

MASAMB 2024

Final programme. This schedule may be subjected to last-minute changes.

Talks and posters will be presented in the main theatre of the Maths Building, Mile End campus, QMUL. The hub MB-201 is available throughout the whole conference as quiet room (contact the organisers to have access to it).

Further information are available at <https://masamb2024.wixsite.com/masamb2024/>

Thursday, August 29th 2024

09:30-12:00 Registration

09:30-10:15 Coffee break

10:15-10:30 Welcome address

10:30-12:30 Session A: AI and machine learning

Sponsored by DERI <https://www.qmul.ac.uk/deri/>

10:30-10:40 Sponsored Talk A: Greg Slabaugh, QMUL

chair: Nick Goldman

10:40-11:05 Talk 1: Manolo Perez, Imperial College London, “PhyloCNN: Improving tree representation and neural network architecture for deep learning from phylogenies in phylodynamics and diversification”

11:05-11:30 Talk 2: Charlotte West, EMBL-EBI, “Detecting Positive Selection using Machine Learning”

11:30-11:55 Talk 3: Siu Pui Chung, QMUL, “Pg-Gan-Mosquito: Demographic inference of anopheles mosquitoes to measure spread of resistance mutation”

11:55-12:20 Talk 4: Nathan Skene, Imperial College London, “Predicting cell type-specific epigenomic profiles accounting for distal genetic effects”

12:20-14:00 Lunch break

14:00-15:40 Session B: phylogenetics

chair: Mario Dos Reis Barros

14:00-14:25 Talk 5: Sandra Álvarez-Carretero, UCL, “Application of Bayesian model selection to distinguish between species diversification timing hypotheses”

14:25-14:50 Talk 6: Manel Ait El Hadj, St Andrews, “Integrating traits in Polymorphism-aware phylogenetic Models to better model speciation”

14:50-15:15 Talk 7: Tomas Flouri, UCL, “Efficient Bayesian Inference Under the Multispecies Coalescent with Migration”

15:15-15:40 Talk 8: Rui Borges, University of Veterinary Medicine Vienna, “The rarity of mutations and the inflation of bacterial effective population sizes”

15:40-16:00 Coffee break

16:00-17:15 Session C: population genetics

chair: Richard Nichols

16:00-16:25 Talk 9: Haoyu Chen, Johannes Kepler University Linz, “Testing SNP data under overdispersion”

16:25-16:50 Talk 10: Ulises Bercovich, University of Copenhagen, “Measuring linkage disequilibrium in structured populations with applications in pruning and clumping”

16:50-17:15 Talk 11: Weini Huang, QMUL, “Measures of genetic diversification by integrating bulk and single cell data”

17:15-18:30 Poster Session with BGI stall

Posters:

Sabia Asghar, Hasselt University, “A numerical study of point forces in a multi-dimensional elastic model for tumors”

Raju Kumar, QMUL, “CD8+ T cells are inflammatory and clonally expanded in the early stage of metabolic dysfunction-associated steatotic liver disease (MASLD) fibrosis”

Richard White, QMUL, “An aggregated gene co-expression network from a large zebrafish mutant transcriptome dataset”

Omar Ruelas, St Andrews, “Adding Morphological Traits to the Species Tree inference under a Polymorphism-Aware Phylogenetic Models approach”

Alistair Dunham, Wellcome Sanger Institute, “Iterative deep learning library design for exploring fitness landscapes”

Joel Winterton, EMBL-EBI, “Benchmarking with pandemic-scale phylogenetic datasets”

Janeesh Baur Kansal, QMUL, “Evaluating How the Meaning of Identical by Descent Varies with Mutation and Recombination Rates”

19:00 Conference Dinner at Tayyabs <https://www.tayyabs.co.uk/> 83-89 Fieldgate St, Whitechapel, London E1 1JU

Friday, August 30th 2024

09:00-10:40 Session D: genomics and more

chair: Andreas Futschik

09:00-09:25 Talk 12: Jackie Rao, University of Cambridge, “VICatMix: variational Bayesian clustering and variable selection for discrete biomedical data”

09:25-09:50 Talk 13: Bikash Bhandari, EMBL-EBI, “Borrowing from evolution: A generalised approach for protein sequencing”

