Plenaries



Dr. Michael Whitehead is a Postdoctoral Research Fellow in the School of Biological Sciences at the University of Queensland. His research aims to understand the influence animal behaviour exerts on plant evolution and ecology, as well as the reciprocal effects plants have on animal perception and cognition. My discoveries contribute to a basic understanding of how plan boidiversity is generationed and maintained, how the sensory ecology of animals is shaped by plants, and how landscape and ecology combine to influence gene flow and diversity in both plants and animals.



Dr. Emma Sherratt is an ARC Future Fellow in the School of Biological Sciences at the University of Adelaide. Her research aims to understand how the diversity of animals and plants we see around us today came about. She is an expert in morphometrics - the statistical analysis of organismal form (shape and size), which she applies to the study of morphological trait evolution at macroevolutionary scales. She also uses these methods to answer questions pertaining to systematics and phylogenetics, biogeography, environmental adaptation, developmental biology and palaeontology.



Dr. Oliver Griffith is the AES Early Career Research Award winner and an ARC DECRA Fellow in the School of BioSciences at the University of Melbourne. His research uses wildlife models to address critical questions in ecology and evolution. Most notably, he aims to address how mutation and selection support the evolution of complex traits in animals, such as the evolution of new organs. To achieve this, his research integrates genomics, developmental biology, ecology, and ecophysiology using terrestrial vertebrates. His current projects use genetic, genomic, and cell biology techniques to identify how complex components of pregnancy have evolved.

Winners of the AES Student Research Awards are featured in the Student Plenary session and include **Emily Roycroft** from the University of Melbourne for her paper, "Phylogenomics uncovers confidence and conflict in the rapid radiation of Australo-Papuan rodents", published in *Systematic Biology*; **Damien Esquerré** from the Australian National University for his paper, "How mountains shape biodiversity: The role of the Andes in biogeography, diversification, and reproductive biology in South America's most species-rich lizard radiation (Squamata:Liolaemidae)", published in *Evolution*; and **Erin Macartney** from the University of New South Wales for her paper, "Effects of nutrient limitation on sperm and seminal fluid: a systematic review and meta-analysis", published in *Biological Reviews*.

	Day 1, November 25th		
8:00	Registration (8:00-8:45)		
8:45	Welcome (8:45-9:10) - Mike Kasumovic		
9:10	Student Plenaries: Erin Macartney, Damien Esquerre, Emily Roycroft (9:10-10:10); Chair - Lisa Schwanz		
	Room 5	Room 6	Room 7
	Co-Evolution Genomics; Chair - Rebecca Adrian	IUSSI; Chair - Simon Robson	Genetic Rescue; Chair - Timothee Bonnet
10:15	Carla Sgro - Sex-specific adaptation to environmental change	Simon Tierney - Social biology of an allodapine bee from the Blue Mountains Range	Georgina Wood - Combining genomics and meta'omics with phenotypic and environmental associations to facilitate future-proofing strategies in marine forest restoration
10:30	Tom Keaney - Do males matter for mitochondrial genome evolution?	Ben Oldroyd - A single gene defines a subspecies: the thelytoky locus of the Cape honey bee	Yael Rodger - Past and present genetic connectivity of a highly fragmented, endangered grassland daisy, Rutidosis leptorrhynchoides
10:45	Mikko Kivikoski - Effects of crossing-over interference on genomic recombination landscape	Paul Broekhuyse - A single gene is driving a subspeciation event in South African honey bees	Paul Rymer - Adaptive capacity to climate change through genomic variation and phenotypic plasticity

