate change | Seagrass disease interactions | Ocean acidifcation | Marine foodwebs & stable isotopes

Dr Ana Martins Sequeira

Marine ecology | Ecological modelling | Marine conservation

Dr Phil Bouchet

Pelagic sharks & fishes | Cetaceans | Hotspots | Submarine topography | Spatial modelling | Abundance estimation

Prof. Dirk Zeller

Global & Indian ocean fisheries | Fishing impacts | Fisheries conservation | Marine conservation | Gill oxygen limitation theory

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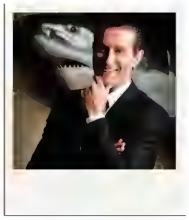
Ecophysiology | Conservation biology | Amphibians | Reproductive biology of vertebrates | Reptiles | Population viability assessment | Adaptation | Assisted colonisation | Climate change | Turtles



Prof. Shaun Collin

Comparative neurobiology | Sensory systems | Neuroscience | Marine Ecology

Dr Matthew Fraser

Marine habitat management | Microbial ecology | Climate change impacts on benthic primary producers | Interactions of sediment health on seagrasses | Biogeochemistry in marine ecosystems

Dr Michael Renton

Ecological & agricultural modelling | FSPM modelling | Evolution of resistance to herbicide and pesticide | Prediction & management of weeds, pests & diseases | Statistical modelling & analysis

Dr James Hehre

Marine ecology | Novel ecosystems | Ecosystem resilience | Community ecology | Marine habitat management

Dr Shanta Barley

Mesopredators | Apex predators | Coral reefs | Predator-prey interactions | Condition | Diet | Risk effects | Marine ecology

Dr. Jennifer Kelley

Behavioural ecology | Visual ecology | Freshwater fish ecology | Animal colouration | Predator-prey interactions

Population ecology

Assoc. Prof. Theodore Evans

Social behaviour | Evolutionary phylogenetics | Ecosystem services | Agroecosystems | Pest management | Entymology

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Dr Jane Price

Marine ecology | Community ecology | Human impacts on marine systems | Long-term population changes

Dr Thomas Wernberg

Marine Ecology | Kelp forests | Seaweed Ecology | Impacts of climate change & climate variability | Marine range shifts | Marine invasive species | Marine biogeography & macroecology

Dr Michael Renton

Ecological & agricultural modelling | FSPM modelling

Evolution of resistance to herbicide and pesticide

Prediction & management of weeds, pests & diseases

Statistical modelling & analysis

Evolutionary ecology

Prof. Jacqui Batley

Plant pathogen interactions | Resistance

Genetics and genomics of Brassica crops

Pathogen population genomics | Avirulence

Dr Karen Bell

Molecular ecology | Biogeography

DNA barcoding | Plant-human interactions

Plant-animal interactions | Invasive plants

Assoc. Prof. Jon Evans

Behavioural ecology | Evolutionary biology

Fish biology and behaviour | sperm competition

Genital & gamete evolution | Mating systems

Dr Cyril Grueter

Primatology | Biological anthropolgy

Behavioural ecology | Socioecology

Social behaviour | Comparative analysis

Dr Jason Kennington

Genetics | Evolution | Population genetics

Conservation genetics

Dr. Jennifer Kelley

Behavioural ecology | Visual ecology

Freshwater fish ecology | Animal colouration

Predator-prey interactions

Dr. Giovanni Polverino

Animal behaviour | Personality | Robotics

Behavioural plasticity | Life history theory

Adaptation | Invasive species

Dr Michael Renton

Ecological & agricultural modelling | FSPM modelling

Evolution of resistance to herbicide and pesticide

Prediction & management of weeds, pests & diseases

Statistical modelling & analysis

Prof. Leigh Simmons

Evolutionary biology | Sperm competition

Behavioural ecology | Sexual selection

Entymology | Evolutionary psychology

Assoc. Prof. Joseph Tomkins

Allometry | Alternative reproduction tactics

Genetic variation | Inbreeding

Sexual selection | Threshold traits

Dr Rowan Lymbery

Multivariate selection & ejaculate traits

Evolutionary biology | Gamete-level mate choice

Sperm behaviour & function | Sperm chemotaxis

Dr Pauline Grierson

Terrestrial & aquatic ecosystem biogeochemistry

Ecohydrology | Ecological water requirements

Tree physiology & hydraulic architecture

Dendroclimatology | Fire ecology | Forest ecology

Community ecology

Prof. Gary Kendrick

- Recruitment ecology & spatial dynamics of seagrasses
- Ecology of marine macroalgae
- Habitat mapping
- Spatial population modelling
- Seagrass restoration

Dr Pieter Poot

- Conservation biology
- Plant physiology/ecology
- Ecophysiology of endangered plants
- Tree decline
- Root foraging strategies
- Soil amendments
- Shallow-soil plant communities
- Turf water use

Prof. Michael Douglas

- Tropical rivers
- Weed management
- Fire management
- Environmental flows
- Food webs
- Freshwater ecology

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Dr Matthew Fraser

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Dr Pauline Grierson

- Terrestrial & aquatic ecosystem biogeochemistry
- Ecohydrology
- Ecological water requirements
- Tree physiology & hydraulic architecture
- Dendroclimatology
- Fire ecology
- Forest ecology

Prof. Raphael Didham

- Community ecology
- Entomology
- Global environmental change
- Restoration ecology
- Habitat fragmentation

Dr Tim Langlois

- Ecology of marine crustaceans
- Experimental ecology
- Multivariate analysis
- Ecology of marine fishes

Prof. Laco Mucina

- Vegetation science
- Vegetation survey & mapping
- Plant systematics
- Molecular phylogenetics
- Evolutionary biology
- Plant functional ecology

Dr Jane Price

- Marine ecology
- Community ecology
- Human impacts on marine systems
- Long-term population changes

Dr Michael Renton

- Ecological & agricultural modelling
- FSPM modelling
- Evolution of resistance to herbicide and pesticide
- Prediction & management of weeds, pests & diseases
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Assoc. Prof. Samantha Setterfield

- Tropical ecology
- Invasive plant ecology
- Fire ecology
- Biodiversity conservation
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Dr Thomas Wernberg

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- Marine biogeography & macroecology

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Global change biology

Dr Matthew Fraser

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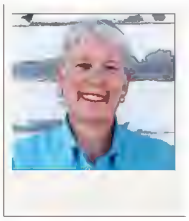

Prof. Jessica Meeuwig

- Fish and fisheries ecology
- Marine policy
- Predictive modelling
- Science outreach

Dr Nicola Mitchell

- Ecophysiology
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- Reproductive biology of vertebrates
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- Assisted colonisation
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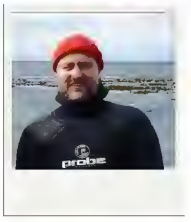
Dr Greg Skrzypek

- Biogeochemistry
- Stable isotope techniques
- Paleoclimatology & paleoenvironmental reconstruction
- Organic matter preservation in soil & peat



Dr Thomas Wernberg

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- Impacts of climate change & climate variability
- Marine range shifts
- Marine invasive species
- Marine biogeography & macroecology

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- Fishing impacts
- Fisheries conservation
- Marine conservation
- Gill oxygen limitation theory

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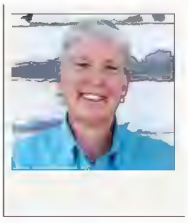

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Dr Tim Langlois

Ecology of marine crustaceans | Experimental ecology | Multivariate analysis | Ecology of marine fishes

Dr John Statton

Seagrass ecology | Recruitment ecology | Seagrass physiology | Seagrass seed biology | Aquaculture

Ecosystem restoration and intervention policy

Prof. Richard Hobbs

Restoration ecology | Old field restoration | Plant ecology & ecophysiology | Landcape ecology | Nature conservation & ecological restoration

Prof. Gary Kendrick

Recruitment ecology & spatial dynamics of seagrasses | Ecology of marine macroalgae | Habitat mapping | Spatial population modelling | Seagrass restoration

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Dr Michael Renton

Ecological & agricultural modelling | FSPM modelling | Evolution of resistance to herbicide and pesticide | Prediction & management of weeds, pests & diseases | Statistical modelling & analysis

Assoc. Prof. Erik Veneklaas

Carbon balance | Plant physiology/ecology | Plant functioning in natural, degraded and rehabilitated ecosystems | Nutrient use | Root exudates and P acquisition | Water use

Dr Greg Skrzypek

Biogeochemistry | Stable isotope techniques | Paleoclimatology & paleoenvironmental reconstruction | Organic matter preservation in soil & peat

Dr Leonie Valentine

Role of fauna, especially digging mammals on ecosystem function and restoration management | Fire ecology | Phytophthora dieback & tree health | Novel resource use by threatened fauna

Assoc. Prof. Samantha Setterfield

Tropical ecology | Invasive plant ecology | Fire ecology | Biodiversity conservation | Plant ecology

Dr Pauline Grierson

Terrestrial & aquatic ecosystem biogeochemistry

Ecohydrology | Ecological water requirements

Tree physiology & hydraulic architecture

Dendroclimatology | Fire ecology | Forest ecology

Dr Michael Craig

Conservation biology | Vertebrate ecology

Restoration ecology

Vertebrate sampling methods

Dr Hongtao Zhong

Restoration ecology | Soil science

Post-mining landscape restoration

Ecological conservation

Dr Neil Petit

Freshwater ecology | Ecosystem processes

Riparian vegetation | Plant ecology

Dr Shane Turner

Conservation biology | Seed biology

Seed ecology | Plant biotechnology

Cryogenic storage

Dr Alison O'Donnell

Fire ecology | Landscape ecology

Dendroclimatology and tree ring studies

Dr Miriam Munoz-Rojas

Arid Ecosystem conservation & restoration

Soil carbon dynamics | Fire impacts on soils

Ecological indicators & ecosystem functions

Dr Peter Golos

Restoration ecology | Seed ecology

Mine site restoration | Topsoil management

Plant-soil interactions

Dr Leah Beesley

Aquatic ecology | Environmental flows

Urban stream ecology | Freshwater fish ecology

Arid zone river ecology

Dr Cristina Estima Romalho

Urban ecology | Biodiversity conservation

Landscape ecology | Spatial ecology

Urban planning & design | Banksia woodland

Dr James O'Shea

Functional morphology | Evolutionary biology

Animal physiological control systems

Dr Catherine Car

Terrestrial arthropods | Invertebrate taxonomy

Australian invertebrate biogeography

Western Australian keeled millipedes

Conservation genetics

Dr Jason Kennington

Genetics | Evolution | Population genetics

Conservation genetics

Assoc. Prof. Joseph Tomkins

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Genetic variation | Inbreeding

Sexual selection | Threshold traits

Dr Nicola Mitchell

Ecophysiology | Conservation biology | Amphibians

Reproductive biology of vertebrates | Reptiles

Population viability assessment | Adaptation

Assisted colonisation | Climate change | Turtles

Dr Daniel White

Population & evolutionary genetics

Conservation genetics & wildlife ecology

Molecular ecology | Computer simulations

Assoc. Prof. Patrick Finnegan

Genetic manipulation of plants | Phosphate transport | Mitichondrial biogenesis & evolution | Plant physiology | Phosphate homeostasis

Dr Elizabeth Sinclair

Evolutionary biology | Population genetics | Phylogeography | Conservation | Seagrass genetics | Marsupial genetics

Dr Jing Li

Molecular biology | Protein chemistry | Plant transformation | Gene transfer technology

Professional Research Staff

Dr Huon Clark
Research Assistant

Ms Hanna Jabour Christ
Technical Assistant

Mr Louis Masarei
Technical Assistant

Ms Caroline Kerr
Research Officer

Mr Tim Morald
Research Officer

Ms Rebecca Campbell
Research Officer

Ms Heather Denham
Research Assistant

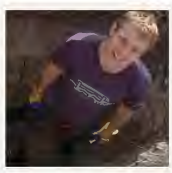
Ms Kate Bowler
Research Assistant

Mr Cameron Duggin
Research Technician

Mr Douglas Ford
Senior Technician

Mrs Anita Severn-Ellis
Research Officer

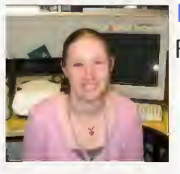
Ms Fiona Freestone
Research Assistant



Mr Patrick Hayes
Research Officer

Dr Ryan Doselli
Research Associate

Dr Jess Moniodis
Research Associate



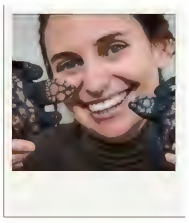
Ms Sherralee Lukehurst
Research Assistant

Ms Emma Daymond
Research Assistant

Ms Danica McCorquodale
Research Assistant

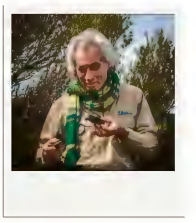
Adjunct & Honorary Staff

Dr Dale Roberts
Sen. Hon. Research Fellow



Dr Sabrina Fossette-Halot
Adj. Research Fellow

Prof. Mark Harvey
Adj. Professor

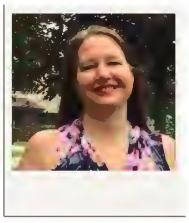


Dr Gerald Kuchling
Adj. Senior Lecturer

Dr Joel Huey
Adj. Research Fellow

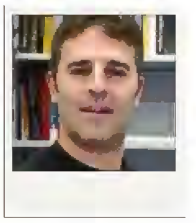
Dr Natasha LeBas
Adj. Research Fellow

Dr Emile van Lieshout
Adj. Research Fellow

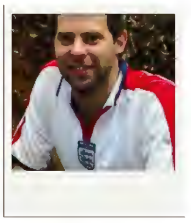


Dr Vicki Stokes
Adj. Research Fellow

Dr Nerida Wilson
Adj. Research Fellow



Dr Paco Garcia
Adj. Research Fellow



Dr Ben Turner
Adj. Assoc Professor

Prof. Craig Atkins
Sen. Hon. Research Fellow

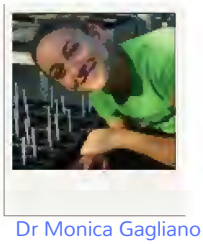
Dr Jason Stevens
Adj. Research Fellow

Dr Kevin Thiele
Adj.Research Fellow

Dr Marion Cambridge
Hon. Research Fellow

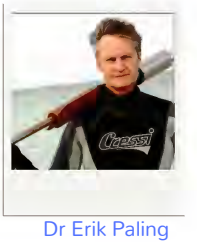
Dr Simon Allen
Adj. Research Fellow

Dr Mathew Vanderklift
Adj. Assoc. Professor



Dr Monica Gagliano
Adj. Research Fellow

Dr Stephen Newman
Adj. Assoc. Professor



Dr Erik Paling
Adj. Assoc. Professor

Dr James Stoddart
Adj. Assoc. Professor

Dr Volker Framenau
Adj. Research Fellow

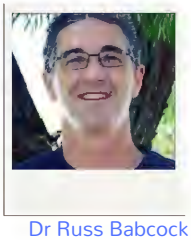
Dr Bruce Webber
Adj. Assoc. Professor

Dr Diana Walker
Sen. Hon. Research Fellow

Dr James Fourqurean
Adj. Professor

Dr John Scott
Adj. Professor

Dr Paul Erftemeijer
Adj. Research Fellow



Dr Russ Babcock
Adj. Assoc. Professor

Dr Tom Letessier
Adj. Research Fellow

Dr Daniel Pauly
Adj. Professor

Dr Jason How
Adj. Research Fellow

Dr Simon de Lestang
Adj. Research Fellow

Ms Angela Rossen
Hon. Research Fellow

Dr Sandor Bartha
Adj. Assoc. Professor

Dr Oliver Berry
Adj. Research Fellow

Dr Robert Black
Hon. Research Fellow

Dr. Margaret Byrne
Adj. Assoc. Professor

Dr Felicity Bradshaw
Hon. Research Assoc.

Dr Anne Brearley
Hon. Research Fellow

Prof. Donald Bradshaw
Sen. Hon. Research Fellow

Dr Donald Edward
Sen. Hon. Research Fellow

Dr Richard Evans
Hon. Research Fellow

Ms Yvette Hitchen
Adj. Research Fellow

Dr Kris Hulvey
Hon. Research Fellow

Dr Michael Johnson
Sen. Hon. Research Fellow

Dr Kieryn Kilminster
Adj. Research Fellow

Prof. Hans Lambers
Sen. Hon. Research Fellow

Dr. Bil Loneragan
Hon. Research Fellow

Dr Irek Malecki
Adj. Research Fellow

Dr Myles Menz
Adj. Research Fellow

Dr Melissa Millar
Adj. Research Fellow

Dr Brad Norman
Adj. Research Fellow

Prof. John Pate
Sen. Hon. Research Fellow

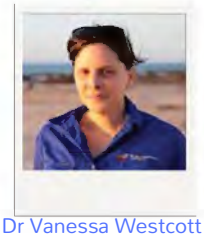
Dr Michael Perring
Adj. Research Fellow

Dr Zoe Richards
Adj. Research Fellow

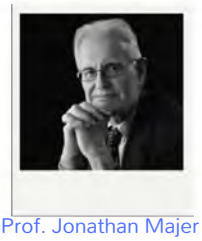
Prof. Alistar Robertson
Sen. Hon. Research Fellow

Mr. Michael Smith
Adj. Sen. Research Fellow

Dr Ruchira Somaweera
Adj. Research Fellow



Dr Vanessa Westcott
Adj. Research Fellow



Prof. Jonathan Majer
Adj. Professor

Prof. Peter Mawson
Adj. Professor

Prof. Mark Tibbett
Adj. Professor

Prof. Bill Humphreys
Adj. Professor

Prof. Andrew Storey
Adj. Assoc. Professor

Dr Lalith Suriyagoda
Adj. Research Fellow

Dr. Francois Teste
Adj. Research Fellow

Dr Stephen van Leeuwen
Adj. Assoc.Professor

Dr Kate Morgan
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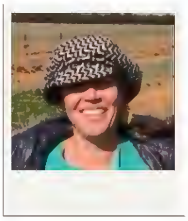

Dr. Elizabeth Kington
Adj. Research Fellow

Dr Suzanne Prober
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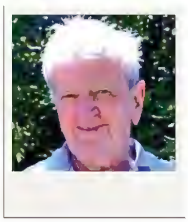
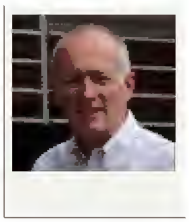


Prof. Jim Barrow
Hon Research. Fellow

Dr Mark Brundrett
Adj. Assoc. Professor

Prof. Jorge Casal
Adj. Professor



Prof. Mark Chase
Adj. Professor

Prof. David Coates
Adj. Professor

Prof. Michael Cramer
Adj. Professor

Dr. Ceceline Dang
Adj. Research. Fellow

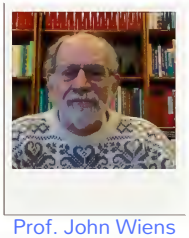
Prof. Peter Davies
Sen.Hon. Research. Fellow

Dr Shawan Dogramaci
Sen. Hon Research. Fellow

Dr Michael Fay
Adj. Professor

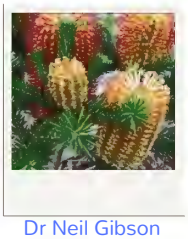
Dr John Raven
Adj. Professor

Prof. James Ridsdill-Smith
Adj. Professor



Prof. John Wiens
Adj. Professor

Prof. Jann Williams
Adj. Professor



Dr Neil Gibson
Adj. Assoc. Professor

Dr Christine Groom
Adj. Research. Fellow

Dr Euan Harvey
Adj. Assoc. Professor

Dr. Jika Klimesova
Adj. Research Fellow

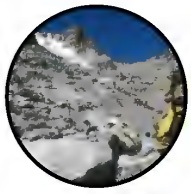
Dr Elizabeth Lowe
Hon Research. Fellow

Dr Barbara Main
Adj. Professor

POST GRADUATE RESEARCH STUDENTS

Mr Waseem Abbas
Coord Supervisor: Theo Evans
Better control of stored grain pests by improved knowledge of insect respiration

Ms Rachel Argus
Coord Supervisor: Theo Evans
Waterlogging and salinity tolerance in riparian and floodplain trees and shrubs in the Pilbara region



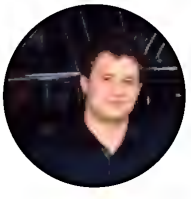
Ms Erica (David) Arora
Coord Supervisor: Kingsley Dixon
Ecosystem aerodynamics in restoration

Ms Amber Bateman
Coord Supervisor: Miriam Munoz-Rojas
Improving soil fertility and native plant establishment using soil amendments in post-mining rehabiliation

Ms Sahira Bell
Coord Supervisor: Thomas Wernberg
Regime shifts and tropicalisation of temperate reefs.