09:50-10:15 Talk 14: Vinny Davies, University of Glasgow, “ViMMS: Improved Real-Time Data Acquisition Methods for Metabolomics Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS) Experiments”

10:15-10:40 Talk 15: Carolin Kosiol, St Andrews, “Polymorphism-aware models in RevBayes: Disentangling Balancing Selection and CG-biased gene conversion”

10:40-11:00 Coffee break

11:00-12:40 Session E: phylogenetics

Sponsored by Peer Community In <https://peercommunityin.org/>

11:00-11:10 Sponsored Talk B: Matteo Fumagalli, Peer Community In

chair: Paschalia Kapli

11:10-11:35 Talk 16: Svitlana Braichenko, University of Edinburgh, “Phylogenetic methods meet AI”

11:35-12:00 Talk 17: Ruolin Wu, University of Bristol, “Origin of angiosperms: quantitative integration of fossil records and the molecular clock”

12:00-12:25 Talk 18: Samuel Martin, EMBL-EBI, “Algebraic Invariants for Inferring 4-leaf Semi-directed Phylogenetic Networks”

12:25-12:50 Talk 19: Ziheng Yang, UCL, “On the probability of inferring the correct phylogeny”

12:50-14:10 Lunch break

14:10-15:50 Session F: population genetics and more
chair: Weini Huang

14:10-14:35 Talk 20: Andreas Futschik, Johannes Kepler University Linz, “Detecting selection with multi-locus Wright-Fisher models.”

14:35-15:00 Talk 21: Bingxin Lu, University of Surrey, “Cell-cycle dependent DNA repair and replication unifies patterns of chromosome instability”

15:00-15:25 Talk 22: Fajia Sun, EMBL-EBI, “Dynamic adaptive sampling for metagenomic samples”

15:25-15:50 Talk 23: Richard Goldstein, UCL “Evolution of indel hotspots promotes SARS-CoV-2 evolvability”

15:50-16:00 Closing and future events

List of delegates

Sabia Asghar	Hasselt University
Magnus Haughey	Queen Mary University of London
Harry Gordon	University of East Anglia
Rachel Lau	Queen Mary University of London
Andreas Futschik	JKU Linz
Matteo Fumagalli	Queen Mary University of London
Ziheng Yang	UCL
Mario dos Reis	Queen Mary University of London
Rui Borges	University of Veterinary Medicine Vienna
Olivier E Pardo	Imperial College London
Ruolin Wu	University of Bristol
Ulises Bercovich	University of Copenhagen
Pui Chung Siu	Queen Mary University of London
Richard White	Queen Mary University of London
Joshua Agilinko	Imperial College London
Carolin Kosiol	University of St Andrews
Omar Ruelas	University of St Andrews
Weini Huang	Queen Mary University of London
Lauren McKenzie	UCL
Amelia Eneli	Queen Mary University of London
Manolo Fernandez Perez	Imperial College London
Janeesh Bansal	Queen Mary University of London
Rayyan	Queen Mary University of London
Baron Koylass	Queen Mary University of London
Greg Slabaugh	Queen Mary University of London
Antonio Pacheco	University of St Andrews
Manel Ait El Hadj	University of St Andrews
Jackie Rao	University of Cambridge
Kamal Sukandar	Imperial College London
Laura Mulvey	friedrich alexander university erlangen-nuremberg
Alistair Dunham	Wellcome Sanger Institute
Sandra	UCL
Bikash Bhandari	EMBL-EBI
Nick Goldman	EMBL-EBI
Joel Winterton	EMBL-EBI
Isabel Poetzsch	EMBL-EBI
Fajia Sun	EMBL-EBI
Samuel Martin	EMBL-EBI
Bingxin Lu	University of Surrey
Sirui Cheng	UCL
Charlotte West	EMBL-EBI
Leonardo de Oliveira Martins	Quadram Institute Bioscience
Svitlana Braichenko	University of Edinburgh
Tomas Flouri	UCL
Paschalia Kapli	Natural History Museum, UK
Jenny Dunstan	EMBL-EBI Goldman Group
Richard Goldstein	UCL
Jiayi Ji	UCL