WELCOME TO

THE 43RD POPULATION GENETICS GROUP MEETING

Tuesday 5th – Friday 8th January 2010

School of Biological Sciences

University of Liverpool

SPONSORS

This meeting has been kindly sponsored by the following organisations:

The Genetics Society

The Fisher Memorial Committee

Nature Publishing Group (Heredity)

Oxford University Press

Cell Press (Trends in Ecology & Evolution)

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General information

Location. All talks will be held in the Life Sciences Building (no. 215) on the campus map.

Arrival. Conference packages will be distributed from the registration desk in the Guild of Students (building 501) on Tuesday evening 18.00 – 20.00 and then in the foyer of the Life Sciences Building from Wednesday onwards. A buffet meal and bar will be available in Mountford Hall (within the Guild of Students building)

Information for speakers. It is the speaker's responsibility to load PowerPoint presentations (for PC) onto computers in the appropriate lecture theatre well before each session. Talks can also be loaded onto computers on the previous day. Please ensure that filenames begin with the time of your talk followed by your surname (e.g. 1015_Smith.pptx) and are filed in the appropriate folder.

Chairs. Please note that the last speaker of each session should act as chair for that session.

Information for posters. Poster boards will be available in Mountford Hall from Wednesday morning and we will provide an appropriate means to attach them. Please ensure posters are in place by the poster session and drinks reception at 17.30 on Wednesday. The number of each poster is given in the abstracts at the end of this booklet and corresponds to a place on a poster board. There will be a poster competition for students. Posters will remain in place for the duration of the conference.

Meals and Bar. All meals will be served in Mountford Hall (building 501). Meal tickets will be in your conference package and must be presented if you want to eat. Please inform a member of the waiting staff if you have any special dietary requirements. Mountford Hall also houses a sizeable bar, which will be open in the evenings.

Wine reception. There will be a wine reception on Thursday at 18.30 in the Victoria Building (building 421).

Conference Dinner. Will be in Mountford Hall at 19.30 followed by a Ceilidh band. Dress will be informal.

Hotels. The Adelphi and The Liner are both near Lime Street Station, at the foot of Brownlow Hill and London Road.

Shops: Brownlow Hill has a small strip of shops, including a post office and cash machines. The big department stores are down towards the river in Liverpool One.

Medical. The Royal Liverpool University hospital is situated between Prescott Street and West Derby Street (building 316) and has an accident and emergency department. Brownlow Group Medical Practice (building 358) on Pembroke Place has GPs. Both are within 5 min walk of Biological Sciences. There are pharmacists on London Road and in the St Johns Centre (opposite the Adelphi).

Internet. Temporary passwords will be available from the registration desk. Please specify if you will be connecting using wireless through your own laptops or one of the Liverpool University PCs. A room of PCs is available on the first floor of the Life Sciences Building.

Programme of talks

Wednesday 6th January 2010			
Time	**Lecture Theatre 1**	**Lecture Theatre 2**	**Lecture Theatre 3**
09.00-09.10	Welcome and introduction (Lecture Theatre 3)		
09.10-10.00	PLENARY (Lecture Theatre 3) **Tom Eickbush** University of Rochester Explaining the paradox of concerted evolution and the maintenance of mobile elements in rRNA gene loci		
10.00-10.20	**Simon Aeschbacher** U. Edinburgh and IST Austria Choice of summary statistics in ABC via boosting	**Mike Brockhurst** University of Liverpool Antagonistic coevolution accelerates molecular evolution	**James Buckley** University of Bristol Testing for evolutionary responses to climate change in the Brown Argus butterfly, *Aricia agestis*
10.20-10.40	**Kevin Dawson** Rothamsted Likelihood-free inference of population structure and local adaptation in a Bayesian hierarchical model	**Michael Magwire** University of Cambridge Identifying genes affecting resistance to sigma virus in *Drosophila melanogaster*	**Stuart Baird** University of Porto The house mouse Y invasion: signals from the X
10.40-11.10	BREAK		
11.10-11.30	**Eric Bazin** CIRAD A simulation study of the determinants of adaptation of an invasive species.	**Greg Hurst** University of Liverpool An infectious sex ratio bias: Interspecific transfer of a male-killing bacterium through shared host usage	**Ying Chen** University College London Gene expression and clinal body size variation in Australian *Drosophila*
11.30-11.50	**Per Sjödin** University of Uppsala A statistical framework to test the continuity between an ancient and a modern population	**Konrad Lohse** University of Edinburgh Quantifying population history in a non-model organism: longitudinal spread of the oak gall parasitoid *C. fungosa* inferred from 20 introns.	**Paul Craze** University of Bristol Neutral unbalancing of balanaced polymorphisms in subdivided populations, with an example from left-right shell-coiling in tree snails.
11.50-12.10	**Brian Charlesworth** University of Edinburgh Muller's ratchet and the degeneration of a newly-evolved Y chromosome	**Samit Kundu** University of Kent The molecular evolution of beak and feather disease virus in the Mauritius parakeet	**Andy Foote** University of Aberdeen Genetic differentiation within a North Atlantic killer whale ecotype
12.10-12.30	**Mattias Jakobsson** University of Uppsala The relationship between F_{st} and the frequency of the most frequent allele	**Emily Hornett** University of Liverpool Evolution in action: changes in neutral genetic variation reveal the intensity of selection during the spread of suppressors of male-killing parasites	**Mike Bruford** Cardiff University Contrasting genetic structure in two species of South American camelid
12.30-14.00	LUNCH (Mountford Hall)		