11:00	Coffee break (11:00-11:30)		
	Room 5	Room 6	Room 7
	Diversity and Variation; Chair - Rose Andrew	IUSSI; Chair - Simon Tierney	Plasticty; Chair - Dan Noble
11:30	Alyssa Weinstein - Reproductive isolation among allopatric and sympatric sexually deceptive Cryptostylis orchids that share a pollinator	Chris Reid - Weaver ant-inspired rules for self-assembly and swarm robotics	Loeske Kruuk - Will selection result in trait evolution? Examples from the wild
11:45	Carlos Joaquin Pavon Vazquez - Confirming the Australian origin of the Komodo dragon and revealing ancient gene flow with Australian monitor lizards through an integrative approach	Boris Yagound - Do honey bees faithfully transmit epigenetic marks to their offspring?	Erik Wapstra - Developmental plasticity: within and between population variation in phenological reaction norms in a lizard
12:00	Runa Kvamme Ekrem - Aiming for the moon: Maintenance of local adaptation to tidal regime	Carmen da Silva - Thermal adaptation with altitude in Fijian bees	Belinda van Heerwaarden - Constraints in upper thermal fertility limits suggest increased vulnerability to climate change
12:15	Julia Ryeland - Parent-offspring conflict and selection on integrative traits in emus"	Thomas Gillard - Honey bee STDs: under-reported, under-studied, or a non-issue?	Vanessa Kellermann - Comparing thermal performance curves across traits: how consistent are they?
12:30	Simon Griffith - Colour, sperm and chromosomal inversions across the contact zone of two sub-species of finch in northern Australia	Daisy Kocher - Queen pheromones and the evolution of eusociality	Daniel Noble - Plastic responses to novel environments are biased towards phenotype dimensions with high additive genetic variation
12:35	Jason Kennington - A long goodbye $\bar{\ }$ a genomic view of a species extinction	Tarli Conroy - Social immunity in the honeybee: self-sacrifice and forced ejection	Luke Amjah - Redundancy analysis identifies environmental drivers of phenotype in a recent invasion
12:40	Oliver Stuart - Glacier genetics: phylogenetic placement and species delimitation of the Rocky Mountain locust, Melanoplus spretus, using glacier-preserved samples		
12:45	Lunch / IUSSI Meeting (12:45-1:45) (Room 4)		
	Parental Effects; Chair - Angela Crean	Sexual Selection; Chair - Bruno Buzatto	Adaptation; Chair - Paul Rymer
13:45	Madeleine Beekman - Ectothermic vertebrates are too cool to care - explaining the absence of parental provisioning in reptiles, amphibians and fish	Thomas White - Flies exploit predictable perspectives and backgrounds to enhance iridescent signal contrast and mating success	Collin Ahrens - Adaptation to temperature among closely related tree species with similar distributions is driven by divergent evolution
14:00	Mylene Mariette - Embryonic eavesdropping on parental calls: implications for parent-offspring conflict	Pietro Pollo - When should male mate choice evolve?	Brodie Foster -Anthropogenic deforestation drives flight loss in a wing-polymorphic stonefly
14:15	Nathan Burke - Intralocus sexual conflict explains diverse patterns of inheritance of parental effects	Upama Aich - Should females mate with experienced males? Indirect effects of sexual experience on offspring fitness.	Beatrice Apirajkamol - Effect of oxidative stress on phenotype, gene function, and telomere length in Helicoverpa armigera (Lepidoptera: Noctuidae)
14:30	Joanna Rutkowska - How strong are non-genetic paternal effects compared to maternal ones? A meta-analysis of studies with dietary exposure in full-factorial experimental setup	Suzanna Gooley - Understanding the effect of demographics and background on mate preference and courtship investment in humans.	Mitchell Hodgson - Genetic and Non-genetic sources of variation in thermal traits in a Temperate Australian Lizard
14:45	Sarin Tiatragul - Anolis lizard nesting behaviour enhances embryo survival and development in urban areas	Michaela Parascandalo - Effects of increased sexual interaction on female reproductive success in Drosophila melanogaster are contingent on the history of sexual selection	Alizee Meillere - Effects of early-life anthropogenic noise exposure on development in the zebra finch