Mr Blair Bentley
Coord Supervisor: Nicki Mitchell
Predicting the effects of climate change on embryonic Flatbackand Green turtles in the Kimberley

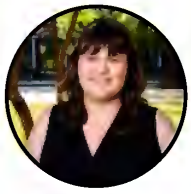
Mr Todd Bond
Coord Supervisor: Jane Prince
The interaction of fish and fisheries with subsea infrastructure



Mr Michael Brooker
Coord Supervisor: Thomas Wernberg
Recruitment and Distribution of Sub-Adult Western Rock Lobster

Ms Anna Abrhao
Coord Supervisor: Hans Lambers
Mineral nutrition strategies along soil gradients

Ms Nahlah Alsuwaiyan
Coord Supervisor: Thomas Wernberg
Seaweed reproduction in a warming ocean



Ms Bronwyn Ayre
Coord Supervisor: Siegfried Krauss
Pollination of the Red and Green Kangaroo Paw

Ms Gabrielle Beca
Coord Supervisor: Richard Hobbs
Restoring degraded landscapes – The role of digging mammals on seedling recruitment

Ms Charlotte Birkmanis
Coord Supervisor: Ana Martins Sequeira
Spatio-temporal distribution of Indo-Pacific marine predators

Mr Nestor Bosch Guerra
Coord Supervisor: Thomas Wernberg
Changes in functional diversity of reef fishes within an ocean warming hotspot: implications for temperate reef resilience

Ms Tabitha Rudin-Bitterli
Principal Supervisor: Nicki Mitchell
Adaptive potential of terrestrial-breeding amphibians in a drying climate

Ms Tegan Davies
Coord Supervisor: Pauline Grierson
Carbon dynamics in mangrove sediments of northern and western Australia

Ms Marjorie Cattaneo Fernandes
Coord Supervisor: Jessica Meeuwig
The status of pelagic fish and shark assemblages in the Palau and Chagos Marine Protected Areas

Ms Anna Cresswell
Coord Supervisor: Tim Langlois
Disturbance dynamics in coral reef ecosystems

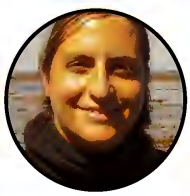
Ms Harriet Davies
Coord Supervisor: Gary Kendrick
Planning for Change in Island Seascapes

Ms Patricia de Britto Costa
Coord Supervisor: Hans Lambers
Strategies to use and acquire nutrients effectively in species from nutrient-impoverished habitats

Mr Peter Derbyshire
Coord Supervisor: James O'Shea
Cardiac Innervation Patterns in Reptile

Ms Wenli Ding
Coord Supervisor: Hans Lambers
Is the distribution of calcium and phosphorus between leaf cell types the key reason why Lupinus species respond differently to soil pH?

Ms Hannah Etchells
Coord Supervisor: Pauline Grierson
Ecological impacts of catastrophic wildfire in southwestern Australia



Ms Ana Giraldo Ospina
Coord Supervisor: Gary Kendrick
Can upper-shelf reefs act as refugia for sessile communities under extreme climatic events?

Ms Roberta Dayrell de Lima Campos
Coord Supervisor: Hans Lambers
Natural regeneration in nutrient-impoverished landscapes

Ms Dawn Dickinson
Coord Supervisor: Richard Hobbs
GREENspace Perth Study

Mr Jon Paul Emery
Coord Supervisor: Nicki Mitchell
Maximizing conservation outcomes for the blue-tailed skink and Lister's gecko

Mr Scott Evans
Coord Supervisor: Renae Hovey
Understanding fishery recruitment and essential benthic habitats for prawn fisheries

Ms Zoe Hamilton
Coord Supervisor: Michael Johnston
Patterns and processes of evolution in Rhagada from the Pilbara region, WA

Ms Emily Hoffmann
Coord Supervisor: Nicki Mitchell
Improving conservation outcomes for Critically Endangered white-bellied frogs

Mr Md Mohitul Hossain
Coord Supervisor: Pieter Poot
Eco-physiology of canker-affected Corymbia calophylla (marri): interactive effects of pathogen and abiotic stress factors

Ms Ndeinekela Haimbili
Coord Supervisor: Richard Hobbs
Conservation and restoration of degraded land in semi-arid Namibia in the context of climate change

Mr Patrick Hayes
Coord Supervisor: Hans Lambers
Does calcium toxicity explain the absence of most Proteaceae from calcareous habitats

Mr Tsz Ho
Coord Supervisor: Michael Douglas
The trophic ecology of Australian freshwater fish

Ms Kathryn Holmes
Coord Supervisor: Mandy Ridley
Ontogeny of male alliance formation in wild bottlenose dolphins

Mr Jordan Iles
Coord Supervisor: Pauline Grierson
Biogeochemical cycling of phosphorus and organic matter within arid freshwater ecosystems

Ms Anna-Sheree Krige
Coord Supervisor: Peta Clode
Identifying invertebrate vector candidates of Australian wildlife trypanosomes

Ms Kara Layton
Coord Supervisor: Nerida Wilson
Molecular systematics and evolution of marine gastropods in Australia and Antarctica

Ms Emily Lester
Coord Supervisor: Tim Langlois
How can the antipredator behaviours of reef fish help determine the ecological role of sharks in coral reefs

Ms Paige Maroni
Coord Supervisor: Jason Kennington
The evolution and ecology of Antarctic sea slugs

Ms Caroline Mather
Coord Supervisor: Grzegorz Skrzypek
The geochemistry, distribution and formation of calcretes

Ms Albina Ilyasova
Coord Supervisor: Patrick Finnegan
The effect of soil phosphorus status on leaf development in Hakea prostrata in its native habitat

Mr Andrew Johnson
Coord Supervisor: Gary Kendrick
The influence of unexplored biota on seedling recruitment of aquatic vegetation

Ms Olga Kildisheva
Coord Supervisor: Kingsley Dixon
Seed-based Restoration in Cold and Hot Deserts

Mr Thirumurugen Kuppusamy
Coord Supervisor: Hans Lambers
Delayed greening in Hakea prostrata

Ms Sarah Leeson
Coord Supervisor: Jason Kennington
Population genetics of Australia's introduced dung beetles

Mr Paul Macintyre
Coord Supervisor: Ladislav Mucina
Vegetation mapping of the kwongan

Ms Belinda Martin
Coord Supervisor: Gary Kendrick
The seagrass rhizosphere

Mr Jack McElhinney
Coord Supervisor: Jessica Meeuwig
Climate driven oxygen stress in pelagic fishes along a rapidly warming coast

Mr Bahram Mirfakhraei
Coord Supervisor: Siegfried Krauss
Seed sourcing for plant restoration under changing environmental conditions.

Ms Jennifer Middleton
Coord Supervisor: Pauline Grierson
Nutrient pathways and processing in urban streams

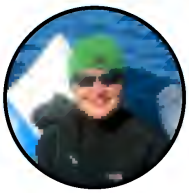
Mr Yannick Mulders
Coord Supervisor: Thomas Wernberg
Ecological functions and functional redundancy between different habitat-forming seaweeds.

Ms Lauren Peel
Coord Supervisor: Jane Prince
Population dynamics and ecology of the reef manta within the D'Arros Marine Protected Area

Mr Albert Pessarradona Silvestre
Coord Supervisor: Thomas Wernberg
Facilitating the recovery of kelp forests and increasing their resilience to climate change

Ms Juliana Pille Arnold
Coord Supervisor: Raphael Didham
Plant-pollinator networks in degraded landscapes

Mr Malcolm Soh
Coord Supervisor: Nicki Mitchell
Effects of environmental change on montane communities



Ms Sandra Straub
Coord Supervisor: Thomas Wernberg
Effects of marine heatwaves on canopy forming seaweeds and marine forests

Ms Siobhan Sullivan
Coord Supervisor: Erik Veneklaas
Post-restoration drought shapes plant communities on iron ore mine waste

Ms Jessica Stubbs
Coord Supervisor: Nicki Mitchell
Foraging ecology and energetics of Ningaloo green turtle

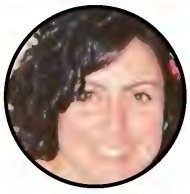
Mr Jonathan Mitchell
Coord Supervisor: Tim Langlois
Investigating the impact of shark depredation in WA recreational fisheries

Ms Bryony Palmer
Coord Supervisor: Richard Hobbs
Reintroductions of ecosystem engineers

Mr Stan Mastrantonis
Coord Supervisor: Richard Hobbs
Digging up the dirt: quantifying the effect of eastern barred bandicoots on soil properties

Ms Camilla Piggott
Coord Supervisor: Gary Kendrick
Fish recruitment in coastal habitats of north-west Australia.

Mr Rodrigo Pires
Coord Supervisor: Erik Veneklaas
Drought and heat stress effects in a urban bushland remnant



Ms Fiamma Riverera
Coord Supervisor: Ladislav Mucina
Temporal patterns in the floristics and functional traits of kwongan vegetation restored after mining

Ms Erika Roper
Coord Supervisor: Richard Hobbs
The adaptation of the forest red-tailed black-cockatoo to the urban environment

Ms Laura Skates
Coord Supervisor: Kingsley Dixon
How hungry are carnivorous plants?

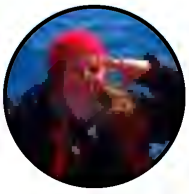
Ms Camilla Soravia
Coord Supervisor: Amanda Ridley
Heat stress and cognition in a wild animals

Mr Chris Thompson
Coord Supervisor: Jessica Meeuwig
Resetting the Baseline: the ecology of remote pelagic fish assemblages

Mr David Tickler
Coord Supervisor: Jessica Meeuwig
Spatial ecology of tropical reef sharks

Ms Kendra Travaille
Coord Supervisor: Gary Kendrick
The effects of social-ecological context on improvement project outcomes in two Caribbean spiny lobster fisheries

Mr James Tsakalos
Coord Supervisor: Ladislav Mucina
Kwongan shrubland community: Driven by habitat heterogeneity and functional trait variability?



Ms Chenae Tuckett
Coord Supervisor: Thomas Wernberg
Climate variation and population ecology of high latitude corals.

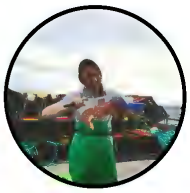
Mr Joseph Turner
Coord Supervisor: Gary Kendrick
Ningaloo mesophotic reefs: characterising the communities and assessing connectivity

Mr Sean van Elden
Coord Supervisor: Jessica Meeuwig
Rigs-to-Reefs ecology: Offshore oil and gas platforms as novel ecosystems

Ms Stephanie Venables
Coord Supervisor: Jason Kennington
Population genetics of reef manta rays, Manta alfredi

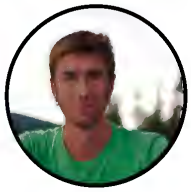
Ms Helen White
Coord Supervisor: Raphael Didham
Restoring today's riparian communities for tomorrow's climate

Ms Melinda Trudgen
Coord Supervisor: Hans Lambers
Street trees and climate change: the invasive potential of rosewood



Ms Emma-Jade Tuffley
Coord Supervisor: Tim Langlois
Determining variation in catchabiity of the western rock lobster

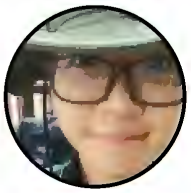
Ms Linette Umbrello
Coord Supervisor: Raphael Didham
Genetics and evolution of Australian desert mammals



Mr Daniel van Hees
Coord Supervisor: Gary Kendrick
Chemical physiology of phenolic compounds in brown seaweeds

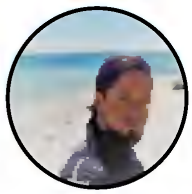
Ms Sophie Vranken
Coord Supervisor: Thomas Wernberg
Genetic patterns of Australian seaweed forests in changing environments

Ms Susan Whitely
Coord Supervisor: Kingsley Dixon
Ex situ conservation of the threatened Androcalva perlaria (Malvaceae s.l.) and implications for in situ restoration.



Ms Shilu Zheng
Coord Supervisor: Raphael Didham
Intraspecific plant traits and herbivory in fragmented habitats

Mr Timothy Hammer
Coord Supervisor: Ladislav Mucina
Drivers of diversification in Ptilotus (Mulla Mulla)



Mr Salvador Zarco Perello
Coord Supervisor: Thomas Wernberg
Persistence of tropical herbivorous fish in temperate ecosystems.

POST GRADUATE COMPLETIONS

Dr Genevieve Hayes
Coord Supervisor: Harriet Mills
Ecology of the kaluta in the Pilbara region of WA

Dr Simon Kilbane
Coord Supervisor: Richard Hobbs
Green infrastructure: Planning a national green network for Australia

Dr Karl Gruber Gonzalez
Coord Supervisor: Raphael Didham
Phyogeography of trapdoor spiders using genes and genomes

Dr Bryony Wilkinson
Coord Supervisor: Hans Lambers
Chlorotic decline of eucalypts in urban parklands

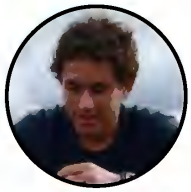
Dr Nicolas Nagloo
Coord Supervisor: Nathan Hart
Visual ecology of Australian reptiles: Retinal organisation and colour vision

Dr Tiffany Simpson
Coord Supervisor: Thomas Wernberg
Biodiversity, biosecurity and management of sessile invertebrate assemblages in Western Australia

Dr Luciana Cerqueira Ferreira
Coord Supervisor: Jessica Meeuwig
Spatial ecology of a top-order marine predator, the tiger shark

Dr Sophie Arnall
Coord Supervisor: Nicki Mitchell
Assisted migration of the Western Swamp Turtle under climate change

Dr Peter Yeeles
Coord Supervisor: Richard Hobbs
Ant diversity and performance of ecological function in a restoration context



Dr Caio Guilherme Pereira
Coord Supervisor: Hans Lambers
Genetic mechanisms governing the cellular compartmentation of calcium in Proteaceae species

Dr Sebastian Lamoureux
Coord Supervisor: Erik Veneklaas
Mining for water: Plant-soil interactions on restored mine substrates

Dr Md Asaduzzaman Prodhan
Coord Supervisor: Patrick Finnegan
Tight control of nitrogen and sulfur assimilation is an adaptive mechanism for Hakea prostrata

Dr Kenny Png
Coord Supervisor: Hans Lambers
Symbiotic nitrogen fixation during long-term ecosystem development: environmental constraints and ecological consequences

Dr Brian Strehlow
Coord Supervisor: Jessica Meeuwig
The effects of sediments on marine sponges

HONOURS AND MASTERS STUDENTS

Surname	Given Names	Specialisation	Primary supervisor	Supervisor 2	Supervisor 3
Bignell	Colby James	Marine Science	Jan Hemmi	Julian Partridge	Anna-Lee Jessop
Bird	Toby John	Conservation Biology	Patrick Finnegan	Kosala Ranathunge	
Bossie	Andrew Paul	Marine Biology	Jane Prince	Milly Piggott	
Brown	Natasha Anne	Zoology	Peter mawson	Miriam Sullivan	Phil Withers
Buck	Georgie Lee	Botany	Pauline Grierson	Joe Dortch (archaeology)	
Byrne	Dennis Patrick	Botany	Karen Bell	Bruce Webber	Pieter Poot
Cummins	Deanne Louise	Zoology	Jason Kennington	Nicki Mitchell	
Goldman	Emma June	Zoology	Leigh Simmons	Nic Tartarnic	
Gooding	Haylee Jean	Botany	Hans Lambers	Pat Finnegan	
Gray	Friday Anne	Conservation Biology	Pieter Poot	Anne Cochrane	
Haddon	Ashleigh Claire	Marine Biology	Jane Prince	Milly Piggott	
Hammond	Matthew	Marine Biology	Di McLean	Renae Hovey	Todd Bond
Ing	Christina Mary	Plant Conservation Biolo	Erik Veneklaas	Margaret Byrne/Siegy Kraus	Steve Hopper
Kerr	Rose Joan Zolnier	Botany	Shane Turner	Jason Stevens	
Keymer	Brock	Marine Science	Tim Langlois	Thomas Wernberg	Yannick Mulders
Killerby-Smith	Savannah Clare	Conservation Biology			
Lambert	Kelsie Zena	Botany	Hans Lambers	David Coates	Mark Brundrett
McKiever	Tullem Selby	Marine Science	Thomas Wernberg	Chenae Tuckett	
Moore	Bronte Lauren	Marine Biology	Stephanie king	Mandy Ridley	
Moses	Michael Kenneth	Marine Biology	Jane Prince	TBA	
Murley	Matilda Ella	Marine Biology	Jane Prince	Ann Grand	
Nicholson	Jaylen David	Botany	Pauline Grierson	Elizabeth McLean	Greg Skrzypek
Nilsson	Kristen Karri	Zoology	Kym Ottewell	Margaret Byrne	Jason Kennington
Press	Elliot William	Zoology	Clelia Gasparini	Jon Evans	
Ristanovich	Riss	Botany	Michael Renton	Pauline Grierson	Alison O'Donnell
Ryan	Catherine Mary	Plant Conservation Biolo	Leonie Valentine	Richard Hobbs	
Sandover	Jasmine Moe	Marine Biology	Jane Prince	Jordan Goetze	
Sewell	Isobel Barbara	Marine Biology	Julian Partridge	Craig Lawrence	Luke Wheat
Silvestri	Annabel Jane	Conservation Biology	Amanda Ridley	Kate Morgan	
Smith	Keelin Jade	Botany	Kelly Shepherd	Kevin Thiele	Pauline Grierson
Speechley	Elizabeth Marie	Zoology	Jon Evans	Clelia Gasparini	
Thorn	Sian Marama	Zoology	Richard Hobbs	Leonie Valentine	
Walsh	Sarah Louise	Zoology	Amanda Ridley	Kate Morgan	Simon Townsend
White	Katie Alicia	Botany	Bruce Webber	Karen Bell	Wolfgang Lewandrowski
Windsor	Thomas Henry	Botany	Pauline Grierson	Greg Skrzypek	Neil Pettit

UNDERGRADUATE TEACHING

UNIT CODE	UNIT NAME	UNIT COORDINATOR/S
ANIM2207	*Animal Function and Structure*	Dr James O'Shea
ANIM2209	*Field Studies in Zoology*	Dr Jason Kennington
ANIM3361	*Animal Populations*	Dr Jane Prince
ANIM3363	*Environmental Physiology*	Professor Phil Withers
ANIM3365	*Behavioural Ecology*	Associate Professor Jonathan Evans and Associate Professor Joe Tomkins
BIOL1130	*Frontiers in Biology*	Professor Guijun Yan and Dr Jan Hemmi
BIOL1131	*Plant and Animal Biology*	Dr Nicola Mitchell and Professor Timothy Colmer
BIOL2204	*Marine Biology*	Dr Jane Prince and Dr Thomas Wernberg
BIOL2261	*Conservation Biology*	Dr Pieter Poot and Dr Nicola Mitchell
BIOL3360	*Saving Endangered Species*	Dr Barbara Cook and Professor Stephen Hopper
BIOL4404	*Experimental Zoology*	Dr James O'Shea
BIOL4405	*Invertebrate Zoology*	Professor Phil Withers
BIOL4407	*Marine Conservation and Fisheries Management*	Dr Tim Langlois
BIOL4408	*Marine Ecology*	Dr Jane Prince
BIOL5501	*Origins, Evolution and Conservation of Biodiversity*	Adjunct Professor David Coates
ENVT2221	*Global Climate Change and Biodiversity*	Dr Pieter Poot
ENVT2250	*Ecology*	Associate Professor Erik Veneklaas and Professor Raphael Didham
ENVT3363	*Ecological Processes*	Dr Grzegorz Skrzypek
ENVT5509	*Global Ecological Challenges*	Dr Grzegorz Skrzypek
ENVT5512	*Ecosystem Biogeochemistry*	Dr Pauline Grierson
ENVT5513	*Decision Strategies for Biodiversity Conservation*	Samantha Setterfield
PLNT2201	*Plants in Action*	Professor Guijun Yan
PLNT2204	*Plant Diversity and Evolution*	Dr Kevin Thiele
PLNT3301	*Plant Physiological Ecology*	Associate Professor Erik Veneklaas
PLNT3306	*Australian Vegetation*	Dr Pauline Grierson
SCIE2204	*Marine Systems*	Dr Thomas Wernberg
SCIE3304	*Field Techniques in Marine Science*	Dr Renae Hovey (Plant Biology), Dr Jane Prince (Animal Biology) and Dr Julien Bourget (Earth and Environment)
SCIE5505	*Global Change and the Marine Environment*	Dr Thomas Wernberg
SCOM1101	*Communicating Science*	Dr Miriam Sullivan and Dr Patrick Finnegan
SCOM3320	*Communication Strategies for Change*	Dr Ann Grand