Wednesday 6th January 2010 (cont)			
Time	**Lecture Theatre 1**	**Lecture Theatre 2**	**Lecture Theatre 3**
14.00-14.20	**Jerome Kelleher** University of Edinburgh Simulating evolution in continuous space	**Martin Carr** University of York A novel clade of active chromoviruses from the genome of the Holozoan *Capsaspora owczarzaki*	**Arjèn E. Van't Hof** University of Liverpool Evidence for a selective sweep around the *carbonaria* locus in the peppered moth
14.20-14.40	**Michael Kopp** University of Vienna Adaptation of a quantitative trait to a moving optimum	**Mark McMullan** University of Hull Spatial and temporal genetic variation at the Major Histocompatibility Complex (MHC) in wild guppy populations with contrasting parasite faunas	**Sonja Grath** University of Munich Studying adaptive evolution of sex-biased genes in *Drosophila ananassae*
14.40-15.00	**Shuhei Mano** Nagoya City University The Ancestral Bias Graph: conversion among multigene family and migration among subdivided population	**Adrien Rieux** University of Montpellier Landscape genetics and gene flow in the banana pathogenic fungus *Mycosphaerella fijiensis*	**Christoph Haag** University of Fribourg Detecting signatures of balancing selection in structured populations: *Pgi* in Daphnia and butterflies
15.00-15.20	**Adam Eyre-Walker** University of Sussex What can evolution biology tell us about genome wide association studies?	**Nick Priest** Universtiy of Bath Consequences of cold-seeking behaviour for pathogen and host.	**Nicola Nadeau** University of Cambridge An expression screen of the HmYb butterfly mimicry locus: multiple associations inherited with colour pattern
15.20-15.45	BREAK		
15.45-16.05	**Bjarki Eldon** University of Oxford Structured coalescent processes, F_{st}, and large offspring numbers	**Mats Pettersson** Swedish Uni of Agricultural Sciences Genome wide effects of selection in divergently selected chickens	**Katrín Halldórsdóttir** University of Iceland Sequence variation and selection at globin genes in Atlantic Cod, *Gadus morhua*
16.05-16.25	**Paris Veltsos** University of St Andrews Differential introgression of ribosomal DNA subgroups across a hybrid zone in the grasshopper *Podisma pedestris*	**Patrick Hamilton** University of Exeter Intersex gonads, genetic diversity, female selection and reproductive performance of male fish	**Irene Kelle** Eawag Adaptive genetic diversity across replicated altitudinal gradients in trout
16.30-17.30	The Fisher Memorial Lecture (Lecture Theatre 3) **Brian Charlesworth & Deborah Charlesworth** University of Edinburgh Fisher and modern evolutionary genetics		
17.45	POSTER SESSION AND WINE RECEPTION (Mountford Hall)		
19.15	DINNER (Mountford Hall)		

