

Sunday July 1

GSA workshops  
(register for workshops in Building 2 from 8:30am)

13:00

15:00

15:15

16:00

16:15

16:30

16:45

Mixer 5:15-7:00 pm - Refectory

Monday July 2

8:00 Registration desk open  
UC Building 2 Foyer

9:00 **Medical Genetics:** Chairs: Leslie Quinn & Room 2B7  
**Ross Hannan:** Targeting the ribosomal RNA gene (DNA) loci to treat cancer

9:15 **Landscape Genomics:** Chairs: Arthur Georges Room 2B9  
**Meghan Castelli:** Sex reversal is a geographically and temporally widespread phenomenon in the central bearded dragon  
**Alex Carey:** Identifying the drivers of landscape genetic structure in a range expanding damselfly

9:30 **Emma Peel:** Marsupial and monotreme cathelicidins: characterisation and antimicrobial activity  
**Sonu Yadav:** Landscape genomics of a widespread agricultural pest, the wingless grasshopper (*Phaulacridium vittatum*)

9:45 **Ruth Jakell:** Elevated Wnt signalling disrupts heart fibroblast and may underlie some cases of human Heterotaxy  
**W-Kai Hez:** Historical biogeography and taxonomy of the anti-equatorial fish genus *Microcanthus* (Teleostei: Microcanthidae)

10:00 **Annee George:** High-throughput screens to identify therapeutic targets for the treatment of diamond blackfan anaemia  
**Craig Moritz:** Connecting speciation with macroevolution using phylogenomics

10:15 **Jessica Fenker:** Comparative phylogeography: How dispersal rates influence beta diversity of species  
**Benites Telamantes Becerra:** DAR-Tsq genotyping for bacterial identification: testing of complexity reduced methods

Morning Tea - Refectory

Plenary - **Marnie Blewitt**

Regulation of epigenetic silencing and chromatin architecture by the noncanonical SMC protein SMCHD1  
Chair: Janine Deakin & Kris Hardy  
Room 2B9

11:45 **Epigenetics:** Chairs: Janine Deakin & Kris Hardy Room 2B9  
**Alexander Capraro:** Waking the sleeping dragon - epigenetic mechanisms that govern hibernation in the central bearded dragon  
**Daniel Seleznik:** Diverse or depleted? Genetic differentiation across an expanding range in invasive Australian cane toads

12:00 **Erica Todd:** Sex reversal in hybrid fishes involves novel sex genes and developmental regression through a pluripotent-like state  
**Angela McGaughan:** Examining rapid evolution of insecticide resistance using exon capture on historical and contemporary pest moth samples

12:15 **Sudha Rao:** Interplay between the epigenome & chromatin signaling enzymes in metastatic cancers  
**Ryan Shufner:** Know your enemy: a population genetics approach to management of a native *Macadamia* pest

12:30 **Rami Al-Jabb:** The "Trojan Female Technique": a novel pest control method, combined with CRISPR/Cas9 to tackle current control limitations

Lunch - Refectory

ECR Activity - Top 5 tips for ECRs  
(panel: Andrew Pask, Bruce Deagle, Cris Fraser, Janine Deakin, Simon Ho)

13:45 **Developmental Genetics:** Chairs: Anna Macdonald & Room 2B7  
**Antonia Monteiro:** The origin of a novel complex trait: butterfly eyespots  
**Elise Furlan:** Assessing the benefits and risks of translocations in disjunctive species: A case study of the conservation management of the Gabe O'Reilly: Predicting Shannon's information for genes in finite populations - including conservation applications

14:00 **Erin Vaughn:** Genome of *Sycyn capricorn*, a model to investigate evolution of animal body plans  
**Johnette Peters:** Testing tumour: could coastal earthquake uplift provide opportunities for genetic change?