PUBLICATIONS

Engesser, S Ridley, A Townsend, S. (2017) Element repetition rates encode functionally distinct information in pied babbler 'clucks' and 'purrs'. Animal Cognition

Rodríguez, J., Fernández-Gracia, J., Thums, M., Hindell, M., Sequeira, A., Meekan, M., Costa, D., Guinet, C., Harcourt, R., McMahon, C., Muelbert, M., Duarte, C., Eguíluz, V.(2017) Big data analyses reveal patterns and drivers of the movements of southern elephant seals. Scientific Reports

Oh, B Sequeira, A Meekan, M Ruppert, J Meeuwig, J. (2017) The Ecology of Human Mobility. Trends In Ecology & Evolution

Bourguignon T, Dahlsjö CAL, Jacquemin J, Gang L, Wijedasa LS, Evans TA (2017) Ant and termite communities in isolated and continuous forest fragments in Singapore. Insectes Sociaux 64, 505-514

Iqbal N, Wijedasa LS, Evans TA (2017) Bait station preferences in two Macrotermes species. Journal Of Pest Science 90, 217–225

Oberst S, Bann G, Lai JCS, Evans TA (2017) Cryptic termites avoid predatory ants by eavesdropping on vibrational cues from their footsteps. Ecology Letters 20, 212-221

Zhang M, Evans TA (2017) Determining urban exploiter status of a termite using genetic analysis. Urban Ecosystems 20, 535–545

Lee T, Evans TA, Cameron SC, Hochuli D, Ho S, Lo N (2017) Ecological diversification of the Australian Coptotermes termites and the evolution of mound building. Journal Of Biogeography 44, 1405-1417

Lee T, Evans TA, Cameron SL, Ho S, Namyatova A, Lo N (2017) A review of the status of Coptotermes (Isoptera : Rhinotermitidae) species in Australia with the description of two new small termite species from Northern and Eastern Australia. Invertebrate Systematics 31, 180-190

Bourguignon T, Lo N, Sobotnik J, Ho SYW, Iqbal N, Coissac E, Lee M, Jendryka MM, Sillam-Dusses D, Krizkova B, Roisin Y, Evans TA (2017) Mitochondrial Phylogenomics Resolves the Global Spread of Higher Termites, Ecosystem Engineers of the Tropics Molecular Biology and Evolution 43, 589-597

Arab DDA, Namyatova A, Evans TA, Cameron SL, Yeates DK, Ho SYW, Lo N (2017) Parallel evolution of mound-building and grass-feeding in Australian nasute termites. Biology Letters 13: 20160665

Wijedasa LS, Jauhiainen J, Könönen M, et. al.(2017) Denial of long-term issues with agriculture on tropical peatlands will have devastating consequences. Global Change Biology 23, 977–982

Bourguignon T, Lo N, Dietrich C, Šobotník J, Sidek S, Roisin Y, Brune A, Evans TA (2017) Rampant host-switching shaped the termite gut microbiome. Current Biology

Bourguignon, Tang Q, Ho SYW, Juna F, Wang Z, Arab DA, Cameron SL, Walker J, Rentz D, Evans TA, Lo N (2017) Transoceanic dispersal and plate tectonics shaped global cockroach distributions: evidence from mitochondrial phylogenomics. Molecular Biology and Evolution

Iqbal, N Evans, T. (2017) Evaluation of fipronil and imidacloprid as bait active ingredients against fungus-growing termites (Blattodea: Termitidae: Macrotermitinae). Bulletin Of Entomological Research

Griffiths HM, Ashton LA, Walker AE, Hasan F, Evans TA, Eggleton P, Parr CL (2017) Quantifying the role of ants in resource removal in Bornean tropical rainforests. Journal of Animal Ecology

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Wu, L., Si, X., Didham, R., Ge, D., Ding, P. (2017). Dispersal modality determines the relative partitioning of beta diversity in spider assemblages on subtropical land-bridge islands. Journal Of Biogeography.

Didham, R., Leather, S., Basset, Y. (2017). Don't be a zero-sum reviewer. Insect Conservation And Diversity. Tomlinson, S Dixon, K Didham, R Bradshaw, S. (2017). Landscape context alters cost of living in honeybee metabolism and feeding. Proceedings of the Royal Society of London, Series B.

Dobert, T Webber, B Sugau, J Dickinson, K Didham, R. (2017). Logging increases the functional and phylogenetic dispersion of understorey plant communities in tropical lowland rain forest. Journal Of Ecology.

Peralta, G Frost, C Didham, R Rand, T Tylianakis, J. (2017). Non-random food-web assembly at habitat edges increases connectivity and functional redundancy. Ecology.

Laliberté, E., Kardol, P., Didham, R., Teste, F., Turner, B., Wardle, D. (2017). Soil fertility shapes belowground food webs across a regional climate gradient. Ecology Letters.

Ruffell, J., Clout, M., Didham, R. (2017). The matrix matters, but how should we manage it? Estimating the amount of high-quality matrix required to maintain biodiversity in fragmented landscapes. Ecography.

Yeeles, P Lach, L Hobbs, R Van Wees, M Didham, R. (2017). Woody plant richness does not influence invertebrate community reassembly trajectories in a tree diversity experiment. Ecology.

Rossiter-Rachor, N., Setterfield, S., Hutley, L., McMaster, D., Schmidt, S., Douglas, M. (2017). Invasive Andropogon gayanus (Gamba grass) alters litter decomposition and nitrogen fluxes in an Australian tropical savanna. Scientific Reports.

Leishman, M Gallagher, R Catford, J Grice, T Morgan, J Setterfield, S. (2017). Invasive plants and pathogens in Australia. Australian Vegetation.

Arcoverde, G., Andersen, A., Setterfield, S. (2017). Is livestock grazing compatible with biodiversity conservation? Impacts on savanna ant communities in the Australian seasonal tropics. Biodiversity And Conservation.

Pecl, G., Araujo, M., Bell, J., et. al. (2017). Biodiversity redistribution under climate change: Impacts on ecosystems and human well-being. Science.

Bennett, S Wernberg, T de Bettignies, T. (2017). Bubble curtains: Herbivore exclusion devices for ecology and restoration of marine ecosystems?. Frontiers in Marine Science.

Tuckett, C Wernberg, T Fromont, J Wernberg, T. (2017). Expansion of corals on temperate reefs: direct and indirect effects of marine heatwaves. Coral Reefs. Coleman, M., Wernberg, T. (2017). Forgotten underwater forests: The key role of fucoids on Australian temperate reefs. Ecology And Evolution.

Simpson, T., Smale, D., McDonald, J., Wernberg, T. (2017). Large scale variability in the structure of sessile invertebrate assemblages in artificial habitats reveals the importance of local-scale processes. Journal Of Experimental Marine Biology And Ecology.

Bonebreak et al (2017). Managing consequences of climate-driven species redistribution requires integration of ecology, conservation and social science. Biological Reviews.

Franco, J Wernberg, T Bertocci, I Jacinto, D Maranhão, P Pereira, T Martinez, B Arenas, F Sousa-Pinto, I Tuya, F. (2017). Modulation of different kelp life stages by herbivory: compensatory growth versus population decimation. Marine Biology.

Schlegel, R Oliver, E Wernberg, T Smit, A. (2017). Nearshore and offshore co-occurrence of marine heatwaves and cold-spells. Progress In Oceanography.

van Hees, D Olsen, Y Wernberg, T Van Alstyne, K Kendrick, G. (2017). Phenolic concentrations of brown seaweeds and relationships to nearshore environmental gradients in Western Australia. Marine Biology.

Smale, D Wernberg, T Vanderklift, M. (2017). Regional-scale variability in the response of benthic macroinvertebrate assemblages to a marine heatwave. Marine Ecology Progress Series.

Zarco-Perello, S Wernberg, T Langlois, T Vanderklift, M. (2017). Tropicalization strengthens consumer pressure on habitat-forming seaweeds.. Scientific Reports.

Collins, D., Langlois, T., Bond, T., Holmes, T., Harvey, E., Fisher, R., McLean, D. (2017). A novel stereo-video method to investigate fish–habitat relationships. Methods In Ecology And Evolution.

Braccini, M., Rensing, K., Langlois, T., McAuley, R. (2017). Acoustic monitoring reveals the broad-scale movements of commercially important sharks. Marine Ecology Progress Series.

Abesamis, R Langlois, T Birt, M Thillainath, E Bucol, A Arceo, H Russ, G. (2017). Benthic habitat and fish assemblage structure from shallow to mesophotic depths in a storm-impacted marine protected area. Coral Reefs.

Coghlan, A., McLean, D., Harvey, E., Langlois, T. (2017). Does fish behaviour bias abundance and length information collected by baited underwater video?. Journal Of Experimental Marine Biology And Ecology.

Goetze, J Januchowski-Hartley, F Claudet, J Langlois, T Wilson, S Jupiter, S. (2017). Fish wariness is a more sensitive indicator to changes in fishing pressure than abundance, length or biomass. Ecological Applications.

Zarco-Perello, S Wernberg, T Langlois, T Vanderklift, M. (2017). Tropicalization strengthens consumer pressure on habitat-forming seaweeds.. Scientific Reports.

McLean, D Partridge, J Bond, T Birt, M Bornt, K Langlois, T. (2017). Using industry ROV videos to assess fish associations with subsea pipelines. Continental Shelf Research.

Langlois, T. J., L. M. Bellchambers, R. Fisher, G. R. Shiell, J. Goetze, L. Fullwood, S. N. Evans, N. Konzewitsch, E. S. Harvey, and M. B. Pember (2017). Investigating ecosystem processes using targeted fisheries closures: can small-bodied invertivore fish be used as indicators for the effects of western rock lobster fishing?. Marine and Freshwater Research.

Invited & contributed presentations

Amanda Ridley

Factors affecting individual participation during intergroup interactions in mountain gorillas (Gorilla beringei beringei) Melanie O. Mirville, Amanda R. Ridley, J.P.M. Samedi, Veronica Vecellio, Felix Ndagijimana, Tara S. Stoinski, Cyril C. Grueter. Presented at the joint meeting of the International Mammalogical Congress in Perth, Australia at the Convention Centre, July 2017.

2017: Behaviour 2017 Conference, Lisbon. "Cognitive performance is linked to group size and affects fitness in Australian magpies". Ben Ashton, Amanda Ridley, Alex Thornton

Bourne A, Cunningham SJ, McKechnie AE, Ridley AR, Karasov W. July 2017. "Measuring metabolic rates with non-invasive doubly-labelled water". Zoological Society of Southern Africa Conference, Pretoria, South Africa

Plenary: Ridley, A.R. Is it possible to resolve the conundrum of cooperative breeding behaviour? 2017 ASSAB conference, Melbourne.

Erik Veneklaas

Soil depth constrains restoration options in drought-prone habitats Society for Ecological Restoration World Conference, Brazil.

Water availability in natural and restored semi-arid environments. Universidad Minas Gerais, Brazil.

Workshop Plant functional traits. Manaus, Brazil.

Greg Skrzypek

EGU General Assembly 2017

Jacqueline Batley

10/2017: Plenary lecture: Agricultural Genomics 2017: Functional Genomics towards Green Crops for Sustainable Agriculture, Wuhan, China

09/2017: Symposium talk: COMBIO, Adelaide, Australia

07/2017: Keynote address: Genetics Society of Australasia (GSA) and the NZ Society for Biochemistry and Molecular Biology (NZSBMB) Conference, Dunedin, New Zealand

03/2017: Keynote address: Molecular Markers 2017: 4th International Symposium on Molecular Markers in Horticulture, Napier, New Zealand

02/2017: Lead lecture: Enhancing Oilseed Brassica Production through Climate Smart Technologies: 3rd National Brassica Conference, New Delhi, India

Jon Evans

Society for Reproductive Biology annual meeting, Perth (invited to participate in symposium)

Invited departmental speaker, University of Sydney

Julian Partridge

McLean DL, Bond T, Partridge JC, Gourvenec S, Langlois TJ (2017) Assessing value of subsea infrastructure for fish and fisheries: informing decommissioning options. 10th Annual Indo-Pacific Fish Conference. Papeete, Tahiti.

Karen Bell

School of Biological Sciences seminar series, University of Western Australia, August 2017.

Archaeology seminar series, University of Western Australia, August 2017.

King's Park seminar series. May 2017.

7th International Barcode of Life Meeting, South Africa, November 2017, "Quantitative assessment of pollen DNA metabarcoding with constructed species mixtures"

Laco Mucina

Mucina, L.: How to be a biome. 60th Annual Symposium of the International Association for Vegetation Science on 'Vegetation Patterns in Natutral and Cultural Landscapes', 20-24 June 2017, Palermo, Italy.

Michael Douglas

Douglas, M.M and Jackson, S.J (2017) Food for Thought: Water requirements and food production in northern Australia. International Riversymposium, Brisbane, Australia. (invited)

Douglas, M.M and Jackson, S.J (2017) Socio-hydrology and water resources management in northern Australia. European Geosciences Union General Assembly, Vienna, Austria. (invited)

Raphael Didham

Toward a mechanistic understanding of human land-use effects on biodiversity and ecosystem functioning. Invited speaker at Xishuangbanna Tropical Botanical Gardens, Yunnan, China, 13 June 2017.

Building functional outcomes from pollinator monitoring networks. Invited speaker at the 2nd National Pollinator Insect Forum, Institute of Zoology, Chinese Academy of Sciences, Beijing, China, 28 May 2017.

Samantha Setterfield

Queensland Weeds Conference (Plenary)

Cape York Association of Local Government

Thomas Wernberg

2017 XII BIOINC Congress on biofouling and benthic ecology, Arraial do Cabo, Brazil, Aug 1-4 2017. Invited plenary (fully funded). Declined due to other commitments.

2017 30th Congress of the Phycological Society of Southern Africa, De Hoop South Africa, Jan 2017. Kelp forests under siege: hot, heatwaves and herbivores. Invited keynote (fully funded).

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Editorial Board, Global Geobotany, Spanish Phytosociological Association, ES

Editorial Board, International Journal of Geobotanical Research, Spanish Phytosociological Association (AEFA), Madrid, ES
Scientific Editor, Geobotanical Studies (Book Series), Springer; Member PeerJ, London, UK;

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Associate Editor, Ocean

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Prof Richard Corlett (Chinese Academy of Sciences)
Dr Alice Hughes (Chinese Academy of Sciences)
Prof Ping Ding (Zhejiang University)
Prof Mingjian Yu (Zhejiang University)
Prof Robert Holt (University of Florida)
Prof Marcel Holyoak (UC Davis)
Dr Guang Hu (Zhejiang University of Science and Technology)
Dr Lin Jiang (Georgia Institute of Technology)
Prof William Laurance (James Cook University)
Prof Stuart Pimm (Duke University)
Prof Scott Robinson (University of Florida)
Dr Sabina Russo (University of Nebraska)
Prof David Wilcove (Princeton University)
Dr Lukas Cizek (University of South Bohemia)
Dr Philippe Cuénoud (Muséum d'histoire naturelle de la Ville de Genève)
Dr Vojtech Novotny (University of South Bohemia)
Dr Frode Ødegaard (Norwegian Institute for Nature Research)
Dr Tomas Roslin (Swedish University of Agricultural Sciences)
Dr Alexey Tishechkin (National Museum of Natural History, Washington)
Dr Jürgen Schmidl (University of Erlangen-Nuremberg)
Dr Neville Winchester (University of Victoria, Canada)
Prof David W. Roubik (Smithsonian Tropical Research Institute, Panama)
Dr Henri-Pierre Aberlenc (CIRAD, France)
Dr Johannes Bail (Kirchehrenbach, Germany)
Dr Héctor Barrios (University of Panama)
Dr Jonathan R. Bridle (University of Bristol)
Dr Gabriela Castaño-Meneses (Universidad Nacional Autónoma de México)
Dr Bruno Corbara (CNRS, France)
Dr Gianfranco Curletti (Museo Civico di Storia Naturale, Italy)
Dr Wesley Duarte da Rocha (Universidade Federal de Minas Gerais, Brazil)

Dr Domir De Bakker (Institut Royal des Sciences Naturelles de Belgique)
Dr Jacques H. C. Delabie (Universidade Estadual de Santa Cruz, Brazil)
Dr Alain Dejean (University of Toulouse)
Laura L. Fagan (DAFWA)
Dr Andreas Floren (University of Wurzburg)
Prof Roger Kitching (Griffith University)
Dr Enrique Medianero (University of Panama)
Dr Evandro Gama de Oliveira (Centro Universitário Una, Brazil)
Dr Jérôme Orivel (CNRS, France)
Dr Marc Pollet (Research Institute for Nature and Forest, Belgium)
Dr Sérvio P. Ribeiro (Universidade Federal de Ouro Preto, Brazil)
Dr Yves Roisin (Université Libre de Bruxelles)
Prof Thomas M. Lewinsohn (University of Campinas, Brazil)
Dr Maurice Leponce (Institut Royal des Sciences Naturelles de Belgique)
Dr Paola Mairota (University of Bari, Italy)
Dr Barbara Cafarelli (University of Foggia, Italy)
Dr Francesco Lovergine (CNR- ISSIA, Italy)
Dr Richard Lucas (University of NSW)
Dr Harini Nagendra (Azim Premji University, India)
Dr Duccio Rocchini (Fondazione Edmund Mach, Research and Innovation Centre, Italy)
Dr Cristina Tarantino (CNR-ISSIA, Italy)
Dr Kingsley Dixon (Curtin University)
John Sugau (Sabah Forestry Department)
Prof Kath Dickinson (Otago University)
Dr Bruce Webber (CSIRO)
Dr John Scott (CSIRO)
Dr Owain Edwards (CSIRO)
Dr Mattias Jonsson (Swedish University of Agricultural Sciences)
Dr Cory Straub (Ursinus College, USA)
Dr Hannah Buckley (Lincoln University, NZ)
Dr Bradley Case (Lincoln University, NZ)
Dr Roddy Hale (University of Canterbury, NZ)
Dr Claudio Gratton (University of Wisconsin)
Prof Steve Wratten (Lincoln University, NZ)
Dr Arvind Varsani (University of Canterbury, NZ)
Prof Jason Tylianakis (University of Canterbury, NZ)
Dr Tatyana Rand (USDA)
Dr Gary Barker (Landcare Research, Hamilton)
Prof Louis Schipper (Waikato University)
Dr Matthew Daws, Andrew Grigg, John Koch (Alcoa of Australia Ltd)
Dr Aaron Gove (Astron Environmental Services, Perth)
Prof Teja Tscharntke (University of Goettingen, Germany)

Renae Hovey

Dr Linda Bellchambers (DPIRD)
Mr Geoff Bastyan (Private Consultant)
Dr Kieryn Kilminster (DoW)
Dr Robert Orth (Griffith University)
Dr Russ Babcock (CSIRO)

Richard Hobbs

Prof Hal Mooney (Stanford University)
Asst Prof Lauren Hallett (University of Oregon)
Prof Katherine Suding (University of Colorado Boulder)
Dr Eric Higgs, (University of Victoria, BC)
Prof Steve Murphy, (University of Waterloo, Canada)
Prof Jim Harris, (Cranfield University)
Dr Rachel Standish (Murdoch University)
Dr Suzanne Prober (CSIRO)
Prof David Lindenmayer (ANU)

Samantha Setterfield

Charles Darwin University
University of Maryland
Griffith University
James Cook University
University of Queensland
Maquarie University
Kimberley Land Council
Department of Environment and Energy
Department of Water and Environmental Regulation (WA)
Department of Biodiversity, Conservation and Attractions (WA)
Department of Primary Industries and Regional Development (WA)
Department of Natural Resources (NT)

Thomas Wernberg

Dr Mads Thomsen (University of Canterbury)
Prof Morten Pedersen (Roskilde University)
Prof Kjell Magnus Norderhaug (Institute of Marine Research)
Dr Karen Filbee-Dexter (Norweigian Institute of Water Research)
Dr Dan Smale (Marine Biological Association of the UK)
Dr Eric Oliver (Dalhousie University)
Prof John Bolton (University of Cape Town)
Prof Isabel Sousa Pinto (CIIMAR, University of Porto)
Assoc Prof Xiao Xi (Zhejian University)
Dr Mat Vanderklift (CSIRO)