Thursday 7th January 2010			
Time	**Lecture Theatre 1**	**Lecture Theatre 2**	**Lecture Theatre 3**
09.10-10.00	PLENARY (Lecture Theatre 3) **Neil Hall** University of Liverpool Fast forward genetics using next generation genome sequencing		
10.00-10.20	**Stephen Green** University of Kent Dating the origins of dwarfism in the Hog Island Boa constrictor: long-term isolation or rapid evolution?	**Anna Santure** University of Sheffield Using large marker panels to estimate inbreeding and relatedness: 771 SNPs typed in a zebra finch pedigree	**Casey Bergman** University of Manchester An age-of-allele test of neutrality for transposable element insertions
10.20-10.40	**Alain Frantz** University of Sheffield Using isolation-by-distance-based approaches to assess the barrier effect of linear landscape elements on badger (*Meles meles*) dispersal	**Christian Schlötterer** VetMedUni Vienna Population genetics using NGS of pooled samples	**Christopher Dixon** University of Oxford An estimate of the rate of fixation of deleterious mutations using the separation between two serine codon groups
10.40-11.10	BREAK		
11.10-11.30	**Philipp Wesche** University of Edinburgh Sex ratio and sexual selection	**Claire Raisin** DICE, University of Kent. Population genetics of a recovering endemic island species	**Maria Warnefors** University of Sussex Recent retrotransposition events have not affected hominid gene expression levels
11.30-11.50	**Simon Whelan** University of Manchester A phylogenetic method for inferring rate shifts during the evolution of plastids	**Einar Arnason** University of Iceland Fisheries induced evolution at a single locus: interaction of behavior and fisheries pressure	**Ines Hellmann** MFPL Vienna Dinuleotides in primate evolution
11.50-12.10	**Weihao Zhong** University of Bath A population genetic model of sex-specific maternal effects and sexual conflict	**Delphine Vanhaecke** University of Aberystwyth Impact of aquaculture on the population genetics of a native fish in Chile.	**Falk Hildebrand** University of Brussels Evidence of selection upon genomic GC-content in bacteria
12.10-12.30	**Kai Zeng** University of Edinburgh A simple multi-allele model and its application to identifying preferred/unpreferred codons using polymorphism data	**Amber Teacher** University of London A novel application of phylogeography for conservation and management.	**Nina Stoletzki** University of Sussex The evolution of protein binding sites
12.30-14.00	LUNCH (Mountford Hall)		

Thursday 7th January 2010 (cont)			
Time	**Lecture Theatre 1**	**Lecture Theatre 2**	**Lecture Theatre 3**
14.00-14.20	**Cecile Bacles** University of Stirling Defining evolutionary significant units in widespread continuous tree species: Implications for genetic resource management of spotted gums in subtropical Australia.	**Katy Morgan** University of Manchester Comparative phylogeographical approach reveals a common influence of Pleistocene forest fragmentation in shaping Anopheline genetic diversity across Indochina.	**Alan Hodgkinson** University of Sussex The genomic distribution and local context of Human and Chimpanzee coincident SNPs
14.20-14.40	**Sophia Ahmed** INRA Bordeaux Phylogeography and population genetics give insights into the invasion routes and rapid evolution of the sunflower downy mildew pathogen *Plasmopara halstedi.*	**David Weetman** LSTM Mapping insecticide resistance-associated variants in wild *Anopheles gambiae* populations: prospects for GWA studies.	**Sophie Marion de Proce** University of Edinburgh, IEB. Insertions and deletions in two intron polymorphism datasets (*D. americana* and *D. simulans*)
14.40-15.00	**Deborah Charlesworth** University of Edinburgh. Nucleotide diversity in *Silene latifolia* pseudo-autosomal genes	**Charles Wondji** LSTM Genetic mapping of genes conferring pyrethroid resistance in *Anopheles funestus*, major malaria vector in Africa	**Carina Mugal** Uppsala University Conservation of neutral substitution rate and substitution rate asymmetries in mammalian genes.
15.00-15.20	**Juliette de Meaux** Max Planck Institute Cis-regulatory (epi)-divergence in *Arabidopsis* interspecific hybrids	**Naomi Dyer** LSTM Next generation sequencing of the microbial fauna of tsetse	**Fyodor Kondrashov** Center for Genomic Regulation Evolutionary divergence of distantly-related protein sequences
15.20-15.50	BREAK		
15.50-16.10	**Toni Ingolf Gossmann** University of Sussex Genome wide analyses reveal little evidence for adaptive evolution in plants	**Darren Obbard** University of Edinburgh Population-genetic tests for selection in the *An. gambiae* complex	**Katie Ridout** University of Oxford Positive selection differs between protein secondary structure elements in *Drosophila*
16.10-16.30	**Olivier Lepais** University of Bordeaux Reproductive patterns shape introgression dynamics and species succession within the European white oak species complex.	**Susana Barbosa** LSTM Modeling insecticide resistance: measuring selection	**Pernilla Vallenback** University of Lund Characterization of the flanking regions of the horizontally transferred *PgiC2*-gene
16.30-17.20	**Laurence Loewe** University of Edinburgh Distributions of mutational effects and robustness in an evolutionary systems biology model of the circadian clock in the green alga *Ostreococcus tauri*	**Magdalena Zarowiecki** Natural History Museum Testing alternative hypotheses of ecological and geographical speciation in the Indo-Oriental mosquito, *Anopheles sundaicus* s.l.	**Daniel Wilson** University of Chicago Adaptive events in the evolution of Hominids and *Drosophila*
17.20	BUSINESS MEETING (Lecture Theatre 3), followed by Heredity Board meeting (committee room)		
18.30	WINE RECEPTION (Victoria Gallery & Museum, Victoria Building)		
19.30	CONFERENCE DINNER & DANCE (Mountford Hall)		