	Room 5	Room 6	Room 7
15:00	Robert Laird - Parental age effects and the evolution of senescence	selection and modifies selection on condition-dependent traits	Jake Martin - Sex and drugs: impacts of the pharmaceutical pollutant fluoxetine on female mate choice in the guppy, Poecilia reticulata
15:05	Renee Firman - Maternal stress leads to offspring sex ratio skews that mitigate male-male competition	· · · · · · · · · · · · · · · · · · ·	Lucinda Aulsebrook - Evolutionary impacts of the pharmaceutical pollutant fluoxetine on Daphnia magna
15:10	Xiyan Xiong - Modelling the effect of caesarean section and formula feeding on the development of human gut microbiota		Claudia Crowther - Examining the link between seasonal differences in pivotal temperature and egg mass in the freshwater turtle, Chrysemys picta
15:15	Coffee break (3:15-3:45)		
	Population Genetics; Chair - Mark de Bruyn	Plasticty; Chair - Dan Noble	Adaptation; Chair - Mylene Mariette
15:45	Rosalyn Gloag - Do invasive honey bees benefit from the high mutability of their sex locus?	reproduction in short-lived plants	Christina Miller - Using genetically divergent populations of zebrafish to better understand the interaction of genetic and thermal determinants of performance
16:00	Katarina Stuart - Local signatures of founding populations confound examination of adaptive divergence in invasive populations	Hayley Cameron - Can competitive asymmetries maintain offspring size variation	Chun-Chia Chou - Effects of temperature on reproductive timing in a tropical ectotherm
16:15	Iva Popovic - Twin introductions by independent invader mussel lineages are both associated with recent admixture with a native congener in Australia	'	Brooke Zanco - The role of nutrition in mediating larval trait responses to temperature is population specific in Drosophila melanogaster
16:30	Joshua Thia - The scale of genotype-phenotype-environment associations in panmictic marine populations	, ,	Anais Pessato - Early acoustic experience affects adult thermoregulation in the heat in zebra finches
16:45	Arndt Haeseler - Model finding in sequence evolution	, ,, ,	Avishikta Chakraborty - How does genetic variation modulate developmental plasticity in response to changing environmental conditions?
17:00	Stephanie Chen - Advancing genomic resources for myrtle rust research and management	Louise Noergaard - Expertimental evolution of parasite dispersal strategies in spatially dynamic landscapes	Luke Holman - The genetic architecture of sex- and age-specific fitness
17:05	Sarah Leeson - Population genetics of Australia's introduced dung beetles		Rebecca Fox - Mate choice decisions and parenting strategies in degrading environments: mind the evolutionary trap
17:10	Jessica O'Hare - Signatures of selection in the Sydney rock oyster		Fonti Kar - Life in cold blood: What can we learn from snakes and lizards about the evolution of life-history trade-offs?
17:15	Careers in Science Public Relations, Olivia Majorim, Target Malaria, Imperial College London (5:15-6:15); Chair - Lee Rollins Sponsored by the University of New South Wales Faculty of Science		



Olivia Majorin is the Communication Manager of Target Malaria, a non-for profit research consortium composed of 14 institutions across 3 continents aimed at developing and sharing an innovative vector control tool to save millions of lives from malaria in sub-Saharan Africa. She has worked with the NGOs Verbatims and Avocats Sans Frontières before joining Target Malaria in 2016. Her work experience includes public relations, media relations and engagement, video filming and productions, and communications. Olivia will discuss her career trajectory and routes to identifying and securing roles in public relations and communications in science.