Dr Alistair Hobday (CSIRO)
Dr Tom Holmes (DPaW)
Assoc Prof Neil Holbrook (University of Tasmania)
Dr Melinda Coleman (NSW DPI)
Dr Adriana Verges (University of New South Wales)

Tim Langlois

Dr Simon de Lestang (DPIRD Fisheries)
Dr Jason How (DPIRD Fisheries)
Dr Joachim Claudet (CNRS/France)
Dr Rene Abesemis (JCU)

National & International Visitors

Dirk Zeller

Prof Daniel Pauly (UBC)

Gary Kendrick

Camilla Gustafsson (University of Helsinki)
Juliana Giraldo Arias (University of Antioquia)

Michael Douglas

Dr Brendan Edgar (NESP Northern Hub Executive Officer)
Assoc Prof Mark Kennard (Griffith University)
Dr Clare Taylor (Charles Darwin University)

Samantha Setterfield

Prof Lindsay Hutley (Charles Darwin University)
Dr Natalie Rossiter-Rachor (Charles Darwin University)
Dr Vanessa Adams (Macquarie University)

Thomas Wernberg

Ms Katja Lynnerup Hansen (CPH-Business Laboratory and Environment)
Prof Morten Pedersen (Roskilde University, DK4000 Roskilde (sabbaticcal)
"Dr Melinda Coleman (NSW Department of Primary Industries, National Marine Science Centre)
Mr Felipe Ribeiro (Universidade Federal Fluminense)

Funding Success

Dr Ana Martins Sequeira (2017) Marine Megafauna Movement Analytical Program (MMMAP) showcase and sundowner with industry .UWA Research Impact Grants ($4,725)

Dr Catherine Car, Professor Leigh Simmons, Dr Mark Harvey, Dr Joel Huey (2017) Taxonomy, conservation systematics and speciation in the megadiverse millipede genus Antichiropus (Paradoxosomatidae) .Department of the Environment Australian Biological Resources Study ABRS ($270,000)

Dr Dianne McLean, Associate Professor Julian Partridge, Associate Professor Michael Burton, Dr Julian Clifton (2017) Peer Review Net Enviro Benefit Analysis .BHP Billiton Iron Ore Pty Ltd ($13,325)

Dr Dianne McLean, Mr Todd Bond, Associate Professor Julian Partridge, Dr Timothy Langlois (2017) A comparison of fish assemblages associated with two oil and gas pipelines and the adjacent seafloor .Woodside Energy Ltd ($66,354)

Dr Dianne McLean, Mr Todd Bond, Mr Michael Taylor, Associate Professor Julian Partridge, Dr Timothy Langlois (2017) Fish-Habitat Associations Around Wellheads, North-West Shelf, Western Australia .Western Australian Energy Research Alliance WAERA ex Woodside R2D3 ($47,250)

Dr Eve McDonald-Madden, Professor David Pannell, Professor Richard Hobbs, Dr Edward Game (2017) Global extent of degraded farm lands and their conservation potential .University of Queensland ex ARC Discovery Projects ($15,000)

Dr Liz Barbour, Dr Tony Page, Dr Patrick Finnegan, Professor Joerg Bohlmann, Dr Gavin Flematti (2017) Enhance the formation of heartwood in sandalwood in Vanuatu .Australian Centre for International Agricultural Research ACIAR ($250,000)

Dr Michael Renton, Emeritus Professor Johannes Lambers, Associate Professor Etienne Laliberte, Dr Benjamin Turner, Dr Francois Teste (2017) Plant-soil interactions through space and time: forecasts and ecological relevance .UWA Research Collaboration Awards ($28,627)

Dr Miriam Munoz-Rojas, Doctor Albert Sole-Benet, Dr Yolanda Canton, Professor David Eldridge, Dr Wendy Williams (2017) Innovative nature-based strategies for drylands restoration: the potential of indigenous cyanobacteria .UWA Research Collaboration Awards ($23,050)

Dr Renae Hovey, Mr Matthew Fraser (2017) Cockburn Sound Seagrass Mapping .Department of Environment Regulation ($51,680)

Dr Timothy Langlois, Dr Thomas Wernberg, Dr Renae Hovey, Dr Dianne McLean, Dr Simon de Lestang (2017) WRL IPA: assess causes and implications of anomalous low lobster catch rates in the shallow water areas near the centre of the Western Rock Lobster fishery .Fisheries Research & Development Corporation ($384,181)

Dr Todd Erickson, Dr David Merritt, Dr Andrew Guzzomi, Dr Miriam Munoz-Rojas (2017) Catalysing the adoption of restoration engineering in large-scale rehabilitation programs .UWA Research Impact Grants ($19,400)

Dr Winn Kennington (2017) Development and support for new molecular biology techniques for fisheries science .WA Department of Primary Industry and Regional Development $45,000

Mr Jonathan Mitchell, Professor Shaun Collin, Dr Timothy Langlois, Dr Dianne McLean, Dr Vic Peddemors, Ms Sallyann Gudge (2017) Galapagos Shark - Carcharhinus Galapagenous - in the Lord Howe Marine Park - Commonwealth - and the Lord Howe Island Marine Park NSW .Director of National Parks ($70,940)

Mr Jon-Paul Emery (2017) Exploring and evaluating options outside captive management for two Critically Endangered reptiles on Christmas Island: the blue-tailed skink (Cryptoblepharus egeriae) and Lister's gecko (Lepidodactylus listeri) .Equity Trustees Limited Holsworth Wildlife Research Endowment ($6,000)

Mr Philipp Bayer, Dr Agnieszka Golicz, Mr Matthew Fraser, Mr Jeremy Bougoure (2017) Microbe mediated alternative Nitrogen nutrition in Australian seagrasses .UWA Research Collaboration Awards ($28,100)

Mr Yannick Mulders, Dr Thomas Wernberg (2017) Functional redundancy of seaweed canopies .UWA Research Collaboration Awards ($4,800)

Mrs Ana Giraldo Ospina, Dr Renae Hovey, Professor Gary Kendrick (2017) Measuring reproductive effort and growth of deeper kelp populations: their role in the recovery of shallow kelp beds .Equity Trustees Limited Holsworth Wildlife Research Endowment ($6,000)

Mrs Hannah Etchells, Dr Pauline Grierson, Dr Lachlan McCaw, Dr Alison O'Donnell (2017) The impacts of extremely severe wildfire on the interactions between regenerating karri forest plants, fungi and small foraging marsupials .Equity Trustees Limited Holsworth Wildlife Research Endowment ($5,000)

Ms Marit Kragt, Associate Professor Atakelty Hailu, Dr Timothy Langlois (2017) Opinions and experiences of Australian Recreational Fishermen with No-take Marine Reserves .Australian Marine Conservation Society ($19,989)

Ms Sahira Bell, Dr Thomas Wernberg (2017) Global threats to ocean forests: disentangling the effects of heatwaves and herbivores .Equity Trustees Limited Holsworth Wildlife Research Endowment ($6,500)

Professor Gary Kendrick, Dr Martin Breed, Dr Siegfried Krauss, Doctor John Stephen (2017) Seagrass adaptation, extreme events, synergistic stress and climate change .ARC Discovery Projects ($525,413)

Professor Jessica Meeuwig (2017) Project D2 - Standard Operating Procedures (SOP) for survey design, condition assessment and trend detection .University of Tasmania ex National Environmental Science Program NESP ($72,000)

Professor Jessica Meeuwig (2017) The Spatial distribution of marine wildlife in the Bremer Bay region .University of Tasmania ex National Environmental Science Program NESP ($150,000)

Professor Richard Hobbs, Dr Todd Erickson, Dr Jason Stevens, Associate Professor Matthew Madsen, Dr Michael Forster, Mr Vernon Newton, Mr Anthony Pekin, Mr Alan Savage (2017) Innovative seed technologies for restoration in a biodiversity hotspot .ARC Linkage Projects ($675,400)

Professor Richard Hobbs, Dr Todd Erickson, Dr Jason Stevens, Associate Professor Matthew Madsen, Dr Michael Forster, Mr Vernon Newton, Mr Anthony Pekin, Mr Alan Savage (2017) Innovative seed technologies for restoration in a biodiversity hotspot .Hanson Construction Materials Pty Ltd ($25,000)

Professor Richard Hobbs, Dr Todd Erickson, Dr Jason Stevens, Associate Professor Matthew Madsen, Dr Michael Forster, Mr Vernon Newton, Mr Anthony Pekin, Mr Alan Savage (2017) Innovative seed technologies for restoration in a biodiversity hotspot .Bentonite Products WA Pty Ltd ($75,000)

Professor Richard Hobbs, Dr Todd Erickson, Dr Jason Stevens, Associate Professor Matthew Madsen, Dr Michael Forster, Mr Vernon Newton, Mr Anthony Pekin, Mr Alan Savage (2017) Innovative seed technologies for restoration in a biodiversity hotspot .WA Botanic Gardens & Parks Authority (Kings Park) ($125,000)

Prizes and Awards

Faculty of Science Excellence Award 2017
Amanda Ridley

2017 Oceans Award (Science)
Dirk Zeller & Daniel Pauly

CSIRO Alumni Brodie Hall Prize 2017
Norman Barrow

Peer Prize for Women in Science (Earth, Environment and Space) 2017
Nicola Mitchell

Excellence in Coursework Teaching (Level 1)
Nicola Mitchell (Recipient), 2017

UWA Fellowship Support 2017
Giovanni Polverino

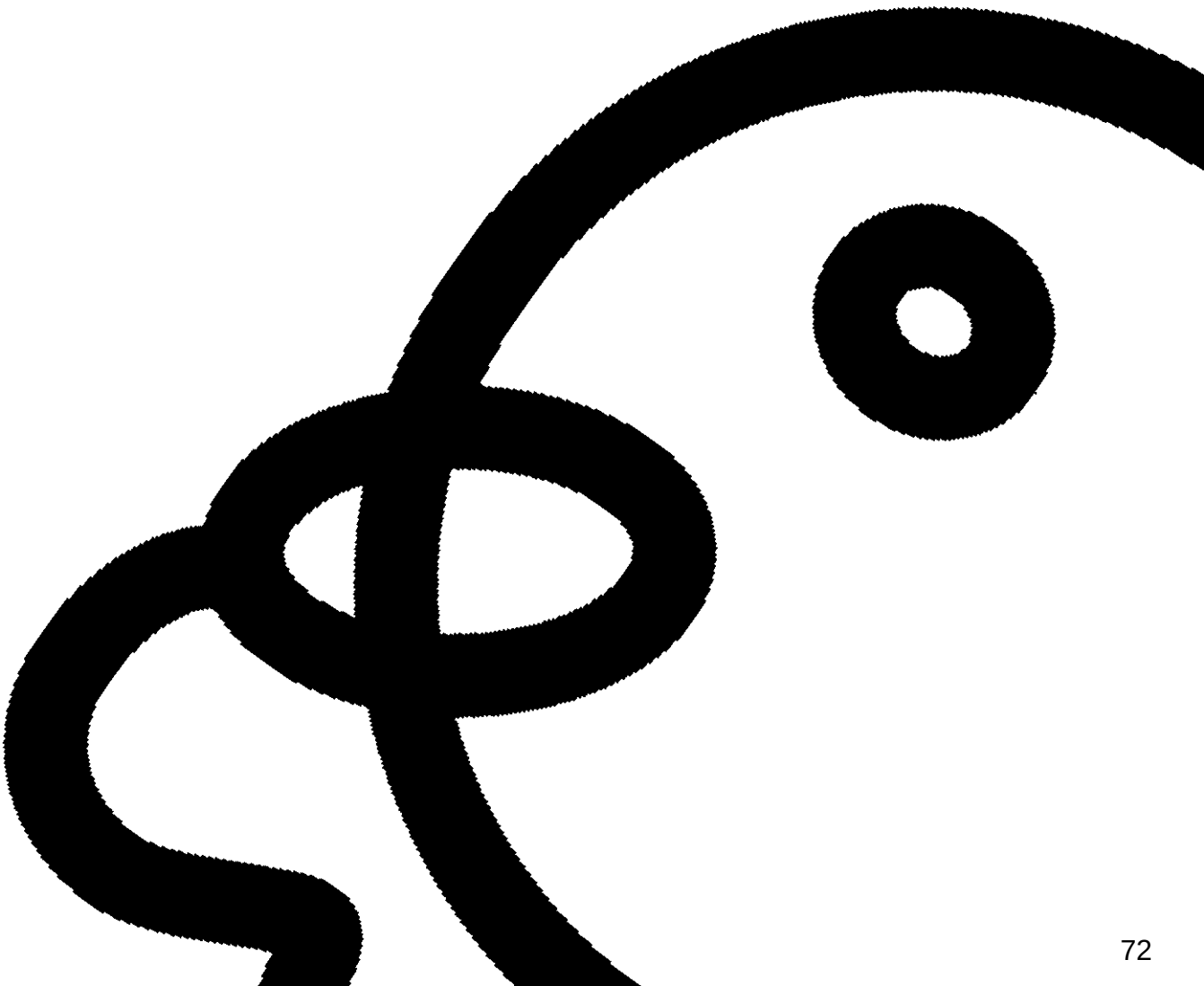
UWA Student Guild's Student Choice Award 2017
Amanda Ridley

Forrest Research Fellowship 2017
Giovanni Polverino






EVOLUTIONARY BIOLOGY



CENTER FOR EVOLUTIONARY BIOLOGY

AThe CEB's primary role is to serve as a National and International flagship for UWA's ERA research strengths in evolution (ERA4), ecology (ERA5) and zoology (ERA5),which span two of the Faculty of Science's research themes, "Restoring and maintaining balance in our natural environment" and "Furthering human knowledge and enhancing society". The goals of the centre are to provide a highly focused intellectual environment offering excellence in research and research training for postgraduate and early career researchers, to provide an umbrella for research conducted across otherwise unrelated disciplines within UWA, and to act as a magnet for attracting graduate, early career and established researchers both nationally and internationally.

In 2017, CEB personnel raised $1,038,747 that will sustain the centres activities over the next 3 — 5 years. Centre personnel published 54 research papers in international peer reviewed journals. 95% of peer reviewed articles appeared in journals with an ISI Impact Factor. The average impact factor of journals in which articles appeared was 4.373. 58% of papers were in Q1 ISI journals, including papers in the top 10% of journals such as Nature Scientific Reports (3), Proceedings of the Royal Society of London B (10), Current Biology (1) and Trends in Ecology & Evolution (3). The centre has been actively involved in external collaborations with national and international teaching and research institutions. In summary, the CEB has continued to grow in 2017.

2017 RESEARCH HIGHLIGHTS

7
PhD Completions

10
Hon/Masters Completions

2
Visiting Researchers

54
Publications

External Grants
10
$1.04 M

32
External Collaborations

6
Internal Collaborations

6
Awards & Recognition

EVOLUTIONARY BIOLOGY

Academic Staff

Prof. Leigh Simmons

Evolutionary biology | Sperm competition | Behavioural ecology | Sexual selection | Entymology | Evolutionary psychology

Assoc. Prof. Joseph Tomkins

Allometry | Alternative reproduction tactics | Genetic variation | Inbreeding | Sexual selection | Threshold traits

Dr Bruno Buzatto

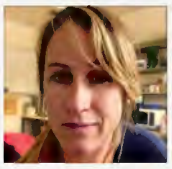
Evolutionary biology | Mating systems | Animal behaviour | Sexual selection | Invertebrate biology | Phenotypic plasticity

Dr Ryan Dosselli

Antimicrobial compounds | Evolutionary conflicts | Honeybees | Host parasite interactions | Immunology | Proteomics | Sexual selection

Dr Jon Evans

Behavioural ecology | Evolutionary biology | Fish biology and behaviour | sperm competition | Genital & gamete evolution | Mating systems



Dr Renee Firman

Post copulatory sexual selection | Sperm competition | Selective fertilisation | Adaptive sex allocation | Mammals | House mice | Native rodents

Dr Cyril Grueter

Primatology | Biological anthropolgy | Behavioural ecology | Socioecology | Social behaviour | Comparative analysis

Dr Clelia Gasparini

Evolutionary biology | Sexual selection | Sperm competition | Animal behaviour

Dr Stephanie King

Behavioural ecology | Cooperative behaviour | Cognition | Behavioural ecology

Dr Jason Kennington

Genetics | Evolution | Population genetics | Conservation genetics

Dr Amanda Ridley

Behavioural ecology | Evolutionary biology | Cooperative breeding | Social evolution | Conservation & climate change

Dr Kathryn Macnamara

Sexual selection | Evolution | Pheremones | Ecological immunology

Dr Yong Zhi Foo

Dr Kate Morgan

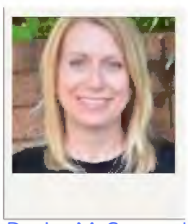
Dr Frederica Poli

- Evolutionary biology
- Sexual selection
- Behavioural ecology
- Sperm competition
- Fish reproduction and behaviour

Dr Erin McCullough

Professional Research Staff

Ms Maxine Lovegrove
Grad. Research Officer



Ms Danica McCorquodale
Research Technician

Ms Emma Daymond
Research Technician

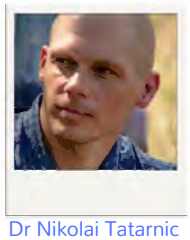
Adjunct & Honorary Staff

Dr Dale Roberts
Sen. Hon. Research Fellow

Dr Joel Huey
Adj. Research Fellow

Dr Natasha LeBas
Adj. Lecturer

Dr Jennifer Kelley
Adj. Research Fellow



Dr Nikolai Tatarnic
Adj. Lecturer

Dr Nerida Wilson
Adj. Research Fellow

Dr Liam Dougherty
Adj. Research Fellow

Dr Helena Mellstrom
Adj. Research Fellow

Dr Paco Garcia
Adj. Research Fellow

POST GRADUATE RESEARCH STUDENTS

Mr Blair Bentley
Coord Supervisor: Joe Tomkins
Predicting the effects of climate change on sex-ratios and embryonic mortality of sea turtles in the north-west of Australia

Mr Jacob Berson
Coord Supervisor: Leigh Simmons
The role of cuticular hydrocarbons in mate choice and paternal investment in the dung beetle, Onthophagus taurus

Ms Melanie Mirville
Coord Supervisor: Mandy Ridley
The causes and consequences of intergroup interactions in mountain gorillas

Mr Fabian Rudin
Coord Supervisor: Leigh Simmons
Environmental and Genetic Effects on Behavioral Syndromes

Ms Tabitha Rudin-Bitterli
Coord Supervisor: Nicki Mitchell
Adaptive potential of terrestrial-breeding amphibians in a drying climate

Ms Elizabeth Wiley
Coord Supervisor: Mandy Ridley
The effects of climate change and social interactions on population demographics in a cooperatively breeding bird

Mr Soon Hwee Ng
Coord Supervisor: Leigh Simmons
The role of gut microbes in expression of sexual traits and sexual selection

Mr Samuel Lymbery
Coord Supervisor: Leigh Simmons
Can indirect fitness mediate sexual conflict in Seed Beetles?

Mr Goncalo Andre
Coord Supervisor: Leigh Simmons
Function and evolution of the penis bone in house mice

Mr Malcolm Soh
Coord Supervisor: Nicki Mitchell
Effects of environmental change on montane amphibians and birds in Peninsular Malaysia

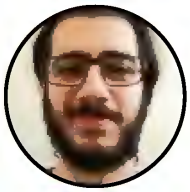
Ms Jaya Mathews
Co Supervisor: Mandy Ridley
The effects of seasonal food availability on grouping patterns of eastern chimpanzees in a tropical Afromontane forest in Rwanda

Ms Kara Layton
Coord Supervisor: Jason Kennington
Patterns of speciation and diversity in Chromodoris (Gastropoda: Nudibranchia: Chromodorididae) and Eulimidae (Gastropoda: Caenogastropoda).

Ms Stephanie Venables
Coord Supervisor: Mandy Ridley
The benefits of sociality: an intraspecific approach to understanding the relationship between cooperation, cognition and fitness.

NEW POST GRADUATE ENROLMENTS

Ms Nadia Sloan
Coord Supervisor: Leigh SImmons
Coevolution of male and female genitalia in millipedes



Mr Joe Moschilla
Coord Supervisor: Leigh Simmons
Understanding the mechanisms and evolutionary consequences of individual behavioural variation

POST GRADUATE COMPLETIONS

Dr Ben Ashton
Coord Supervisor: Mandy Ridley
The causes and consequences of variation in cognitive ability in the cooperatively breeding Australian magpies (Cracticus tibicen dorsalis)

Dr Robert Dugand
Coord Supervisor: Jason Kennington
Using experimental divergence in sexual attractiveness to test sexual selection theory.

