ANU Workshop on Computational Genomics

31st August 2023

Ian Wark Theatre, The Shine Dome, 15 Gordon St, Acton ACT 2601

Zoom: https://anu.zoom.us/s/81490946562 (Passcode: 26511342)

Time	Speaker	Title
9:00 − 9:45, Opening Statement and Keynote Speech, Chair: Liang Zheng		
9:00	Tony Hosking ANU	Opening Statement
9:10	Vaibhav Rajan* National Uni. of Singapore	Keynote Speech
9:45 − 10:45, Session 1: Genome Assembly, Chair: Eduardo Eyras		
9:45	Pavel Pevzner* Uni. of California, San Diego	Yu Lin's Contribution To Genome Assembly
10:00	Kirat Alreja ANU	Manual Curation Of Genome Assemblies For Australian Reptiles & Amphibians
10:10	Mingfu Shao* Penn State Uni.	Combinatorial And Learning Algorithms For Locality Sensitive Hashing Functions
10:25	Zixiong Zhuang ANU	Discovering Population-Level Structural Variants In The Dieback Species Eucalyptus Viminalis With Long-Read Sequencing And HPC Read Mapping
10:35	Arthur Georges Uni. of Canberra	Resolving Sex Chromosome Assembly -- Brief History And Current Advances
10:45 − 11:15, Morning Tea		
11:15 − 12:45, Session 2: Biology and Medical Applications, Chair: Robert Lanfear and Vijini Mallawaarachchi		
11:15	Justin Borevitz ANU	Landscape Genomics For Climate Adaptation
11:25	Xiuwei Zhang* Georgia Inst. of Technology	Inference Of Cell Division Histories Using Lineage Tracing And Single Cell Data
11:40	Eduardo Eyras ANU	Algorithms For Molecular Discovery In Environmental Samples
11:50	Yanlin Zhang* McGill University	Reference Panel Guided Topological Structure Annotation Of Hi-C Data
12:00	Hardip Patel ANU	National Centre For Indigenous Genomics Enabling Equitable Healthcare For All
12:10	Xiaowen Liu* Tulane Uni.	Complex Proteoform Identification By Top-Down Mass Spectrometry

12:20	Yuvaraj Ghodke ANU	Omics Data In Clinical Trials
12:30	Liang Qiao* Fudan Uni.	Mass Spectrometry Methods In Microbe And Microbiome Characterization
12:45 − 13:35, Lunch Break		
13:35 − 14:35, Session 3: Phylogenomics, Chair: Gavin Huttley		
13:35	Minh Bui, Nhan Ly-Trong, Piyumal Demotte, ANU	Computational Phylogenomics at ANU
13:50	Rob Lanfear, Fred Jaya, Jeremias Ivan, ANU	Applied Phylogenomics at ANU: Models of Molecular Evolution for Bacteria; Choosing Sliding Window Size for Phylogenomic Analysis
14:05	Thomas Wong, Caitlin Cherryh, ANU	MAST: Phylogenetic Inference With Mixtures Across Sites And Trees And Applications To Metazoan Evolution
14:20	Robert McArthur ANU	Spectral Cluster Supertree: Rapidly Merging Phylogenetic Trees With Thousands Of Taxa
14:27	Matthew Macaulay Uni. of Technology Sydney	Efficient Embeddings For Scalable Bayesian Phylogenetic Inference
14:35 − 15:05, Afternoon Tea		
15:05 − 16:15, Session 4: Genomics and Algorithms, Chair: Justin Borevitz		
15:05	Gavin Huttley ANU	Graph Algorithms And Genomics
15:20	Vijini Mallawaarachchi Flinders Uni.	Metagenomic Binning Using Assembly Graphs
15:30	Anuradha Wickramarachchi CSIRO	Metagenomics Binning For Long Reads
15:40	Hansheng Xue ANU	Improving Metagenomic Contigs Binning By Encoding Assembled Fragments Graph With Heterophilous Constraints
15:50	Dongbo Bu* CAS	AIA --- AI-aided algorithm design
16:00	Benjamin Schwessinger ANU	Yu Lin And My Wonders
16:15 − 16:45, Panel Dialogue Emerging Trend and Collaboration Challenges that the Computing and Biology Researchers Chair: Lexing Xie Panelist: Minh Bui, Arthur Georges, Dan Andrews, Vijini Mallawaarachchi.		
16:45	Minh Bui	Final Reflection and Closing Remarks

(*: remote participant)