	Day 2, November 26th		
8:00	Registration (8:00-8:45)		
8:45	Plenary, Dr. Michael Whitehead (8:45-9:35); Chair - Mike Kasumovic		
	Room 5	Room 6	Room 7
	Speciation; Chair - Jason Kennington	Reproduction - Chair; Boris Yagound	Mitochondrial Evolution; Chair - Ondi Crino
9:40	Melanie Wilkinson - Divergence in the auxin pathway mediates convergent evolution and speciation in an Australian wildflower	an Australian lizard	Ekta - The role of mito-nuclear interactions in conferring resistance to extreme heat stress in Drosophila melanogaster
9:55	Rose Andrew - Genomic and spatial landscapes of speciation in Eucalyptus	Charles Foster - Convergent evolution of placental function in the Australian sharpnose shark	Rebecca Adrian - Dropping like flies: mitochondrial genetics, Mother's Curse, and climbing performance in the fruit fly
10:10	Caroline Dong - When polymorphism and monomorphism meet: secondary contact between divergent lizard lineages		Venkatesh Nagarajan Radha - Sometimes, it is not okay to be selfish! Selection against selfishly replicating mitochondrial plasmids in the slime mould
10:25	Coffee break (10:25-10:50)		
	Behaviour; Chair - Emily Remnant	Sexual Selection; Chair - Jon Evans	Life History; Chair - Alistair Senior
10:50	Claudio Fichtel - Do cognitive abilities predict survival in wild grey mouse lemurs, Microcebus murinus?	Angela Crean - Boosting sperm performance with seminal fluid supplementation	Christofer Clemente - Using a bio-inspired climbing robot to explore the evolution of optimality in climbing lizards.
11:05	Dominic Mason - Repeatability of Aversive Learning in Zebrafish	Jessica Hadlow - Context-dependent selection and ejaculates	Anastasia Shavrova - What works best? Life history trade-offs for early and late life fertility in extreme conditions
11:20	Lizzie Speechley - Investigating the relationship between sociality and cognition in the Western Australian magpie	· · ·	Julian Beaman - On the evolutionary potential of metabolic allometry and growth rate
11:35	Jules Smith-Ferguson - Slime moulds 'learn' when taking a risk is safe	Megan Head - How do early and late life stress ineract to affect senescence?	Justin Chan - When to disperse in a patchy world: Exploring life history trade-offs for a saprotrophic fungus
11:50	Celine Frere - Inheritance pathways of social plasticity in nature	Tejinder Singh Chechi - Does sexual conflict mediate female effect on sperm competition?	Mariana Alvarez Noriega - Macroecological patterns in reproductive scaling
12:05	Caitlin Creak - Learning in predation	Malgorzata Lagisz - Research weaving: bringing meta-analysis, mapping and bibliometrics together	Michael Garratt - Mating without fertilization promotes a reproduction versus lifespan trade-off in female mice
12:10	Lunch (12:10-1:00)		
	Behaviour; Chair - Susi Zajitschek	Life History; Chair - Alizee Meillere	Adaptation; Chair - Rebecca Fox
13:00	Terry Ord - Predation on animals with conspicuous ornamentation and behaviour: a field test using robotic prey	Goncalo Igreja Andre - Quantitative genetics insight into the coevolution male and female genitalia in house mouse (Mus musculus domesticus)	Nathan Butterworth - The smelly sex lives of blowflies
13:15	Bob Wong - Territorial aggression and the maintenance of colour morphs in cichlid fishes		Evatt Chirgwin - Physical and physiological impacts of ocean warming alter phenotypic selection on sperm form

	Room 5	Room 6	Room 7
13:30	Lauren Harrison - Aggressive males and friendly females? Sex differences in the variation and repeatability of animal personalities	Jake Penny - Development of microfluidic devices as a platform for sperm chemotaxis analysis.	Adriana Rebolledo Navarro - Assessing thermal performance of early life stages of a marine ectotherm
13:45	Rose O'Dea - Animal Personality and Behavioural Syndromes in both Means and Variance	Rowan Lymbery - Environmental effects on ejaculates and the consequences for offspring fitness	Teresa Kutz - Diet mediates adaptation to increased temperature
14:00	Ivan Vinogradov - "Handedness" in fish: stimuli-dependence and repeatability	Matthew Hall - How sex differences in a host can alter the evolution and epidemiology of a pathogen	Amanda Pettersen - Investigating mechanisms underlying countergradient adaptation to cool climates in wall lizard embryos
14:15	Rachel Irwin - Thermoregulatory behaviour as a function of habitat patchiness	Sally Drapes - Effect of habitat ephemerality on life-history	Zac Wylde - Sexual asymmetry in the condition-dependence of genitalic and somatic trait integration.
14:20	Coffee break (2:20-2:45)		
	Co-Evolution; Chair - Martino Malerba	Life History; Chair - Matt Hall	Adaptation; Chair - Katheryn Hodgins
14:45	Shinichi Nakagawa - What explains co-phylognetic divergence between hosts and symbionts?	Dustin Marshall - Why do organisms grow?	Maddie James - The nature of parallel evolution in an Australian wildflower
	Alexander Mikheyev - Ecological success by parasites in spite of massive bottlenecks during host shifts	Carlos Aguilar-Trigueros - Measuring fungal life-history traits to predict fungal ecology	Sean Layh - Mitochondrial experimental evolution: testing the role of thermal selection and nuclear background in shaping population frequencies of mitochondrial haplotypes.
15:15	Nicole Fortuna - Modelling host-shift dynamics in coevolving host- parasite systems	Andre Nogueira Alves - From Food to an Egg ⁻ How does protein affect egg production and development in Drosophila melanogaster	Kiara L'Herpiniere - The effect of solar radiation on the evolution of egg pigmentation in Australian passerines
	Perry Beasley-Hall - Parallel gene losses in an endosymbiont are associated with independent host transitions to a subterranean lifestyle	Alexander Gangur - Eco-evolutionary consequences of resource abundance	Lachlan King - Effects of genetic drift on additive genetic variance can promote rapid adaptation to environmental change
15:45	Environmental genetics for biodiversity, biosecurity and monster hunting - Prof. Neil Gemmell (3:45-4:30); Chair - Lee Rollins		
16:30	Upstairs Bar / Poster Session (4:30-5:30)		
17:30	Using Gene Drive in Wild Populations (5:30-6:45); Chair - Lee Rollins A University of New South Wales Grand Challenges Event		