Dr Sabrina Engesser
UWA Supervisor: Mandy Ridley
Vocal combinations in the southern pied babblers and the chestnut-crowned babbler: implications for the evolution of human language.

Dr Genevieve Hayes
Coord Supervisor: Joe Tomkins
Living with fire: Ecology and genetics of the dasyurid mammal Dasykaluta rosamondae.

Dr Jacqueline Loo
Coord Supervisor: Jason Kennington
Assessing impact of environmental change on the genetic composition of wild populations of crustaceans

Dr Rowan Lymbery
Coord Supervisor: Jon Evans
Sperm competition and gamete interations in a marine broadcast spawner.

UNDERGRADUATE TEACHING

UNIT CODE	UNIT NAME	COORDIANTOR*/LECTURER
BIOL1130	*Frontiers in Biology*	Kennington, Evans, Tomkins
ANIM2209	*Field Studies in Zoology*	**Kennington***, Evans, Tomkins
GENE2250	*Principles of Inheritance*	Kennington
ENVT 2221	*Global Climate Change and Biodiversity*	Ridley
ANIM3365	*Behavioural Ecology*	**Evans* & Tomkins***, Kelley, King, Ridley, Simmons
GENE3360	*Evolutionary Genetics*	**Kennington* & Tomkins***
ANIM3353	*Wildlife Conservation and Management*	**Ridley***, King
ANIM3362	*Evolutionary Processes*	**Kennington***, Tomkins, Evans
ANIM3361	*Animal Populations*	Ridley
BIOL4402	*Conservation Genetics*	**Kennington***,
ANIM5502	*Evolutionary Biology*	**Simmons***

HONOURS & MASTERS COMPLETIONS

NAME	DEGREE	TOPIC	SUPERVISOR
Ms Deanne Cummins.	Hons	A genome-wide search for genetic diversity and local adaptation in a terrestrial breeding frog highlights vulnerability to climate	Jason Kennington
Ms Kristen Nilsson	Hons	Genetic evaluation and recommendations for black-flanked rock wallaby (Petrogale lateralis lateralis) translocations from the Wheatbel to Kalbarri Ntional Park, Western Australia	Jason Kennington
Mr Elliot Press	Hons	Socially Mediated Behavioural Plasticity in the Guppy, Poecilia reticulata	John Evans & Clelia Gasparini
Ms Elizabeth Speechley	Hons	Female guppies (Poecilia reticulata) increase their propensity for polyandry as an inbreeding avoidance strategy.	Jon Evans & Clelia Gasparini
Ms Aline Gibson Vega:	Hons	Sexual selection accelerates adaptation in *Drosophila melanogaster*.	Robert Dugand, Joseph Tomkins & Jason Kennington.
Ms Jessica M. Moran:	Hons	Rival accessory gland secretions increase sperm velocity in the European honey bee (*Apis mellifera*):	Boris Baer, Ryan Dosselli & Renee C. Firman
Ms Annabel Silvestri	Hons	The discrimination of alarm callers based on reliability in western Australian magpies (*Cracticus tibicen dorsalis*).	Amanda Ridley & Kate Morgan
Ms Sarah Walsh	Hons	Evidence for potential compositional syntax in an Australian songbird: a step toward understanding the evolution of language. Supervisors:	Amanda Ridley, Simon Townsend (external)
Ms Bronte Moore:	MSc	Vocal synchrony in allied male Indo-Pacific bottlenose dolphins Tursiops aduncus.	Stephanie King & Amanda Ridley
Ms Phoebe Beurteaux	MSc	The development of quantitative real-time PCR assays for the rapid and accurate identification of marron species (*Cherax tenuimanus* and *Cherax cainii*) and their hybrid forms.	Jason Kennington & Rodney Duffy

PUBLICATIONS

Research Papers

Add aAllen SJ, King SL, KrÜtzen M, Brown AM (2017) Multi-modal socio-sexual displays in Australian humpback dolphins. Scientific Reports, 7:13644

Buzatto, B.A., Thyer, E.M., Roberts, J.D. & Simmons, L.W. 2017. Sperm competition and the evolution of precopulatory weapons: testis size and amplexus position, but not arm strength, affect fertilization success in a chorusing frog. Evolution, 71, 329-341.

*Castalanelli, M.A., Huey, J.A., Hillyer, M.J. & Harvey, M.S. 2017 Molecular and morphological evidence for a new genus of small trapdoor spiders from arid Western Australia (Araneae: Mygalomorphae: Nemesiidae: Anaminae). Invertebrate Systematics, 31, 492-505

Cure K, Thomas L, Hobbs, J-PA, Fairclough DV & Kennington WJ (2017). Genomic signatures of local adaptation reveal source-sink dynamics in a high gene flow fish species. Scientific Reports, 7, 8618.

Dougherty, L.R. (2017) Sexual antagonism hypothesis. In 'Encyclopedia of Animal Cognition and Behavior' (eds. Vonk, J. & Shackleford, T.). Springer International Publishing.

Dougherty, L.R. & Simmons, L.W. 2017. X-ray micro-CT scanning reveals temporal separation of male harm and female kicking during traumatic mating in seed beetles. Proceedings of the Royal Society B 284: 20170550.

Dougherty, L.R., van Lieshout, E., McNamara, K.B., Moschilla, J.A., Arnqvist, G., Simmons, L.W. 2017. Sexual conflict and correlated evolution between male persistence and female resistance traits in the seed beetle Callosobruchus maculatus. Proceedings of the Royal Society B, 284, 20170132.

Engesser, S., Ridley, A.R. & Townsend, S.W. 2017. Element repetition rates encode functionally distinct information in pied babbler "clucks" and "purrs". Animal Cognition, 20, 953-960.

Evans, J. P., Lymbery, R. A., Wiid, K. S., Rahman, Md M. & Gasparini, C. 2017 Sperm as moderators of environmentally induced paternal effects in a livebearing fish. Biology Letters 13: 20170087

Firman, RC, Gasparini, G, Manier, MK, Pizzari, T. 2017. Postmating female control: 20 years of cryptic female choice. Trends in Ecology and Evolution 32: 368-382.

Firman, RC, Gasparini, G, Manier, MK, Pizzari, T. 2017. Reply to Eberhard. Cryptic female choice: a general phenomenon. Trends in Ecology and Evolution 32: 807.

Flacke, G. F., Tomkins, J. L., Black, R & Steck, B. 2017 Demographics of Polycystic Kidney Disease and captive population viability in pygmy hippopotamus (Choeropsis liberiensis). Zoo Biology 36:136-151.

Foo, Y.Z., Rhodes, G., & Simmons, L.W. 2017. Predictors of facial attractiveness and health in humans. Scientific Reports, 6, 39731. DOI: 10.1038/srep39731

Foo, Y.Z., Nakagawa, S., Rhodes, G., & Simmons, L.W. 2017. The effects of sex hormones on immune function: a meta-analysis. Biological Reviews, 92, 551-571.

Foo, Y.Z., Rhodes, G., & Simmons, L.W. 2017. The carotenoid beta-carotene enhances facial color, attractiveness and perceived health, but not actual health, in humans. Behavioral Ecology, 28, 570-578.

Foo, Y.Z., Simmons, L.W. & Rhodes, G. 2017. The relationship between health and mating success in humans. Royal Society Open Science, 4, 160603. http://dx.doi.org/10.1098/ros.160603

*Garcia-Gonzalez, F. 2017. Promiscuity. In: Encyclopedia of Animal Cognition and Behavior, (Vonk, J. & Shackelford, T. K., eds.). 7 pages. Springer. DOI: 10.1007/978-3-319-47829-6_423-1

Gasparini, C., Dosselli, R. & Evans, J. P. 2017 Sperm storage by males causes changes in sperm phenotype and influences the reproductive fitness of males and their sons. Evolution Letters 1: 16-25

Groom, C., White, N.E., Mitchell, N., Roberts, J.D. & Mawson, P. (2017). Assessing the spatial ecology and resource use of a mobile and endangered species in an urbanized landscape using satellite telemetry and DNA faecal barcoding. Ibis 159, 390–405.

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Grueter CC, Li D, Ren B, Wei F, Li M (2017). Deciphering the social organization and structure of wild Yunnan snub-nosed monkeys (Rhinopithecus bieti). Folia Primatologica 88:358-383.

Grueter CC, Qi X, Li B, Li M (2017). Multilevel societies (Quick Guide). Current Biology 27: R984-R986

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*Huey, JA Balcombe, SR Real, KM Sternberg, D Hughes JM, 2017. Genetic structure and effective population size of the most northern population of the Australian river blackfish, Gadopsis marmoratus (Richardson 1848): implication for long-term population viability. Freshwater Science 36, 113-123.

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*Kelley, JL, Grierson, PF, Davies, PM & Collin, SP. 2017. Water flows shape lateral line morphology in an arid zone freshwater fish. Evolutionary Ecology Research 18: 411-428.

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Lymbery, S.J. & Simmons, L.W. 2017. Males harm females less when competing with familiar relatives. Proc. R. Soc. B, 284, 20171984.

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*Malo, A. F., Martinez-Pastor, F., Garcia-Gonzalez, F., Garde, J., Ballou, J. D. & Lacy, R. C. 2017. A father effect explains sex-ratio bias. Proceedings of the Royal Society B, 284: 20171159.

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Simmons, L.W. & Lovegrove, M. 2017. Socially cued seminal fluid gene expression mediates responses in ejaculate quality to sperm competition risk. Proceedings of the Royal Society B, 284, 20171486.

Simmons, L.W., Lüpold, S. & Fitzpatrick, J.L. 2017. Evolutionary trade-off between secondary sexual traits and ejaculates. Trends in Ecology and Evolution, 32, 964- 976.

*Spiller, L, Grierson, PG, Davies, PM, Hemmi, J, Collin, SP & Kelley, JL. 2017. Functional diversity of the lateral line system among populations of a native Australian freshwater fish. Journal of Experimental Biology. DOI: 10.1242/jeb.151530.

*Stiller, J, Wilson, NG, Donellan, S, Rouse, GW (2017). The leafy seadragon, Phycodurus eques, a flagship species with low but structured genetic variability. Journal of Heredity 108(2): 152-162.

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*Wilson NG, Stiller J & Rouse GW (2017). Barriers to gene flow in common seadragons (Syngnathidae: Phyllopteryx taeniolatus). Conservation Genetics, 18, 53-66.

*Winters, AE, Green, N, Wilson, NG, How, M, Garson, MJ, Marshall, J, and Cheney, K. (2017). Relaxed selection on individual pattern elements may allow phenotypic variation of aposematic signals. Proceedings of the Royal Society B, 284: 20170926

Xiang Z, Yang W, Qi X, Yao H, Grueter CC, Garber PA, Li B, Li M (2017). An examination of factors potentially influencing birth distributions in golden snubnosed monkeys (Rhinopithecus roxellana). PeerJ 5: e2892

Books

Naguib, M., Mitani, J.C., Simmons, L.W., Barrett, L., Healy, S., Zuk, M. 2017. Advances in the Study of Behavior. Volume 49. Academic Press. London.

Reports

Belinda Cannell, Beverly Oh, Elizabeth Wiley, Philip Allen, Chris Surman, Amanda Ridley. 2017. Shell/INPEX ARP6 Milestone report #6. Report of the diet composition, foraging behaviour & breeding of target seabird species at Lacepede Islands during the breeding season 2016 and annual comparisons 2014-2016. 51 pp. AIMS Document No: ARP6/UWA/AIMS/039 Rev 1 15

D Meyer, F Momberg, C Matauschek, P Oswald, N Lwin, SS Aung, Y Yang, W Xiao, YC Long, CC Grueter, C Roos. Conservation status of the Myanmar or black snub-nosed monkey Rhinopithecus strykeri. Fauna & Flora International– Myanmar Primate Conservation Program, Dali University–Institute of Eastern-Himalaya Biodiversity Research, and German Primate Center

Invited & contributed presentations

Andre, G.I., Firman, R.C. & Simmons, L.W. (2017) Sperm competition risk affects phenotypic plasticity in the baculum morphology of house mice. XIV Congress of the European Society for Evolutionary Biology, Groningen, The Netherlands.

Andre, G.I., Firman, R.C. & Simmons, L.W. Socially mediated phenotypic plasticity in genital orphology: baculum shape responds to sperm competition in house mice. Biology of Spermatozoa 14. Hassop Hall, Bakewell, UK.

Ashton, B., Ridley, A.R. & Thornton, A. Cognitive performance is linked to group size and affects fitness in Australian magpies. Behaviour 2017, Lisbon.

Berson, J. & Simmons, L.W. (2017). Sex-dependent evolution of an olfactory display trait: experimental evidence that sexual selection drives the evolution of cuticular hydrocarbons in a dung beetle. Australasian Evolution Society, Hobart, Tasmania.

Bourne A, Cunningham SJ, McKechnie AE, Ridley AR, Karasov W. (2017). Measuring metabolic rates with non-invasive doubly-labelled water. Zoological Society of Southern Africa Conference, Pretoria, South Africa

Buzatto B.A. (2017) Evolution through Sexual Selection. University of Sydney, Sydney, Australia.

Buzatto B.A. (2017) Genetic constraints for the evolution of dimorphisms. National Institute of Agricultural Research, St Pée sur Nivelle, France

Buzatto B.A., Clark H.L. & J.L. Tomkins. Correlated response of alternative male morphs to morph specific selection. 35th International Ethological Conference and 2017 Summer Meeting of the Association for the Study of Animal Behaviour, Estoril, Portugal.

Dean, M. Keeble, S., Firman, R.C. & Simmons, L.W. (2017). Do female mice modify fertilizability via their cumulus cells? Biology of Spermatozoa 14. Hassop Hall, Bakewell, UK.

Dougherty, L.R., van Lieshout, E., McNamara, K.B., Moschilla, J.A., Arnqvist, G. & Simmons, L.W. (2017) Spiny penises and fortified vaginas: a sexual arms race in seed beetles. Association for the Study of Animal Behaviour Winter Meeting, Zoological Society of London (London, UK)

Dugand,R., Kennington, J. & Tomkins, J.L. (2017). Sexual selection on males can purge mutations and accelerate adaptation in small populations of Drosophila. Significance of sexual selection for population fitness workshop, Fafleralp, Switzerland.

Evans, J.P. (2017) Female-induced remote regulation of sperm physiology. Society of Reproductive Biology Conference, Perth, Aug 2017

Evans, J.P. (2017) Gamete-level sexual selection: insights from Darwin's neglected taxa. University of Sydney, Aug 2017.

Evans, J.P. (2017) Gamete-level sexual selection: insights from Darwin's neglected taxa. University of East Anglia, Sept 2017.

Evans, J.P. (2017). Multivariate sexual selection on ejaculate traits under sperm competition. Australasian Evolution Society, Hobart, Tasmania.

Firman, R.C. Cryptic female sex allocation and the local neighbourhood. Biology of Spermatozoa 14. Hassop Hall, Bakewell, UK.

Firman, R.C., Buzatto, B.A., Moran, J.M., Rowe, K. C. & Rubenstein, D.R. (2017). Sociality and sexual dimorphism in Australian endemic rodents. Australasian Evolution Society, Hobart, Tasmania.

Foo, Y. Z., Rhodes, G., & Simmons, L. W. (2017). The carotenoid beta-carotene enhances facial colour, attractiveness and perceived health, but not actual health, in humans. Talk presented at the 29th annual meetings of the Human Behavior and Evolution Society, Boise, USA. 31st May – 3rd June, 2017.

Foo, Y. Z., Simmons, L. W., & Rhodes, G. (2017). Predictors of facial attractiveness and health in humans. Talk presented at the 6th International Society for Human Ethology Summer Institute, Boise, USA. 4th June – 6th June, 2017.

Gasparini, C. (2017) Effects of temperature on sperm traits: implications for fitness and potential for transgenerational plasticity. 35th International Ethological Conference, Estoril, Portugal.

Gasparini, C. (2017). It's not all about sperm: cryptic female choice driven by premating male x female interactions. Australasian Evolution Society, Hobart, Tasmania.

Gasparini, C. 7th Poeciliids meeting (Oklahoma, USA, May 2017) – invited speaker as "future stars"

Gasparini, C. Invited seminars, University of Padova, Italy (Sept 2017), University of Stockholm, Stockholm, Sweden (May 2017).

Grueter CC (2017) (keynote speech). The adaptive significance of secondary sexual traits in snub-nosed monkeys and other primates. Inaugural Meeting of the Chinese Primatological Society, Xi'an, China. 19-22 Aug.

Grueter CC (2017). Sexual selection and multilevel sociality in primates. Harvard- Yale Conference on Human Evolution, Cambridge MA, USA. April 28.

Grueter CC, Hale J, Jin R, Judge D, Stoinski T (2017). Infant handling in mountain gorillas: establishing its frequency, function and (ir)relevance for life history evolution. Annual meeting of the American Association of Physical Anthropologists, New Orleans, USA. April 19-22.

King, Friedman, Allen, Connor, Krützen. Us against them: Identity signalling by allied male bottlenose dolphins in Shark Bay. Oral presentation. 22ND Biennial Conference on the Biology of Marine Mammals. Halifax, Nova Scotia 2017.

King, SL. Individual "names" facilitate recognition among multi-level dolphin alliances. Society in Science Symposium. Zürich, Switzerland. November 2017.

King, SL. Nested alliances in male bottlenose dolphins: Individual "names" facilitate recognition in open social networks Invited talk University of Zurich November 2017

King, SL. Nested alliances in male bottlenose dolphins: Individual "names" facilitate recognition in open social networks Invited talk University of Exeter November 2017

Layton KKS, Carvajal JI, Wilson NG. 2017. Employing a transcriptome-based exon capture approach for resolving a phylogeny of closely related nudibranch species. Genomics and Collections Conference. Canberra, Australia. September 2017

Layton KKS, Wilson NG. Exploring an undocumented diversification of gastropod parasites in Antarctica. Society of Australian Systematic Biologists Conference. Adelaide, Australia. November 2017

Layton KKS, Wilson NG. Exploring an undocumented diversification of gastropod parasites in Antarctica. Association of Polar Early Career Scientists Oceania Symposium. Melbourne, Australia. September 2017

Layton KKS. 2017. Understanding the evolutionary relationships among Chromodoris sea slugs. Invited talk. Lord Howe Island Museum Marine Science Seminar. Lord Howe Island, Australia.

Lymbery, R., Kennington, J. & Evans, J.P. (2017) Sperm competition and sperm-egg interactions in a broadcast spawner. Biology of Spermatozoa 14. Hassop Hall, Bakewell, UK.

Lymbery, R., Kennington, J. & Evans, J.P. (2017). Sperm competition, gamete choice and genetic mechanisms in a broadcast spawner. Australasian Evolution Society, Hobart, Tasmania.

Lymbery, S. & Simmons, L.W. (2017) Males harm females less when competing with familiar relatives. 35th International Ethological Conference, Estoril, Portugal.

Mirville, M.O., Ridley, A.R., Samedi, J.P.M., Vecellio, V., Ndagijimana, F., Stoinski, T.S. & Grueter, C.C. (2017). Factors affecting individual participation during intergroup interactions in mountain gorillas (Gorilla beringei beringei). International Mammalogical Congress in Perth, Australia, July 2017.

Moran, J., Baer, B., Doselli, R. & Firman, R.C. (2017) Rival accessory gland secretions increase sperm velocity in the European honey bee (Apis mellifera). Australasian Evolution Society, Hobart, Tasmania.

Ng, S.H. & Simmons, L.W. (2017). Effects of macronutrients and micronutrients on sperm quality. Biology of Spermatozoa 14. Hassop Hall, Bakewell, UK.

Poli, F. (2017). Effects of females reproductive fluids on sperm motility in zebrafish. Australasian Evolution Society, Hobart, Tasmania.

Qi X, Huang K, Li Y, Fang G, Grueter CC, Dunn D, Ji W, Wang X, Wang R, Garber P, Li B (2017). Kin bonds among bachelor males contribute to the evolution of a primate multilevel society. 12th International Mammalogical Congress, Perth, Australia

Ridley, A.R. (2017). Invited Plenary. Is it possible to resolve the conundrum of cooperative breeding? ASSAB conference, Melbourne, VIC July.

Rudin, F., Tomkins, J.L. and Simmons, L.W.. The effects of the social environment and physical disturbance on personality traits, Australasian Evolution Society, Hobart December 2017. (Poster presentation).