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14:30 **Cuneyt Caglar:** A new sponge model for regeneration? *Sycyn capricorn* (Calcarea, Calcarea) regeneration characteristics  
**Michelle Guzik:** Can we assess biodiversity of subterranean fauna from groundwater in the ancient pilbara (Western Australia) landscape using environmental DNA Metabarcoding

14:45 **Joshua Li:** Muscleblind regulates cell-type-specific alternative splicing of *Drosophila Discal2*  
**Ceridwen Fraser:** Genomic tests for "blocked" dispersal

15:00 **Olga Zaytseva:** The FUBP1 *Drosophila* ortholog Psi interacts with the Mediator Complex to modulate transcription of MYC and regulate growth  
**Anna Simonsen:** The phylogeography of bacteria in the Antarctic

Afternoon Tea - Refectory

Plenary - **Neil Gemmill (MJD White Award)**

Mitochondrial DNA, Mother's Curse and Me  
Chair: Dianne Gleeson  
Room 2B9

Poster session including Lightning talk- 4:30 - 6:30pm Refectory

Tuesday July 3

8:00 Registration desk open  
UC Building 2 Foyer

9:00 **Bioinformatics:** Chairs: Allen Rodrigo & Yicheng Zhu Room 2B9  
**Ira Deveson:** Chiral properties of DNA sequences  
**Evo/Eco Genetics:** Chairs: Ceridwen Fraser & Anna Simonsen  
**Clementine Lase:** Quantifying the effects of sex-biased transmission on local adaptation in *Drosophila*

9:15 **Hardip Patel:** The National Centre for Indigenous Genomics (NIG): a community resource for research  
**Katherine Moon:** Evolution of a terrestrial ectoparasite on a Trans-Tasman marine host: the penguin and the tick

9:45 **Tim McHenry:** Using character-compatibility matrices in haplotype discovery  
**Anna Macdonald:** The Oz Mammals Genomics Initiative: mammal genomics, evolution and conservation at a continental scale

10:00 **Renzo Balboa:** A pipeline to characterise structural variation in Indigenous Australian genomes  
**William Sherwin:** Genes are Information, so information theory is pervading genetics

10:15 **Arthur Georges:** Using gene synteny to define putative supercaffolds as an aid for physical mapping  
**Berenice Telamantes Becerra:** DAR-Tsq genotyping for bacterial identification: testing of complexity reduced methods

Morning Tea - Refectory

Plenary - **Cassandra Extavour**

Network analysis of signaling pathways reveals new mechanisms regulating the development and evolution of reproductive output in *Drosophila*  
Chairs: Maja Adamska  
Room 2B9

11:45 **Developmental Genetic:** Chair: Maja Adamska Room 2B9  
**Arjun Chahar:** From Servant to Master: the Ribosome's instructive role in hematopoietic cell fate determination  
**Earth BioGenome Project:** Harris Lewin  
Chair: Janine Deakin  
Room 2B7

12:00 **Noriko Funayama:** What we can learn from sponges about the molecular and cellular bases of animal stem cells  
**Owen Marshall:** When is a global repressor not a repressor? Genome-wide profiling of the Snail family member transcription factor Worm in

Lunch (GSA AGM) - Refectory and (AGM -2B4)

Alexandra Pavlova

Climate-driven mito-nuclear selection in Australian birds: developing a multidisciplinary approach  
Chair: Clare Holleley  
Room 2B9

14:00 **Adaptation:** Chairs: Clare Holleley & Cat Campbell Room 2B9  
**Jonathon Waters:** The evolution of flightless insects: natural selection underpins parallel clinal wing reduction in alpine stoneflies  
**Chairs:** Tariq Ezaz & Sally Potter Room 2B7  
**Emory Ingles:** Homogenisation of telomere length in a transmissible cancer, devil facial tumour 2

14:15 **Perry Grace Beasley-Hall:** Continental aridification correlates with the parallel acquisition of burrowing behaviour in Australian giant cockroaches (Blaberidae: Geoscaphineae)  
**Komsom Sikulnath:** Comparison of age-related sex differences and telomere length of siamese cobra (*Naja kaouthia*) with remarkable amplification of telomeric repeats on the W sex chromosome

14:30 **Julian Byrnes:** Recombination between genes with fitness interactions - how much is enough? Empirical data and simulations  
**Robert Maderok:** Dissecting the chromosomal composition of mutagen-induced micronuclei in *Brachyodum distachyon* using multicolour FISH