Neil Gemmell is the Professor of Reproduction and Genomics at the University of Otago. His research blends ecology, population, conservation and evolutionary biology with leading-edge genomics technologies. A recurring theme in his research is that of reproduction, with past and current projects spanning mating systems and mate choice, sperm function, sex determination, sex allocation and inter-sexual genomic conflict. A strong commitment to conservation has led Neil to develop new tools and research services for key end users in the conservation and biosecurity arenas, with the genetic control of pests a prominent resarch focus. Neil has recently gained global recognition for a modern-day investigation of one of the world's most mysterious bodies of water, Loch Ness, using the latest environmental DNA approaches.

	Day 3, November 27th		
8:00	Registration (8:00-8:45)		
8:45	Plenary, Dr. Emma Sherratt (8:45-9:35); Chair - Mike Kasumovic		
	Room 5	Room 6	Room 7
	Microbial Evolution; Chair - Essi Havula	Co-Evolution Genomics; Chair - Robert Dugand	Adaptation; Chair - Jessie Tanner
9:40	Wai Hoe Chin - From test-tubes to the gut: Does bacteriophage T4 evolve to persist in a life-like mucus layer of a gut-on-a-chip?	Tim Connallon - Quantifying maladaptation during the evolution of sexual dimorphism	Christopher Friesen - Experimental examination of telomere length in a polymorphic dragon
9:55	Amanda Norton - Accumulation and competition amongst Deformed wing virus genotypes in naïve Australian honeybees	Filip Ruzicka - Is the X chromosome a hotspot for sexually antagonistic polymorphisms? Biases in current empirical tests of theory	Szymon Drobniak - Evolving rainbows: deriving a spectrum of phylogenetic signals in avian colour evolution
10:10	Md Imtiazul Islam - Exploring the adaptation of the bacterial flagellar motor using ancestral sequence reconstruction and synthetic microbiology	Robert Griffin - Why does male-biased gene expression evolve so rapidly?	Andy TD Bennett - Plumage coloration in the Platycercus elegans ring species complex follows Gloger's rule
10:25	Matt Baker - Directed evolution of the ion channels of the bacterial flagellar motor	Richard Edwards - Investigating the evolution of complex, novel traits using whole genome sequencing and molecular palaeontology	Iliana Medina - Understanding ontogenetic variation in warning signals
10:30	Coffee break (10:30-11:00)		
	Life History; Chair - Thomas White	Plasticity; Chair - Rosalyn Gloag	Sexual Selection; Chair - Megan Head
11:00	Alistair Senior - Dietary Macronutrient Content, Age-Specific Mortality and Lifespan	Hamza Anwer - Obesogenic diets as a novel evolutionary stressor: the effects on phenotypic variation and its evolutionary implications	Rob Brooks - Gendered Fitness Interests: A Proposal Explaining How Family Composition Affects Socio-Political Attitudes and Behaviours
11:15	Essi Havula - Gene-diet interaction in the evolution of macronutrient tolerance and lifespan ⁻ lessons from the fruit fly	Cameron Hosking - Transgenerational Integration of Nutritional cues into Phenotype Development	Susi Zajitschek - Sex and Power: sexual dimorphism in trait variability and its evolutionary and statistical implications
11:30	llaria Venturelli - The evolution of life-history trade-offs: disentangling the effects of development time and body size on the evolution of lifespan	Ondi Crino - Mitochondria as the powerhouses of life-history strategies: testing links between the developmental environment, cellular metabolism, and fitness	Bruno Buzatto - Morph-specific artificial selection and correlated evolution between fighters, scramblers and females in a male dimorphic mite
11:45	Jussi Lehtonen - The evolution of longevity and the drift barrier	Harrison Eyck - Birds from matched developmental environments breed faster	Ifeoma Ugwuanyi - Connecting the pieces: evolution of genitalia in Cimicoidea (Heteroptera: Cimicomorpha)
12:00	Vanessa Higham - Complex interactions involving mitochondrial haplotype, nuclear genotype, sex and diet shape lifespan in Drosophila	Roshmi Rekha Sarma - DNA methylation levels affect performance, behaviour, morphology and mortality in larval amphibians	Samuel Lymbery - The outcome of sexual conflict depends on the social environment
12:15	Felix Zajitschek - Direct and cross-generational effects of nutritional and temperature stress	Corinne Letendre - The Evolution of Immune Function With Dietary Manipulation in the Decorated Cricket (Gryllodes sigillatus)	Khandis Blake - Sexual selection, mating markets, and female- female competition in humans: A tale of sexy selfies
12:30		Lunch (12:30-1:30) and Business Meeting (Room 4)	