Simmons, L.W. (2017). Can post-copulatory sexual selection promote individual and population fitness? Plenary Speaker, Conference Universitaire de Suisse Occidentale,Doctoral Program in Ecology and Evolutionary Biology. Significance of sexual selection for population fitness. Fafleralp, August 2017.

Sloan, N. & Simmons, L.W. (2017). Social manipulation of sperm competition mediates changes in seminal fluid gene expression and ejaculate quality. Biology of Spermatozoa 14. Hassop Hall, Bakewell, UK.

Zhu P, Grueter CC, Garber PA, Ren B, Li M, Li D, Xiang Z (2017). Seasonal variation in the social network topology of a snub-nosed monkey all-male unit. Inaugural Meeting of the Chinese Primatological Society, Xi'an, China. 19-22 Aug.

Editorial boards

Bruno Buzatto

Reviewing Editor, Journal of Evolutionary Biology

Jon Evans

Editorial Board, Journal of Ethology

Cyril Grueter

Editorial Board, International Journal of Primatology

Jason Kennington

Associate Editor, BMC Genetics

Mandy Ridley

Editorial Board, Ostrich Editorial Board, Behavioral Ecology Editor, PeerJ
Editor, Frontiers in Ecology & Evolution

Jennifer Kelley

Reviewing Editor, Frontiers in Ecology & Evolution
Reviewing Editor, Frontiers in Environmental Science

Leigh Simmons

Editor-in-Chief, Behavioral Ecology
Editor, Advances in the Study of Behavior
Editorial Board, Journal of Ethology

External Collaborations

Bruno Buzatto

Prof Wade Hazel (DePauw University), Dr Mathieu Buoro (UC Berkeley), Prof Clifford Qualls (University of New Mexico), Prof Glauco Machado (University of São Paulo); Dr Daniel de Paiva Silva (Federal University of Goiás), Prof Rogelio Macías-Ordóñez (Ecology Institute).

Jon Evans

Prof Neil Gemmell & Dr Sheri Johnson (University of Otago), Andrea Pilastro (University of Padova), Craig Sherman (Deakin University), Catherine Grueber (University of Sydney), Dr Paco Garcia-Gonzalez (CSIC Estación de Biológica de Doñana (Sevilla), Xavier Conlan (Deakin University), Jukka Kekäläinen (Univ. Eastern Finland; Madeleine BeekmanAlessandro Devigili & Univ. Stockholm)

Renee Firman

Dr Anna Lindolm (University of Zurich), Dr Kerstin Musolf (Brooklyn College USA), Dr Kym Ottewell (DePaW WA, Prof. Tom Pizzari (Oxford University), Dr Mollie Manier (The George Washington 20 University)., Kevin Rowe (Museum Victoria), Dustin Rubenstein (Columbia University).

Jennifer Kelley

Prof. John Endler (Deakin University), Laura Kelley (University of Exeter), Sami Merilaita (Abo Akademi, Finland), Rosyln Dakin (University of British Columbia), Tom Lisney (University of Montpellier), Nik Tatarnic (WAM), Bodo Wilts (Adolphe Merkle Institute), Gerd Shroeder Turk (Murdoch University).

Stephanie King

Dr. Simon Allen (UWA), Dr. Michael Krützen (University of Zürich), Prof. Richard Connor (University of Massachusetts Dartmouth), Dr. Kelly Jaakkola (Director of Research at the Dolphin Research Centre, USA) Dr Douglas Emlen, (University of Montana), Dr Christine Miller (University of Florida), Professor Nina Wedell (University of Exeter), Dr Matthew Symonds (Deakin University).

KEY GLOBAL RESEARCH COLLABORATIONS

Helena Larsdotter Mellström

Professor SÖren Nylin (The Wenner-Gren Institute, Stockholm University), Professor Ulrich Theopold (The Wenner-Gren Institute, Stockholm University), Professor Anna-Karin Borg-Karlson (KTH - Royal Institute of Technology, Stockholm).

Mandy Ridley

Dr Alex Thornton (Exeter University), Prof Arnon Lotem (Tel Aviv University), Dr Simon Townsend (Warwick University), Prof Arpat Ozgul (Zurich University), Dr Martha Flower (University of British Columbia), Dr Kelvin Peh (University of Southampton), Dr Claire Spottiswoode (University of Cambridge), Dr Susie Cunningham (University of Cape Town)

Joseph Tomkins

Prof Wade Hazel (DePauw, Indiana), Professor Adrian Lister (UCL), Dr Lukasz Michalczk (Jagiellonian University), Dr Zofia Prokop (Jagiellonian University), Prof Janne Kotiaho (University of Jyvaskyla), Dr Nick Colegrave (The University of Edinburgh), Dr Debbie Young (African Elephant Research Unit), Rebecca Sear (London School of Hygiene and Tropical Medicine).

Clelia Gasparini

Dr Cristina Tuni, Prof N. Dingemanse (LMU Munich, Germany), Prof Andrea Pilastro, Dr M. Pauletto, Dr M. Babbucci (University of Padova, Italy); Dr Alessandro Devigili (Stockholm University, Sweden); Prof S. Immler (UEA, UK) Grueter CC (Harvard University), Professor Richard Wrangham). Dr Martha Robbins (Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany), De Claus Christophersen (ECU).

Prof Beth Kaplin (Antioch University New England and University of Rwanda, Huye, Rwanda), Dr Tara Stoisnki (Dian Fossey Gorilla Fund International, Atlanta, USA), Prof Zuofu Xiang (Central South University of Forestry and Technology, Changsha, Hunan, China), Prof Xiaoguang Qi (Northwest University, Xi'an, China), Prof Ruliang Pan (Northwest University, Xi'an, China), Prof Songtao Guo (Northwest University, Xi'an, China), Prof Baoguo Li (Northwest University, Xi'an, China), Prof Ming Li (Institute of Zoology, The Chinese Academy of Sciences, Beijing, China), Dr Tyler Bonnell (University of Lethbridge, Canada), Dr Carolynn Smith (Macquarie University, Sydney), Prof David Coall (ECU), Prof Stefan LÜpold (University of Zurich).

Leigh Simmons

Marlene Zuk (University of Minnesota), Matt Dean, (University of Southern California, USA), Prof Stephen Simpson (The University of Sydney), Dr Michal Polak (University of Cincinnati, USA), Dr John Fitzpatrick (University of Stockholm, Sweden), Dr Paco Garcia-Gonzalez (CSIC Estación de Biológica de Doñana,Sevilla, Spain), Prof Goran Arnqvist (Uppsala University Sweden), Dr Nik Tatarnic, Dr Joel Huey and Prof Mark Harvey (WA Museum).

Jason Kennington

Dr Jon Bridle (University of Bristol).
Prof Ary Hoffmann (University of Melbourne)
Dr Charles Robin (University of Melbourne).
Dr Michael Snow (Department of Fisheries).

Internal Collaborations

Mandy Ridley

Dr Belinda Cannell (Oceans),
Dr Shane Maloney (SHS).

Leigh Simmons

Gillian Rhodes (School of Psychological Sciences)
Foo, Y.Z. (CCD).

Helena Larsdotter Melström

Dr Björn Bohman and Dr Gavin Flematti, School of Chemical & Molecular Sciences, UWA.

Joseph Tomkins

Debra Judge (SHS)
Irma Larma (CMCA);
Bob Black (SBS).

Cyril Grueter
Joint position SHS and SBS.

National & International Visitors

Research visitors

Dr Xavier Conlan (Deakin University)

Student Internship

Ms Sara Keeble. NSF Graduate Research Fellowship Program, Graduate Research Opportunities Worldwide (GROW).

Funding Success

Evans, T., Didham, R., Kennington, J. & Simmons, L.W. Dung beetle ecosystem engineers – enduring benefits for livestock producers via science and a new community partnership model. Rural Research and Development (R&D) for profit program with Meat and Livestock Australia. UWA component $436,000 over 4 years (total project budget ($22,800,173).

Polverino, G., Evans, J.P. & Gasparini, C. Integrating phenotypic plasticity in biological invasions and climate change to predict species response to a changing world. Forrest Research Foundation ($344,131)

Polverino, G. UWA Fellowship Support for the project "Integrating phenotypic plasticity in biological invasions and climate change to predict species response to a changing world" ($30.000)

Sloan, N. Coevolution of male and female genital morphology and mechanisms of speciation in endemic millipedes. Holsworth Wildlife Research Endowment. ($5625.00)

Ashton, B. Endeavour Postgrad Fellowship. $30,000
King, S.L. Machiavellian Males: the evolution of vocal strategies in a complex system of dolphin alliances. National Geographic Research and Exploration Grant. ($26,141)

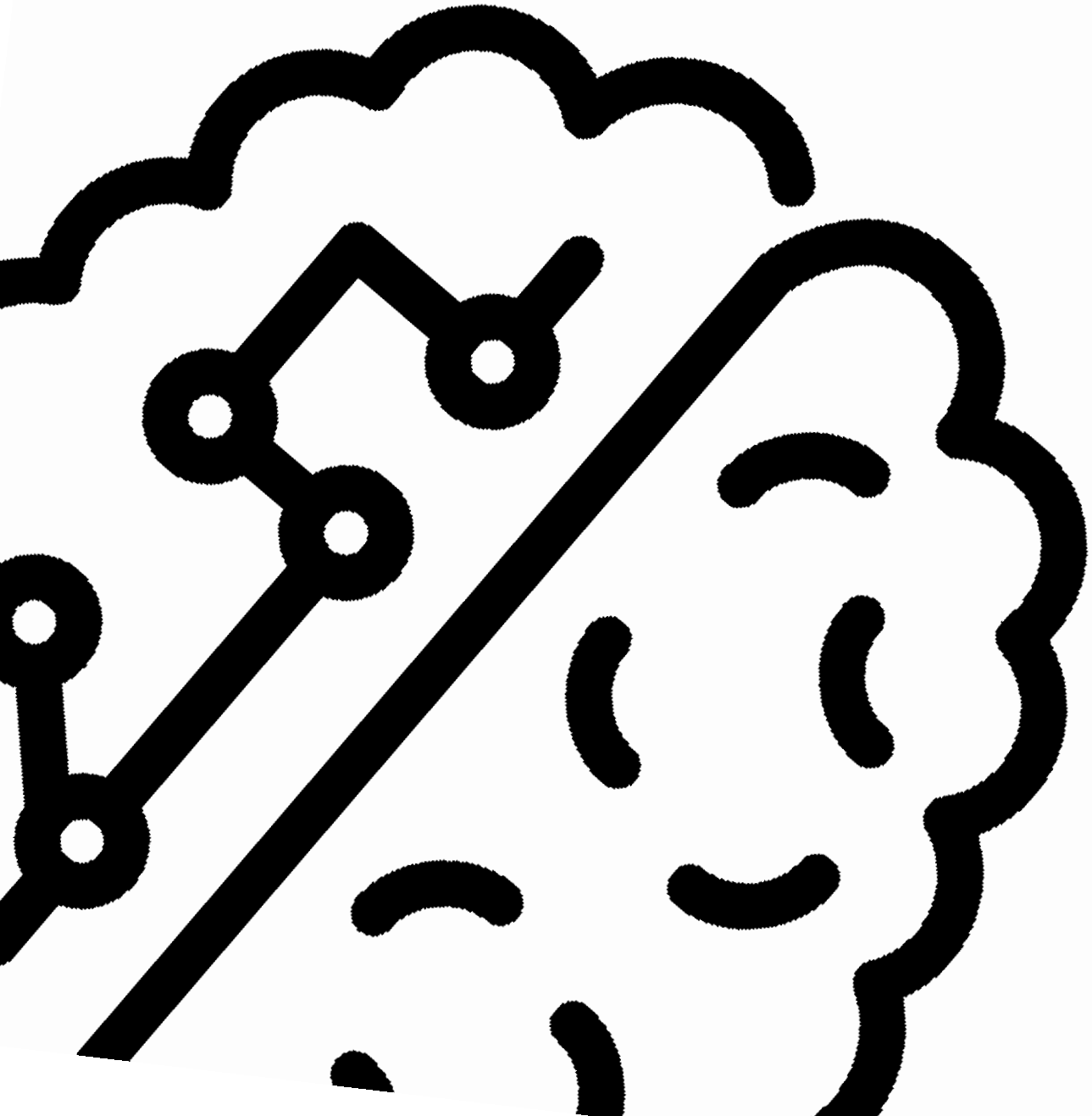
Kennington, J. & Snow. Development and support for new molecular biology techniques for fisheries science. WA Department of Primary Industry and Regional Development. ($45,000)

Foo, Y.Z. Research Associate for Australian Research Council Centre of Excellence in Cognition and its Disorders. ($91,397)

Foo, Y.Z. Australian Research Council Centre of Excellence in Cognition and its Disorders Postdoc Exchange Scheme ($5,850)

Foo, Y.Z. Endeavour Research Fellowship (6-month fellowship at UNSW, total value ($24,500)

NEUROSCIENCE



NEUROSCIENCE

Neuroscience is a broad, multidisciplinary area, as exemplified by the wide range of research interests in the School. There are two major research groups - 'Neuroecology' headed by Professor Shaun Collin and 'Experimental and Regenerative Neurosciences', headed by Professor Sarah Dunlop.
Neuroecology bridges a critical gap between studying the neural basis of behaviour (neuroethology) and evaluating the consequences of that behaviour at the ecological levels of individuals, populations and communities. For example, understanding the neural bases of a variety of senses including vision, olfaction, hearing, pressure and electroreception has helped in the development of shark repellents and understanding the structure of the crocodile retina and its light sensitivity explains how they quietly stalk their prey at the water's edge before attacking with a burst of speed.

The Experimental and Regenerative Neurosciences group seeks to understand the brain and spinal cord and how to repair it and promote functional recovery in diseased states or after traumatic injury. Studies encompass animal models and clinical trials in human patients. We examine a variety of interventions including transcranial magnetic stimulation to drive plasticity (i.e. structural and functional changes in neural circuits) and nanotechnology to target drugs to prevent the spread of secondary degeneration beyond the initial traumatic injury site. Clinical trials for spinal cord involve hypothermia and exercising the paralysed limbs

2017 RESEARCH HIGHLIGHTS

4 PhD Completions

6 Hon/Masters Completions

2 Visiting Researchers

61 Publications

External Grants
15
$2.32 M

57 External Collaborations

49 Internal Collaborations

3 Awards & Recognition

Academic Staff: Neuroecology

Prof. Shaun Collin

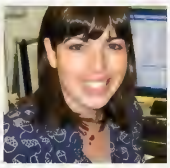
Comparative neurobiology | Sensory systems | Neuroscience | Marine Ecology

Assoc. Prof. Jan Hemmi

Marsupial vision & behaviour | Sensory ecology | Invertebrate vision & behaviour | Colour vision | Neuroscience | Vision

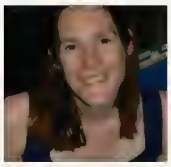
Assoc. Prof. Nathan Hart

Neuroscience | Molecular biology | Evolutionary biology | Retinal diseases



Asst. Prof. Kara Yopak

Comparative neuroanatomy | Sensory biology | Cartilaginous fishes | Marine ecology | Phylogenetic comparative analysis



Dr. Jennifer Kelley

Behavioural ecology | Visual ecology | Freshwater fish ecology | Animal colouration | Predator-prey interactions

Assoc. Prof. Wayne Davies

Molecular evolution | Gene expression & regulation | Circadian rhythms | Vision | Opsins | Photobiology | Pigments | Cystic fibrosis

Assoc. Prof. Julian Partridge

Neuroscience | Marine ecology | Sensory biology | Optics | Marine ecology related to undersea infrastructure

Dr Jessica Mountford

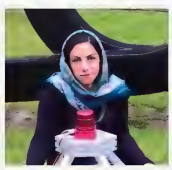
Molecular biology | Colour vision | Inherited retinal disease | Platelet biology | Haematology

Dr Yuri Ogawa

Neuroecology | Visual ecology | Comparative neurobiology | Colour vision | Behavioural ecology

Dr Ryan Kempster

Sensory biology | Neurobiology | Sharks | Neurophysiology of elasmobranch fishes | Marine ecology



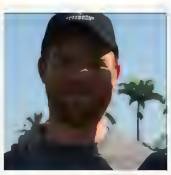
Dr Zahra Bagheri

Neuroengineering | Computational neuroscience | Bio-inspired robotics | Visual neurophysiology | Neuroethology | Sensory ecology

Professional Research Staff: Neuroecology

Ms Caroline Kerr

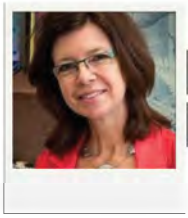
Research Officer



Mr Carl Schmidt

Research Officer

Academic Staff
Experimental & Regenerative Neuroscience



Prof. Sarah Dunlop

Regenerative neuroscience | Neural plasticity | Functional recovery from neurotrauma | Spinal cord injury | Peripheral nervous system

Assoc. Prof. Jennifer Rodger

Neurobiology | Molecular biology | Regenerative neuroscience

Assoc. Prof.Lindy Fitzgerald

Neuroscience and neuroprotection after neurotrauma | Regenerative neuroscience | Nanotechnology | Ion channel inhibitors | Demyelination & remyelination

Dr Kristyn Bates

Neuroscience | Alzheimers disease | Neurodegeneration | Development & plasticity | Regenerative neurobiology

Dr Nicole Smith

Neurobiology | Gene regulation | Breast cancer | Neuroscience | Dementia | Nucleic acids | G-quadruplexes | DNA

Dr Nathaneal Yates

Pathological mechanisms of neurotrauma | Regenerative neurobiology | Circadian rhythms | Neurodevelopmental disorders

Ms Paula Fuller-Carter

Regenerative neuroscience | Neural plasticity | Regenerative neurobiology

Professional Research Staff: Experimental & Regenerative Neuroscience

Mrs Carole Bartlett

Graduate Research Assistant

Ms Marissa Penrose-Menz

Research Assistant

Mr Michael Archer

Graduate Research Assistant

Mrs Louise Goodes

Clinical Research Coordinator

Ms Nicole Hortin

Graduate Research Assistant

Adjunct & Honorary Staff
Neuroecology

Emeritus Prof. David Hunt
Senior Hon. Research Fellow

Experimental & Regenerative Neuroscience

Prof. Charles Watson
Hon. Research Fellow

POST GRADUATE STUDENTS

Neuroecology

Ms Victoria Camilieiri-Asch
Coord Supervisor: Shaun Collin
The sense of smell in sharks compared to other fishes

Mr Michael Kelly
Coord Supervisor: Shaun Collin
The behavioural and physiological indicators of sleep in sharks.

Ms Jonathan Mitchell
Coord Supervisor: Shaun Collins
Investigating the impact of shark depredation in WA recreational fisheries

Ms Lauren Peel
Coord Supervisor: Shaun Collin
Environmental and Genetic Effects on Behavioral Syndromes

Ms Lindsey Spiller
Coord Supervisor: Jennifer Kelly
Functional diversity of the lateral line system among populations of the Western Rainbowfish (Melaenotenia australis)

Ms Channing Egeberg
Coord Supervisor: Shaun Collin
The effectiveness of electric and magnetic shark deterrents

Experimental & Regenerative Neuroscience

Mr Jamie Beros
Coord Supervisor: Jenny Rodger
Mechanisms of developmental retinal ganglion cell death

Ms Katherine Hankinson
Coord Supervisor: Jenny Rodger
Investigating the effects of a tailored musci therapy and real-time biofeedback mobile phone app on human cortical excitability and functional movement .

Ms Wissam Chiha
Coord Supervisor: Melinda Fitzgerald
Identifying and manipulating molecular changes during secondary degeneration in the visual system

Mr Marcus Giacci
Coord Supervisor: Melinda Fitzgerald
Characterising the proliferation, migration and maturation of oligodendrocyte progebitor cells

Ms Alesha Heath
Coord Supervisor: Jenny Rodger
Animal models of repetitive magnetic stimulation for treating depression and dementia

Mr Darren Clarke
Coord Supervisor: Jenny Rodger
What does repetitive manetic stgimulationdo to astrocytes Implications for brain repair followng injury.

Ms Bhedita Jaya Seewoo
Coord Supervisor: Shaun Collin
Using MRI for in-vivo study of the effects of low-intensity repetitive transcranial magnetic stimulation on brain activity and structure in rodents.