Friday 8th January 2010			
Time	**Lecture Theatre 1**	**Lecture Theatre 2**	**Lecture Theatre 3**
09.10- 10.00	PLENARY (Lecture Theatre 3) **John Pannell** University of Oxford Colonisation and the evolution of sexual systems in a cosmopolitan weed		
10.00- 10.20	**Cock van Oosterhout** University of Hull The MHC paradox of "forbidden haplotypes"	**Pontus Skoglund** Uppsala University Inferring the origin of domestic dogs using genomic shotgun sequences from ancient and extant canids	**Tobias Warnecke** University of Bath Asking the experts – incorporating knowledge of chaperoning dynamics elucidates the role of codon usage in reducing misfolding errors
10.20- 10.40	**Daniel Rankin** University of Zürich, Switzerland Addictive toxin-antidote complexes are favoured under kin structure and can drive strain cycling	**Vera Warmuth** University of Cambridge Large-scale patterns of genetic diversity in domestic horse populations	**Dave Gerrard** University of Manchester Correlates of embryonic gene expression evolution in *Drosophila*.
10.40- 11.10	BREAK		
11.10- 11.30	**Ovidiu Paun** Royal Botanic Gardens Kew Stable epigenetic effects impact evolution and adaptation in allotetraploid species of Dactylorhiza (Orchidaceae)	**Andrea Simon** University of Hull Evolutionary history of the invasive topmouth gudgeon (Pseudorasbora parva) inferred from mtDNA sequences	**Lori Lawson Handley** University of Hull Natural selection on human mtDNA: was global diversity shaped by climate?
11.30- 11.50	**Michael Stocks** Uppsala Universit. Polymorphism, divergence and adaptation in spruce species	**Barbara Walser** University of Fribourg Strong impact of metapopulation structure on genetic diversity and differentiation in *Daphnia magna*	**Isabel Magalhaes** University of Hull A sympatric colour polymorphism as an arrested early stage of speciation in cichlid fish of Lake Victoria
11.50- 12.10	**Graham Muir** University of Oxford Population genetics of speciation in dioecious *Silene* (Section Elisanthe)	**Neil Walsh** University of Cambridge Genetics of carotenoid colouration in the red-billed quelea	**Richard Merrill** University of Cambridge Pervasive linkage of speciation genes in *Heliconius* facilitates ecological speciation
12.10- 12.30	**Barbara Mable** University of Glasgow Diversity and linkage of genes controlling self-incompatibility in the face of mating system variation	**Jon Slate** University of Sheffield Admixture as a source of adaptive genetic variation in Soay sheep	**Joram Mwacharo** University of Nottingham Global distribution of mtDNA D-loop diversity among indigenous chickens
12.30	LUNCH (Mountford Hall)		