	Room 5	Room 6	Room 7
	Life History, Chair - Felix Zajitschek	Diversity and Variation, Chair - Andrew Robinson	Phylogenetics, Chair - Will Cornwell
13:30	Russell Bonduriansky - Does ageing proceed similarly in natural and captive populations?	Cara Conradsen - Repeatability of spontaneous mutational parameter estimates in Drosophila serrata	Caitlin Cherryh - A new test for treelikeness in phylogenetic data
13:45	Eve Cooper - Diversity of ageing patterns in a highly promiscuous cooperative breeder	Juliet Byrnes - The relationship between neutral genetic diversity and species diversity: Four models	Jason Bragg - A macroscopic view of cryptic lineage diversity
14:00	Uddyalok Bangabash - The cost of being cool	Heidi Wong - Fitness consequences of a selfish supergene	Rob Lanfear - Confidence and truth in phylogenomics
14:15	Helma Nirubini Niranjan - Among-genotype variation and the role of diet in reproductive senescence	Robert Dugand - Does mutation explain standing genetic variation in complex phenotypes?	Simon Ho - Testing for correlations in evolutionary rates
14:30	Joe Tomkins - Towards an evolutionary understanding of human twinning	Alexander Sentinella - Seeing the forest for the genes: Using the q- profile to better detect landscape patterns of genetic differentiation	Timothee Bonnet - How fast are wild vertebrate populations evolving today?
14:45	Emily Richardson - Testing Werner's complex life cycle theory: measuring energy fluxes across ontogeny	Bill Sherwin - Evolution of Information or Entropy	Michael Jennions - The Selfish Reference Gene
15:00	Coffee break (3:00-3:30)		
	Microbial Evolution, Chair - Matt Baker	Adaptation, Chair - Szymon Drobniak	Eco-Evolution, Chair - Jason Bragg
15:30	Mike McDonald - Tracking horizontal gene transfer in experimental microbial populations	Kathryn Hodgins - Mating system impacts the genetic architecture of adaptation to heterogeneous environments	Yi-Kai Tea - Angels in disguise: Hybridisation in the marine angelfishes is widespread and occurs between highly divergent lineages
15:45	Nathan Lo - Genome erosion is linked to increased mutation rate in Blattabacterium endosymbionts	lan Gooi - Predicting adaptive evolution in heterogeneous environments from standing genetic variation	Will Cornwell - Ecosystem consequences of Darwin's abominable mystery: how angiosperms changed the global C cycle
16:00	Andrew Robinson - Evolution on the microscope: observing the development of antibiotic resistance in individual bacterial cells in real time	Isobel Booksmyth - No support for the fitness-associated sex hypothesis in natural Daphnia populations	Matthew Symonds - Phylogeny and ecology predict medicinal use in Australian plants
16:15	Emily Remnant - Virus sex in a honey bee pathogen	Gowri Rajaratnam - Sex brushes and dirty flies: The development and evolution of a novel abdominal appendage in male sepsid flies	Martino Malerba - Many small or few large? How prey size evolution affects food web productivity
16:30	Plenary Dr. Oliver Griffith (4:30-5:20), Chair - Lisa Schwanz		
17:20	Student Awards and Closing Comments (5:20–5:45) - Mike Kasumovic		
17:45	Conference Dinner (5:45 - 10:30)		