NEW POST GRADUATE ENROLMENTS

Neuroecology

Mr Callum Donohue
Coord Supervisor: Jan Hemmi
Understanding the effect of context of escape responses in fiddler crabs

Ms Anna-Lee Jessop
Coord Supervisor: Jan Hemmi
Neural correlates of predator avoidance in the fiddler crab

Experimental & Regenerative Neuroscience

Ms Zhi (Eugeniia) Pho
Coord Supervisor: Jenny Rodger
Neurochemical effects of repetitive Transcranial Magnetic Stimulation

POST GRADUATE COMPLETIONS

Neuroecology

Dr Nicolas Nagloo

Coord Supervisor: Jan Hemmi

Visual ecology of Australian reptiles: Retinal orgnisation and colour vision

Experimental & Regenerative Neuroscience

Dr Kalina Makowiecki

Coord Supervisor: Jenny Rodger

rTMS effects on learning and brain organisation.

Mr Ryan Doig

Coord Supervisor: Melinda Fitzgerald

Combinatorial ion channel inhibitor therapy for treatment of neurotrauma: a therapeutic optimization approach.

Dr Alex Tang

Coord Supervisor: Melinda Fitzgerald

The effects of repetitive Transcranial Magnetic Stimulation (rTMS) on neuroplasticity and behaviour in healthy and neurotrauma animal models.

UNDERGRADUATE TEACHING

UNIT CODE	UNIT NAME	COORDINATOR*/LECTURER
ANIM3320	*Comparative Neurobiology*	Jenny Rodger*Jan Hemmi
ANIM4490	*Special Unit: Comparative Neurobiology*	Jenny Rodger*
ANIM5501	*Evolution and Development*	Jenny Rodger* & Natalie Morellini*
BIOL1130	*Frontiers in Biology*	Guijun Yan & Jan Hemmi*
BIOL5505	*Marine Neuroecology and Behaviour*	Shaun Collin*
NEUR1001	*Neuroscience in Society*	Jenny Rodger* Dominique Blache
NEUR5011	*Neurological Disorders*	Jenny Rodger* Helmy Mulders

PUBLICATIONS

Neuroecology Research Papers

Ryan, L., Hemmi, J., Collin, S., Hart, N. (2017). Electrophysiological measures of temporal resolution, contrast sensitivity and spatial resolving power in sharks. Journal of Comparative Physiology A-Neuroethology Sensory Neural and Behavioral Physiology. 203: 197- 210.

Spiller, L., Grierson, P., Davies, P., Hemmi, J., Collin, S., Kelley, J. (2017). Functional diversity of the lateral line system among populations of a native Australian freshwater fish. Journal of Experimental Biology: 220: 2265-2276.

Stouraitis, T Gkanias, E Hemmi, J Webb, B. (2017). Predator Evasion by a Robocrab. Biomimetic and Biohybrid Systems: 428-439.

Ogawa, Y., Ribi, W., Zeil, J., Hemmi, J (2017). Regional differences in the preferred e-vector orientation of honeybee ocellar photoreceptors. Journal of Experimental Biology: 220: 1701-1708.

Warrington, R., Hart, N., Potter, I., Collin, S., Hemmi, J. (2017). Retinal temporal resolution and contrast sensitivity in the parasitic lamprey Mordacia mordax and its non- parasitic derivative Mordacia praecox. Journal of Experimental Biology: 220: 1245-1255.

Ryan, L., Hemmi, J., Collin, S., Hart, N. (2017) Electrophysiological measures of temporal resolution, contrast sensitivity and spatial resolving power in sharks. Journal of Comparative Physiology A-Neuroethology Sensory Neural and Behavioral Physiology; 203; 197-210.

Kelley, J., Davies, P., Collin, S., Grierson, P. (2017) Morphological plasticity in a native freshwater fish from semiarid Australia in response to variable water flows. Ecology and Evolution; 7; 6595-6605.

Nagloo, N. Hart, N. Collin, S. (2017) Ontogenetic changes in spectral sensitivity and retinal topography in the retina of the yellowtail kingfish (Seriola lalandi): Implications for the global Seriola aquaculture industry. Aquaculture;

Lisney, T Yopak, K Camilieri-Asch, V Collin, S. (2017) Ontogenetic Shifts in Brain Organization in the Bluespotted Stingray Neotrygon kuhlii (Chondrichthyes: Dasyatidae).Brain Behavior and Evolution

Fritsch, R., Ullman, J., Bitton, P. Collin S, Michiels N.(2017) Optic-nerve-transmitted eyeshine, a new type of light emission from fish eyes. Frontiers in Zoology

de Busserolles, F Cortesi, F Helvik, J Davies, W Templin, R Sullivan, R Michell, C Mountford, J Collin, S Irigoien, X Kaartvedt, S Marshall, J. (2017) Pushing the limits of photoreception in twilight conditions: The rod-like cone retina of the deep-sea pearlsides. Science Advances

Coimbra J, Pettigrew J, Kaswera-Kyamakya C, Gilissen E, Collin S, Manger R (2017) Retinal ganglion cell topography and spatial resolving power in African megachiropterans: Influence of roosting microhabitat and foraging. Journal of Comparative Neurology.

Moore, B., Tyrell, L., Kamilar, J., Collin, S., Dominy, N., Hall, M., Heesy, C., Lisney, T., Loew, E., Moritz, G., Nava, S., Warrant, E., Shaw, K.,Fernandez-Juricic, E. (2017) Structure and function of regional specializations in the vertebrate retina. Evolution Of Nervous Systems: The Evolution of the Nervous Systems In Nonmammalian Vertebrates; 1; 351-372.

Salas, C Yopak, K Lisney, T Potter, I Collin, S. (2017). The Central Nervous System of Jawless Vertebrates: Encephalization in Lampreys and Hagfishes. Brain Behavior and Evolution;

Kelley, J., Grierson, P., Davies, P., Collin, S. (2017) Water flows shape lateral line morphology in an arid zone freshwater fish. Evolutionary Ecology Research; 18; 411-428. ‘

Fritsch, R., Collin, S. P. and Michaels, N. K. (2017) Anatomical analysis of the retinal specializations to a crypto-benthic, micropredatory lifestyle in the mediterranean triplefin blenny Tripterygion delaisi. Frontiers in Neuroanatomy; 11; 1-15

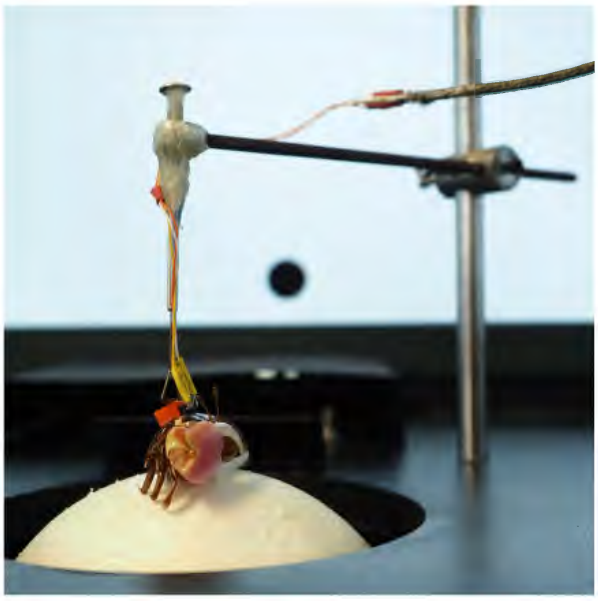
.

Werner, R, Wagner, H.-J., Collin, S. P., Marshall, N. J., Partridge, J. C., Jamieson, A., Whitmore, D. and Frank, T. (2017). R/V Sonne Expedition SO258/1 INGON. Adaptations of visual systems in animals of the mesopelagic twilight zone to the perception of bioluminescence. Final Cruise Report. Helmholt Centre for Ocean Research Kiel. ISSN Nr. 2193-8113, DOI10.3289/GEOMAR_REP_NS_38_2017

Kremers, J., Baraas, R. C. and Marshall, N. J. Human colour vision. (2017) Springer Series in Vision Research. Series Editors Shaun P. Collin and Justin N. Marshall. Springer. ISBN 978-3-319-44978-4

Kelley, J Taylor, I Hart, N Partridge, J.(2017) Aquatic prey use countershading camouflage to match the visual background. Behavioral Ecology

Maxwell, D Partridge, J Roberts, N Boonham, N Foster, G. (2017) The effects of surface structure mutations in Arabidopsis thaliana on the polarization of reflections from virus-infected leaves. Plos One



Neuroscience Research Papers

Armstrong, A., Clark, J., Ho, D., Payne, C., Nolan, S., Goodes, L., Harvey, L., Marshall, R., Galea, M., Dunlop,S. (2017) Achieving assessor accuracy on the International Standards for Neurological Classificationof Spinal Cord Injury. Spinal Cord; 55; 994-1001

Grosheva, M Rink, S Jansen, R Bendella, H Pavlov, S Sarikcioglu, L Angelov, D Dunlop, S. (2017) Early and continued manual stimulation is required for long-term recovery after facial nerve injury. Muscle & Nerve; 57; 100-106.

Harvey, L., Dunlop, S., Churilov, L., Galea, M. (2017) Erratum: Early intensive hand rehabilitation is not more effective than usual care plus one-to-one hand therapy in people with sub-acute spinal cord injury (‘Hands On’): a randomised trial. Journal Of Physiotherapy; 62; 88-95

Galea, M Panisset, M El-Ansary, D Dunlop, S Marshall, R Clark, J Churilov, L. (2017) SCIPA Switch-On: A Randomized Controlled Trial Investigating the Efficacy and Safety of Functional Electrical Stimulation-Assisted Cycling and Passive Cycling Initiated Early after Traumatic Spinal Cord Injury. Neurorehabilitation and Neural Repair; 31l 549-551.

Naidu, P., Norret, M., Smith, N., Dunlop, S., Taylor, N., Fitzgerald, M., Iyer, K. (2017) The Protein Corona of PEGylated PGMA-Based Nanoparticles is Preferentially Enriched with Specific Serum Proteins of Varied Biological Function. Langmuir; 33; 12926-12933.

Manthou, M Abdulla, D Pavlov, S Jansen, R Bendella, H Nohroudi, K Stein, G Meyer, C Ozsoy, O Ozsoy, U Behram Kandemir, Y Sarikcioglu, L Semler, O Schoenau, E Dunlop, S Angelov, D. (2017) Whole body vibration (WBV) following spinal cord injury (SCI) in rats: Timing of intervention. Restorative Neurology and Neuroscience; 35; 185-216.

Homman-Ludiye, J., Kwan, W., De Souza, M., Rodger, J., Bourne, J. (2017) Ephrin-A2 regulates excitatory neuron differentiation and interneuron migration in the developing neocortex. Scientific Reports; 7: 1

Clarke, D Penrose, M Penstone, T Fuller-Carter, P Hool, L Harvey, A Rodger, J Bates, K. (2017) Frequency-specific effects of repetitive magnetic stimulation on primary astrocyte cultures. Restorative Neurology and Neuroscience; 35; 557-569.

Clarke, D., Penrose, M., Harvey, A., Rodger, J., Bates, K. (2017) Low intensity rTMS has sex-dependent effects on the local response of glia following a penetrating cortical stab injury. Experimental Neurology; 295; 233-242

Cullen, C Tang, A O'Rourke, M Senesi, M Auderset, L Rodger, J Young, K. (2017) Repetitive Transcranial Magnetic Stimulation Drives Oligodendrocyte Addition in the Healthy Brain. Multiple Sclerosis Journal; 23; 82-94.

Yates, NJ, Giacci, MK, O'Hare Doig, RL, Chiha, W, Ashworth, BE, Kenna, J, Bartlett, CA & Fitzgerald, M (2017), 'Delayed treatment of secondary degeneration following acute optic nerve transection using a combination of ion channel inhibitors.' Neural Regeneration Research, vol. 12, no. 2, pp. 307-316. DOI: 10.4103/1673-5374.200814

Halstrom, A, MacDonald, E, Neil, C, Arendts, G, Fatovich, D & Fitzgerald, M (2017), 'Elevation of oxidative stress indicators in a pilot study of plasma following traumatic brain injury' Journal of Clinical Neuroscience, vol. 35, no. 1, pp. 104-108. DOI: 10.1016/j.jocn.2016.09.006

Kretzmann, J, Ho, D, Toshniwal, P, Evans, C, Norret, M, Nguyen, M, Veder, J-P, Jiang, H, Munshi, A, Blythe, A, Saunders, M, Archer, M, Fitzgerald, M, Keelan, J, Bond, C, Hurley, L, Kilburn, M, Smith, N & Iyer, KS (2017), 'Interaction of gold nanorods with genomic DNA' ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY, vol. 254.

Milbourn, HR & Fitzgerald, M (2017), 'Limiting oxidative stress following neurotrauma with a combination of ion channel inhibitors' Discovery Medicine, vol. 23, no. 129, 3, pp. 361-369.

Fehily, B., & Fitzgerald, M. (2017). Repeated Mild Traumatic Brain Injury: Potential Mechanisms of Damage. Cell Transplantation, 26(7), 1131-1155. DOI: 10.1177/0963689717714092

Yates, NJ, Lydiard, S, Fehily, B, Weir, G, Chin, A, Bartlett, CA, Alderson, J & Fitzgerald, M (2017), 'Repeated mild traumatic brain injury in female rats increases lipid peroxidation in neurons.' Experimental Brain Research, vol. 235, no. 7, pp. 2133-2149. DOI: 10.1007/s00221-017-4958-8

Krishnan, VS, White, Z, Terrill, JR, Hodgetts, SI, Fitzgerald, M, Shavlakadze, T, Harvey, AR & Grounds, MD (2017), 'Resistance wheel exercise from mid-life has minimal effect on sciatic nerves from old mice in which sarcopenia was prevented.' Biogerontology, vol. 18, no. 5, pp. 769–790. DOI: 10.1007/s10522-017-9714-8

Doig, RLOH, Chiha, W, Giacci, MK, Yates, NJ, Bartlett, CA, Smith, NM, Hodgetts, SI, Harvey, AR & Fitzgerald, M (2017), 'Specific ion channels contribute to key elements of pathology during secondary degeneration following neurotrauma' BMC Neuroscience, vol. 18, 62. DOI: 10.1186/s12868-017-0380-1

Naidu, P. S. R., Norret, M., Smith, N. M., Dunlop, S. A., Taylor, N. L., Fitzgerald, M., & Iyer, K. S. (2017). The Protein Corona of PEGylated PGMA-Based Nanoparticles is Preferentially Enriched with Specific Serum Proteins of Varied Biological Function. Langmuir, 33(45), 12926-12933. DOI: 10.1021/acs.langmuir.7b02568

Fehily, B., Fitzgerald, M., Yates, N., & Bartlett, C. (2017). There is not a simple linear relationship between increasing numbers of mild traumatic brain injury and increasing damage. Journal of Neurochemistry, 142, 178-178.

Invited & Contributed Presentations

Neuroecology

Peel, L., Collin, S. P., Stevens, G., Daly, R., Keating-Daly, C. and Meekan, M. (2017) First insights into the movement patterns and social structure of reef manta rays of the Seychelles. 4th International Conference on fish telemetry. Cairns, Australia. 19-23rd June 2017.

Mitchell, J. D., Langlois, T. J., McLean, D. L. and Collin, S.P. (2017) Understanding and quantifying shark depredation in a recreational fishery in Ningaloo Marine Park. Indo- Pacific Fish Conference. Tahiti 2-6 October 2017."

Invited & Contributed Presentations Neuroscience

Rodger, J. (2017) WA Brain Bee Finals, July 2017.

Rodger, J. (2017) Invited Professor, Bordeaux University, May-June 2017.

Rodger, J. Guangdong-Hong Kong-Macau Institute for CNS Regeneration (GHMICR),jJinan University, Guangzhou, September 2017.

Rodger, J. (2017) Brain stimulation as a tool to probe brain and mind, Australian Cognitive Neuroscience Society Adelaide.

Rodger, J. (2017) invited speaker, Emerging Researchers in Ageing, 6th November - 7th November, 2017— Perth, WA
Roger, J. (2017) Workshop presenter, STAWA Perth innovative teaching and assessment strategies trial. Journal of Physiotherapy; 62; 88.

Invited speaker, Emerging Researchers in Ageing, 6th November - 7th November, 2017— Perth, WA

Workshop presenter, STAWA Perth 2017 innovative teaching and assessment strategies

Dunlop SA. 2017 Immediate cooling and emergency decompression (ICED) following cervical spinal cord injury: Feasibility studies in Australia and New Zealand. Australian and New Zealand Spinal Cord Society, Perth. Keynote presentation.

Bates K. Science Lands in Parliament, 5th May 2017 WA State Parliament. The ABCs of repetitive transcranial magnetic stimulation (affects brain cells), poster presentation

.

O'Hare Doig RL, Giacci MK, Bartlett CA, Fitzgerald M. Determining the relative contribution of early oxidative changes, loss of OPCs and node/paranode abnormalities to long term function, in nerve vulnerable to secondary degeneration. Australian Neurotrauma Society Meeting, poster presentation

O'Hare Doig RL, Bartlett CA, Hodgetts SI, Dunlop SA, Hool L, Fitzgerald M. Excessive Ca2+ influx reduced via combinatorial treatment of ion channel inhibitors in an in vitro model of secondary degeneration. Symposium of WA Neuroscience, Perth WA, oral presentation selected from submitted abstract.

O'Hare Doig RL, Bartlett CA, Hodgetts SI, Dunlop SA, Hool L, Fitzgerald M. Specific combinations of Ca2+ channel inhibitors reduce excessive Ca2+ influx and increase neuronal and glial cell viability in vitro Australian Neurotrauma Society Meeting, poster presentation.

Giacci MK, Bartlett CA, Hart NS, Fitzgerald M. Assessing vulnerability and fate mapping oligodendroglia in areas of secondary degeneration following neurotrauma. Euroglia 2015 Poster presentation

O'Hare Doig RL, Bartlett CA, Giacci MK, Fitzgerald M. Calcium channel inhibitors limit lipid peroxidation and preserve myelin structure in nerve vulnerable to secondary degeneration. ANS/ISN 2015 Proc Aust Neurosci. Poster presentation

Giacci MK, Bartlett CA, Hart NS, Fitzgerald M. Life death and oxidative stress: fate mapping oligodendrocyte progenitor cells following neurotrauma ANS/ISN 2015 Proc Aust Neurosci. Poster presentation.

Ashworth B, Bartlett CA, Hart NS, Fitzgerald M. Optimization of light therapy for reduction of oxidative stress in partially transected spinal cord slices undergoing secondary degeneration. ASMR oral presentation selected from submitted abstracts.