14:45 **Kerensa McElroy:** Beyond trait-based selection: adaptive diversity for sustainable agriculture  
**Peta Hill:** Conserved sex-linked markers in a snake with population divergence in sex determination

Afternoon Tea - Refectory

Education Award winner - **Jenny Donald**

Helping our undergraduate students to think like scientists

Genetics Education Panel Discussion Room 2B9  
What do students need to learn in genetics?  
Panel: Jenny Donald, Jenny Graves, Neil Gemmill, Ira Deveson, Emma Smith

Registration desk open  
UC Building 2 Foyer

GSA Conference and Awards Dinner 7 -10 pm - National Press Club  
(buses leave 6:20pm)

Wednesday July 4

8:00 Registration desk open  
UC Building 2 Foyer

Welcome to Country and Opening APCCG: Room 2B9

Plenary - **Harris Lewin**

Chromosomes in the Light of Evolution Chairs:  
Chair: Jenny Graves  
Room 2B9

Morning Tea - Refectory

10:45 **GSA - eDNA:** Chairs: Dianne Gleeson & Jonas Bylemans Room 2B7  
**Anthony Charlton:** The murky truth about metabarcoding data: how a lack of sufficiently stringent QA/QC protocols is impacting metabarcoding research  
**APCCG - Cytogenetics in the Genomics Eras** Chairs: Tariq Ezaz & Rebecca O'Connor Room 2B9  
**Jenny Graves:** Cytogenetics in the Genomics Eras

11:00 **Jonas Bylemans:** A performance evaluation of targeted eDNA monitoring and eDNA metabarcoding to determine fish distributions  
**Darren Griffin:** Chromosome-level genome assembly and reconstruction of evolutionary events in birds and other dinosaurs

11:15 **Jemma Geoghegan:** Using meta-transcriptomics to reveal the hidden diversity of RNA viruses in aquatic hosts  
**Aurora Ruiz-Herrera:** Testing the Integrative Breakage Model: A multidisciplinary approach for the study of genome plasticity

11:30 **Jack Rojahn:** Monitoring post-release survival of the Northern Corroboree frog using Environmental DNA  
**Hideoyuki Tanabe:** Chromosome architecture in human and gibbons: Evolutionary consideration for radial 3D arrangements of chromosome territories

11:45 **Oliver Mead:** Structure and origin of the calcareous sponge microbiome  
**Hilda Pickett:** From Genomes to Telomeres

12:00 **Bruce Deagle:** Counting with DNA in environmental metabarcoding studies: are sequence counts useful?  
**Chair:** Janine Deakin  
**Emily Wong:** Uncovering the principles underlying animal gene regulation

APCC Lunch - Refectory

12:30 GSA awards & closing - Room 2B7

13:30 **APCCG - Epigenetics** Chairs: Jenny Graves & Janine Deakin Room 2B9  
**Ruth Appels:** Chromosome and genome structure as a basis for assigning function to genes underpinning wheat agronomic traits

13:45 **Yasuhiko Mukai:** Chromosomal distribution of diversified chromatin modification marks in Asian orchids  
**Emory Ingles:** DNA methylation patterns in two marsupial lineages with diverging patterns of karyotype evolution, *Dasyurids* and *Petrogales* (rock-wallabies)

14:00 **Paul Waters:** Unique mechanisms to silence the marsupial X  
**Lee Wong:** The roles of oncohistone H3.3 and ATRX abnormalities in cancers

Afternoon Tea - Refectory

15:00 **APCCG - New Techniques** Chairs: Darren Griffin & Zuzana Majtanova Room 2B9  
**Kiichi Fukui:** Contribution of micro- and nano-technology to chromosome science

16:00 **Hengxian Yu:** Chromosome-specific painting in rice using bulked digonucleotides and its applications  
**Rebecca O'Connor:** Molecular cytogenetic screening for chromosomal abnormalities in agricultural

16:15 **Nobuko Ohmid:** Molecular Cytogenetics for Plant Genetics and Breeding

16:30

16:45

17:00

17:15

Mixer and Poster including Lightning talks 5:15 - 7:00 pm: Refectory

SCR BOARD MEMBERS' MEETING 7:00 pm - 8:00 pm  
ROOM 2B4