Editorial boards Neuroecology

Shaun Collin

Editorial Board, Journal 'Visual Neuroscience (Cambridge Press)
Editorial Board, Journal of Morphology (Elsevier)
Editorial Board, Brain Behavior and Evolution (Karger)
Editorial Board, Open Ophthalmology" (Bentham Publishers).
Editorial Board, Frontiers in Aquatic Physiology
Guest Editor Frontiers in Behavioural and Evolutionary Ecology
International Editorial Board Member, University of Mauritius Research Journal
Series Editor, Springer Series in Vision Research (SSVR)

Julian Partridge

Journal of the Marine Biological Association of the UK Frontiers in Biology

Jennifer Kelley

Frontiers in Ecology and Evolution

Jan Hemmi

Experimental Biology
Plos One
Frontiers in Behavioral and Evolutionary Ecology

Wayne Davies

Associate Editor for Proceedings of the Royal Society B: Biological Sciences
Academic Editor for PLOS ONE
Associate Editor for Frontiers in Ecology and Evolution: Frontiers in Behavioral and Evolutionary Ecology
Advisory Board Member for Cellular and Molecular Life Sciences

Editorial boards Neuroscience

Sarah Dunlop

Editorial Board, Neurosignals. S Karger AG, Basel Editorial Board, Neural Regeneration Research Editorial Board, Evidence-based Preclinical Medicine

Jenny Rodger
Editor: special topic for Frontiers publications: There's method in our magnets: understanding rTMS from models, mice and men

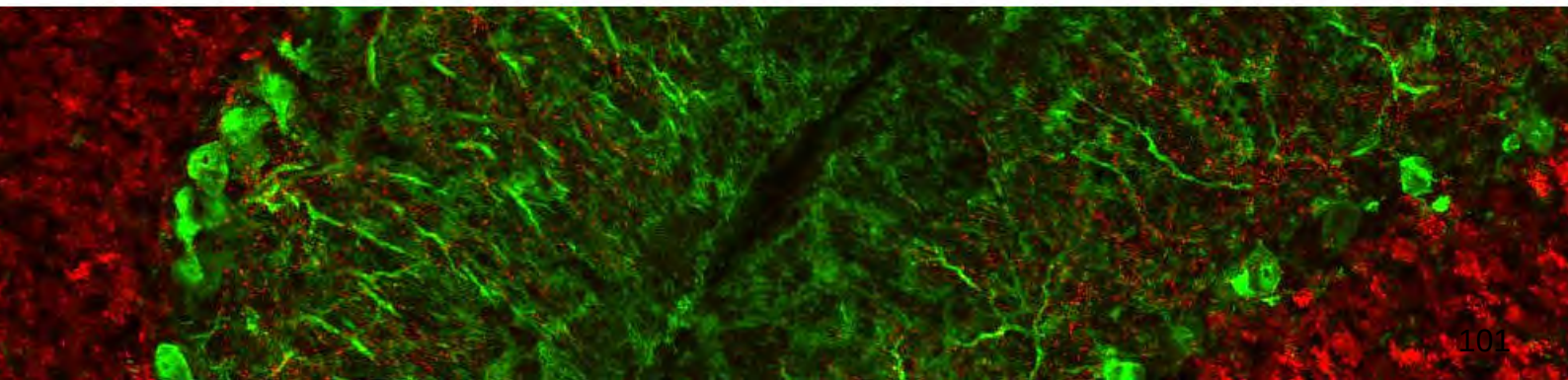
Editor at Peer J and Neural Regeneration Research

Melinda Fitzgerald

Associate Editor PeerJ
Editorial Board Member Frontiers Journals
Editorial Board Member Neural Regeneration Research

Kristyn Bates

Associate Editor Restorative Neurology and Neuroscience



External Collaborations Neuroecology

Shaun Collin

Prof. H.-J. Wagner (Universioty of Tuebingen, Germany)
Assoc. Prof. Nathan S. Hart (Macquarie University, Australia)
Prof. N. Justin Marshall (Queensland Brain Institute, The University of Queensland)
Dr. J. P. Coimbre (University of Witwatersrand, South Africa)
Prof. N. Michies (University of Tuebingen, Germany)
Prof. A. N. Popper (The University of Maryland, USA)
Prof. Trevor Lam (Australian National University)
Prof. Lars Scmitz and B. A. Cohn (W.M. Keck Science Department, Claremont McKenna, Pitzer, and Scripps Colleges, Claremont, CA, USA)
Prof. PC Wainwright (Department of Evolution and Ecology, University of California Davis, Davis, CA, USA)
John D. Pettigrew (Queensland Brain Institute, The University of Queensland)
Dr. Howard Gill (Murdoch University)
Prof. Ian C. Potter (Murdoch University)
Prof. Consolate Kaswera-Kyamakya (Facultė des Sciences, University of Kisangani, Kisangani , Democratic Republic of the Congo)
Prof. Emmanuel Gilissen (Department of African Zoology, Royal Museum for Central Africa, Tervuren , and Laboratory of Histology and Neuropathology, Universitė Libre de Bruxelles, Brussels, Belgium; Department of Anthropology, University of Arkansas, Fayetteville, Ark. USA)
Prof. Paul Manger (School of Anatomical Sciences, University of the Witwatersrand, Johannesburg , South Africa)
Prof. Andrew Iwaniuk (University of Lethbridge, Canada)
Assoc Prof. Nathan Hart (Macquarie University)
Prof. Robert McCauley (Curtin University)
Prof. Enrico Gennari (Oceasn Research, South Africa)
Dr. Fanny de Busserolles (University of Queensland)
Assoc. Prof. Charlie Huveneers (Flinders University)
Prof. Estaban Fernandez-Juricic (Indiana University)
Dr. Laura Ryan (Macquarie University)

Jan Hemmi

Dr. Ajay. Narendra (Australian National University)
Prof. J. Zeil (Australian National University)
Assoc. Prof. K. Valter (Australian National University)
Prof. J. Marshall (University of Queensland)
Prof. B. Webb (University of Edinburgh, Scotland)
Dr. M. How (University of Bristol, UK)
Prof D Tomsic,(University of Buenos Aires, Argentina)
Dr. W. Stuerzel, (German Aerospace Center, Germany)
Dr. N. Boeddeker, (Bielefeld University, Germany)

Julian Partridge

Dr Nicholas Roberts (University of Bristol)
Dr Martin Genner (University of Bristol)
Dr Kate Sanders, (University of Adelaide)
Dr David Gower, Dr Bruno Simoe and Prof Ron Douglas (City University)
Prof Jochen Wagner (University of Tuebingen, Germany)

External Collaborations Neuroscience

Sarah Dunlop

Professor Mary Galea, (Department of Medicine, Royal Melbourne Hospital. University of Melbourne)
Professor Ruth Marshall, Medical Director, Orthopaedic, Amputee & Spinal Injury Rehabilitation Service (Hampstead Rehabilitation Centre / Royal Adelaide Hospital)
Head, SA (Spinal Cord Injury Service)
Dr Jillian Clarke, (South Australian Spinal Cord Injury Research Centre, Centre for Orthopaedics and Trauma Research, Faculty of Health Sciences, The University of Adelaide)
Dr Peter Bragge, (National Trauma Research Institute, Monash University and The Alfred Hospital, Victoria, Australia).
Professor Garry Allison, (School of Physiotherapy and Exercise Science, Faculty of Health Sciences, Curtin University)
Professor John Buchanan, Associate Director of Allied Health, (Royal Perth Hospital)
Dr Peter Batchelor, (The University of Melbourne, Department of Medicine, Royal Melbourne Hospital)
Dr Camila Battistuzzo, (The University of Melbourne,

Department of Medicine, Royal Melbourne Hospital)
Professor Lisa Harvey, (John Walsh Centre for Rehabilitation Research, Sydney School of Medicine, University of Sydney, - Kolling Institute, Royal North Shore Hospital).
Professor Doychin Angelov, (Department of Anatomy I, University of Cologne, Germany)
Dr Stoyan Pavlov, (Department of Anatomy, Medical University Varna, Bulgaria)
Mr Jeffrey Thavaseelan, (Perth Urology Clinic, WA Australia)
Ms Carly Hartshorn, (Perth Urology Clinic, WA Australia)
Ann Watts, (State Rehabilitation Service, Fiona Stanley Hospital, WA, Australia)
Jen Bardsley, (State Rehabilitation Service, Fiona Stanley Hospital, WA, Australia)
Dr Peter Boan, (Departments of Microbiology and Infectious Diseases, Fiona Stanley Hospital and PathWest Laboratory Medicine, WA, Australia)
Matt Rawlins, (Departments of Pharmacy and Infectious Diseases, Fiona Stanley Hospital, WA, Australia)
Professor James Brock, (Department of Anatomy & Neuroscience, University of Melbourne University of Melbourne)

Jennifer Rodger

A/Prof John Reynolds, (University of Otago, New Zealand).
Prof Rachel Sherrard, (Universite Pierre et Marie Curie, France)
Prof Lisa Foa, Dr Kaylene Young, (University of Tasmania)
Prof Jeff Summers, (University of Tasmania)
Professor Fred Wolf, (Max Planck Institute, GÖttingen, Germany)
Dr Paul Croarkin, (Mayo Clinic, Rochester USA)
Prof Joe Walton, (University of Florida)
Dr Ann Maree Vallence, (Murdoch University)

Melinda Fitzgerald

Prof Anthony Coleman (University of Lyon, France)

Internal Collaborations Neuroecology

Shaun Collin

Dr. Di McLean (OGS)
Prof. Pauline Grierson (SAB)
Ms. Caroline Kerr (OGS)
Dr. Lucille Chapuis (OGS)
Prof. Julian Partridge (SBS)
Assistant Professor Kara Yopak (University of North Carolina Wlmington)
Dr. Ryan Kempster (Monterey Bay Aquarium)
Associate Prof. Jan Hemmi (SBS)
Dr. Jennifer Kelley (SBS)
Assoc. Prof. Wayne Davies (SBS)
Dr. Timothy Langlois (SBS)
Dr. Kathy Heel (School of Pathology and Laboratory Medicine)
Prof. Peter Davies (CENRM)

Julian Partridge

Dr Jan Hemmi (SBS)
Dr Di McLean (OGS)
Dr Tim Langlois (SBS)
Prof Shaun Collin (OGS)
Dr Jen Kelley (SBS)
Dr Thomas Wernberg(SBS)
Dr Scott Draper (FEMS)
Dr Belinda Cannell (SBS)

Jan Hemmi

Jen Kelley (SBS)
Wayne Davies (SBS)
Julian Partridge (SBS)
David Hunt (LEI/SBS)
Shaun Collin (SBS/OGS)
Jessica Meeuwig (SBS)
Yuri Ogawa (SBS)
Jeremy Shaw (CMCA)

Internal Collaborations Neuroscience

Sarah Dunlop

Associate Professor Jenny Rodger (SBS)
Associate Professor Lindy Fitzgerald (SBS)
Dr Nicole Smith (SBS)
Professor Killugudi Swaminathan-Iyer (School of Chemistry & Biochemistry)
Dr Alethea Rae, (School of Population & Global Health, UWA)
Associate Professor Kevin Murray, (School of Population & Global Health, UWA)

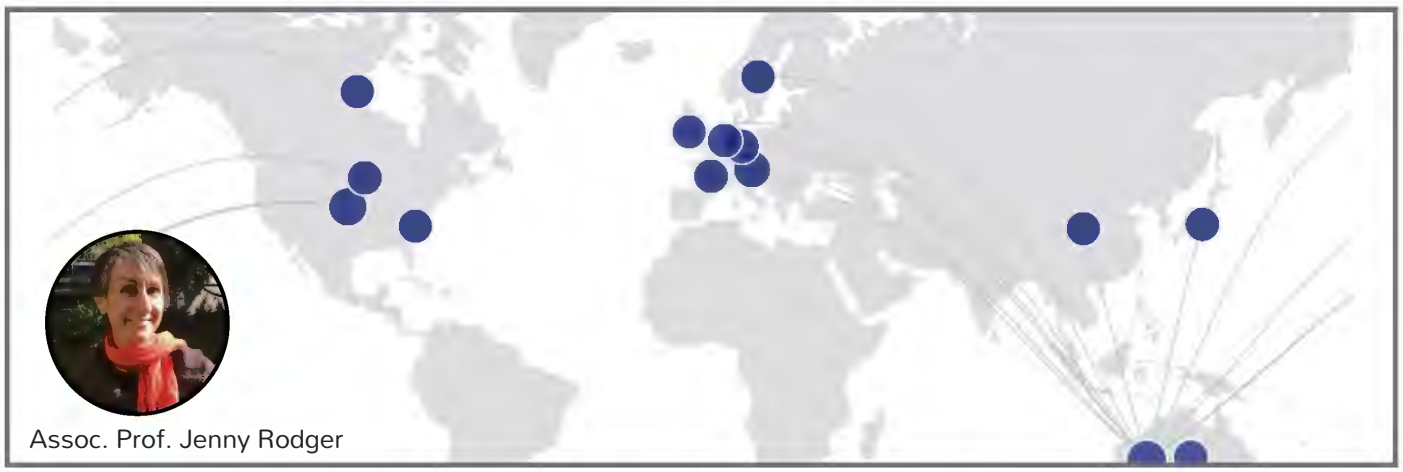
Jenny Rodger

A/Prof Michael Rosenberg (APHB)
A/Prof Christopher Etherton Beer (APHB)
E/Prof Alan Harvey (APHB)
Prof Livia Hool
Prof Jane Pillow
A/Prof Helmy Mulders
Prof Michael Small
JR: member of the Biozone (multidisciplinary collaborations at UWA)

SOME KEY GLOBAL RESEARCH COLLABORATIONS

Prof. Sarah Dunlop

Prof Shaun Collin



Assoc. Prof. Jenny Rodger

Dr Jan Hemmi

Assoc. Prof. Julian Partridge

Melinda Fitzgerald

Prof Sarah Dunlop (SBS)
Dr Alan Harvey (School of Human Sciences)
Ms Brooke Fehily
Dr Stuart Hodgetts (School of Human Sciences)
Dr Nicole Smith (School of Molecular Sciences)
Mrs Carole Bartlett (SBS)
Dr Marck Norret (School of Molecular Sciences)
Dr Nathaneal Yates (School fo Human Sciences)
Dr Killugudi Swaminatha Iyer (School of Molecular Sciences)

National & International Visitors Neuroecology

Shaun Collin

Prof. Vivienne Westbrook (University of Taiwan)

Jan Hemmi

Prof Barbara Webb (University of Edinburgh)

Neuroscience

Jenny Rodger

Marcus Wilson (University of Waikato, New Zealand

Funding Success Neuroecology

Shaun Collin

Galapagos Shark - Carcharhinus Galapagenous - in the Lord Howe Marine Park - Commonwealth - and the Lord Howe Island Marine Park NSW. Director of National Parks ($70,940)

The behavioural and physiological indicators of sleep in sharks. Sea World Research & Rescue Foundation ($18,844)

Utilising industry ROV imagery to increase knowledge of marine ecosystems globally. UWA Research Impact Grants ($19,977)

Advancing single cell analysis and isolation in Western Australia

Fisher deployed shark bite-off video surveys and testing of shark deterrents. Recfishwest Grant. ($27,000)

Assessment of shark attack avoidance/repellent technology. Shark Mitigation Systems (SMS), Unisearch. Shark Mitigation Systems Pty Ltd Grant. ($262,577)

The perception and function of bioluminescence in the Indian Ocean. UWA DVCR Grant. ($10,000)

Jan Hemmi

Polarization vision: insights from biological systems for imaging solutions. ARC discovery Projects. ($394,402)

Julian Partridge

Polarization vision: insights from biological systems for imaging solutions. ARC Discovery Projects. ($394,402)

A comparison of fish assemblages associated with two oil and gas pipelines and the adjacent seafloor. Woodside Energy Ltd. ($66,354)

Peer Review Net Enviro Benefit Analysis. BHP Billiton Iron Ore Pty Ltd. ($13,325)

Fish-Habitat Associations Around Wellheads, North-West Shelf, Western Australia. Western Australian Energy Research Alliance WAERA ex Woodside R2D3. ($47,250)

Funding Success Neuroscience

Sarah Dunlop

MHRIF Round 20 - Sarah Dunlop. WA Department of Health : Medical and Health Research Infrastructure Fund($14,501)

CODE SPINE - Enabling the 'ICED' clinical trial for acute spinal cord injury in WA. Neurotrauma Research Program (NRP) ($99,937)

Urinary tract management and infection control after spinal cord injury (extended) Neurotrauma Research Program (NRP) ($95,283)

Jennifer Rodger

Interaction of brain state with low intensity repetitive transcranial magnetic stimulation to promote repair. Neurotrauma Research Program (NRP) ($97,428)

High-frequency ultrasound and photoacoustic imaging for Western Australia. ARC Linkage Infrastructure Equipment Facilities,. ($621,198)

High-frequency ultrasound and photoacoustic imaging for Western Australia. Telethon Kids Institute. ($400,000)

High-frequency ultrasound and photoacoustic imaging for Western Australia. Edith Cowan University. ($10,000)

A music based mobile gait entrainment instrument for Neurotrauma injury rehabilitation. Neurotrauma Research Program (NRP) ($87,686)

ITTC, ARC Training Centre for Personalised Therapeutic Technologies. ($667,885 - 2016-2017 FY)

Enhancing activity to drive myelin repair in a Preclinical Model of Multiple Sclerosis. MS Research Australia. ($170,000)

Music and Movement Rhythm Training Using a Novel Mobile-Phone App. Medical Research Foundation. $18000

Melinda Fitzgerald

MHRIF Round 20 - Melinda Fitzgerald. WA Department of Health: Medical and Health Research Infrastructure Fund ($21,562)

Defining and limiting oxidative damage in oligodendrocytes and their precursors in multiple sclerosis: Multiple Sclerosis Research Australia ($21,000)

Awards and Recognition

Ms Aleksandra Gozt (Curtin University), Recipient Perron Institute PhD scholarship, 2017

Ms Lillian Toomey (UWA Hons student); recipient 2017 Geoffrey Blee Prize for Neuroscience

Ms Brooke Fehily (UWA), winner 2017 ASMR oral presentation prize

SCIENCE COMMUNICATION

SCIENCE COMMUNICATION

Increasingly, peoples to be and need to be informed about scientific topics. At the same time, publicly-funded researchers need to be publicly-accountable about their research. Science Communication is the practice of communicating science-related topics to non-experts. The School of Biological Sciences aims to bridge the gap between experts and the public by combining high quality research in biological sciences with training in science communication.

The communication of science takes many forms, from written articles in newspapers, magazines and blogs to standing in front of a non-expert audience to give a lecture or leading an interactive science workshop for students. However, many other terms are often used interchangeably for similar activities, including Public Engagement, Public Understanding and Outreach, although they all have slightly different emphases.

Research in science communication considers how different communities can engage with science. Our work is interdisciplinary, drawing on methods from science, education, psychology, social science, media studies and communication studies. We research how best to communicate complex scientific information and increase the impact of science engagement..

2017 RESEARCH HIGHLIGHTS

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PhD Completions

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Hon/Masters Completions

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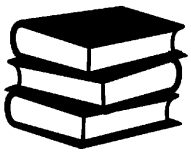
Visiting Researchers



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Publications

External Grants

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External Collaborations

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Internal Collaborations

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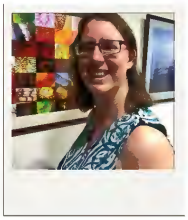
Awards & Recognition

SCIENCE COMMUNICATION

Academic Staff



Dr Miriam Sullivan

Science communciation

Evidence-based teaching

Evaluation | Value orientation

Dr Ann Grand

Science communciation

Digital tools and technologies

Research evaluation

HONOURS & MASTERS STUDENTS

Mr Samual Dragicevich (Hons)

Supervisor: Miriam Sullivan & Ann Grand

Ethics of data collection from social media

Ms Shanii Austin (MSc)

Supervisor: Miriam Sullivan & Ann Grand

How do teenagers respond to science shows?

Mr Rockwell McGellin (MSc)

Supervisor: Miriam Sullivan & Ann Grand

Does anthropomorphism in texts lead to misconceptions?

Ms Natasha Brown (MSc)

Supervisor: Peter Mawson & Miriam Sullivan & Phillip Bayer

Public attitudes toward culling of pest birds (Corella sp.)

Ms Amanda Mwenda (MSc)

Supervisor: Miriam Sullivan & Ann Grand

How do universities use online videos to promote STEM?

Mr Christian Polson-Brown

Supervisor: Peter Mawson & Miriam Sullivan

How does positive and negative framing influence acceptance of fox baiting in urban areas?

UNDERGRADUATE TEACHING

Unit Code	Level	Unit Name	SBS Teaching Staff
SCOM1101	1	Introduction to scientific practices	Miriam Sullivan, Patrick Finnegan
SCOM2205	2	Science presentations	Miriam Sullivan
SCOM2208	2	Science writing	Ann Grand
SCOM3318	3	Science communication practicum	Julian Partridge
SCOM3320	3	Communicating strategies for change	Ann Grand
SCOM3321	3	Science and the media	Ann Grand
SCOM3319	3	Exhibitions and interpretation	Miriam Sullivan
SCOM3322	3	Science performance	Miriam Sullivan
SCOM4402	4	Science Communication Literature Review	Miriam Sullivan, Ann Grand
SCOM5302	5	Contemporary Issues in Science Communication	Ann Grand
SCOM5308	5	Science communication peer review	Miriam Sullivan

PUBLICATIONS

Research Papers

Kolomaznik, M., Sullivan, M. & Vyvyan, K., (2017) Can Virtual Reality Engage Students With Teamwork? International Journal of Innovation in Science and Mathematics Education. 24, 4, p. 32–44

Hale, A. R., Young, V. L., Grand, A. & McNulty, C. A. M. (2017) Can Gaming Increase Antibiotic Awareness in Children? A Mixed-Methods Approach. JMIR Serious Games. 5, 1, 11 p., e5

Wright, D., Grand, A., MacLeod, B. and Abbott, L. (2017) Training as part of the capacity building ladder in Australian agriculture Proceedings of the 23rd European Seminar on Extension and Education Mediterranean Agronomic Institute of Chania, Greece July 4 – 7 2017

Carr, A., Grand, L. & Sullivan, M., (2017) Knowing me, knowing you. Science Communication. 39, 6, p. 771-781 11 p.

Grand, A. (2017) Having it all: ownership in open science. The silences of science: Gaps and pauses in the communication of science. Mellor, F. & Webster, S. (eds.). London: Routledge, p. 241-252

Grand A., and Sardo AM (2017) What Works in the Field? Evaluating Informal Science Events Frontiers in Communication DOI:10.3389/fcomm.2017.00022