



The 3rd Annual BioNet Conference

Wednesday May 31st 2023

9:00-12:00pm	Alberta Livestock Omics Get Together – Maple Leaf Room
	A session designed to allow Alberta and Western Canadian livestock and agricultural researchers to connect and discuss relevant issues in the research space directly and in person.

Official start of BioNet 2023 1pm – Maple Leaf Room

BioNet 2023 Opening Ceremony – Maple Leaf Room	
1:00-1:05pm	Welcome and opening remarks
1:05-1:10pm	BioNet Introduction
1:10-1:15pm	Conference Kickoff – University of Alberta
1:15-1:45pm	Bioinformatics White Paper Discussion – Dr. Athan Zovoilis and Dr. Eric Merzetti
Opening Plenary – Maple Leaf Room	
1:50-2:15pm	Dr. Russ Greiner, University of Alberta and AMII <i>“Intro to machine learning for medical researchers / practitioners”</i>
Session 1: Agricultural Omics 1 – Maple Leaf Room	
2:20-2:40pm	Dr. Devin Holman, AAFC Lacombe <i>“Early-life antibiotic treatment and the piglet gut microbiome and resistome”</i>
2:45-3:00pm	Short Talk – Lance Lansing, AAFC Lethbridge <i>“Taxonomic classification and analysis workflow for microbiome sequence data using Snakemake, R, and R markdown”</i>
3:00-3:30pm	Coffee Break – Maple Leaf Room
Session 2: Agricultural Omics 2 – Maple Leaf Room	
3:30-3:50pm	Dr. Tim McAllister, AAFC Lethbridge <i>“Genomic and metagenomic approaches to defining the ecology of AMR from a One Health perspective.”</i>
3:55-4:15pm	Dr. Robert Gruninger, AAFC Lethbridge <i>“Understanding the host – microbiome interactions involved in liver abscesses formation in beef cattle”</i>
4:20-4:40pm	Dr. Leluo Guan, University of Alberta <i>“Translational rumen microbiome research for strategies to improve cattle production sustainability”</i>
4:40-4:55pm	Short Talk - Dr. Jason Grant, University of Alberta <i>“Proksee: a web server for the characterization and visualization of bacterial genomes”</i>
Opening Keynote – Maple Leaf Room	
5:00-6:00pm	Dr. Michael Hoffman, PhD <i>“Identifying transcription factor binding using open chromatin, transcriptome, and methylation data”</i>
6:00-7:00pm	Dinner – Maple Leaf Room

BioNet 2023 is in part sponsored by:



Thursday June 1st 2023

8:00-9:00am	Breakfast – Maple Leaf Room
Plenary Talk – Maple Leaf Room	
9:00-9:25am	Dr. Steven Jones, Professor, FRSC, FCAHS <i>“Studying Genomes when the Epigenome comes along for the ride”</i>
Session 3: Health Omics	
9:30-9:50am	Dr. Pinaki Bose, University of Calgary <i>“Living on the Edge: How Distinct Cancer Cell States Drive Tumour Aggressiveness.”</i>
9:55-10:15am	Dr. Ly Vu, University of British Columbia <i>“Toward targeting post-transcriptional gene expression control in leukemia”</i>
10:20-10:40am	Dr. Gane Ka-Shu Wong, University of Alberta <i>“Drug Target Discovery In The Era Of Digital Health Databases”</i>
10:45-11:00am	Short Talk – Dr. Mahmoud M. Moustafa, University of Calgary <i>“Cooperative Interactions of Glucocorticoid Receptor and NF-κB at Overlapping Genomic Loci: Insights from CHIP-seq Analysis”</i>
11:00 to 11:30am	Coffee Break – Maple Leaf Room
Session 4: Advanced Bioinformatics Approaches	
11:30-11:45am	Dr. Jason de Koning, University of Calgary <i>“Why are Human-Disease Associated Variants So Common in the Genomes of Non-Human Vertebrates?”</i>
11:50-12:10pm	Dr. Quan Long, University of Calgary <i>“CATE: A fast and scalable CUDA-based tool characterizing molecular evolution”</i>
12:15-12:30pm	Short Talk – Dr. Tatiana Maroilley, University of Calgary <i>“A CURE for Introduction to Bioinformatics”</i>
12:35-12:50pm	Short Talk – David Enoma, University of Calgary <i>“A statistical method for image-mediated association studies discovers genes and pathways associated with four brain disorders”</i>
1:00 to 2:00pm	Lunch – Maple Leaf Room
BioNet 2023 Poster Session 1	
2:00-3:00pm	Even Numbered Posters Present
Session 5: Health Omics 2	
3:00-3:20pm	Dr. Matthew Croxen, Alberta Precision Laboratories <i>“Modernizing Alberta's Public Health Laboratory Using Genomics”</i>
3:25-3:40pm	Short Talk – Anureet Tiwana, University of Alberta <i>“Identifying Key Genes in Preeclampsia using Machine Learning”</i>
3:45-4:00pm	Short Talk – Travis Haight, University of Lethbridge <i>“Shining light on circRNA dysregulation in neurodegenerative disease”</i>
4:00 to 4:30pm	Coffee Break – Maple Leaf Room
Plenary Talk – Maple Leaf Room	
4:30-4:55pm	Dr. David Wishart, University of Alberta <i>“Bioinformatics and Biomarkers”</i>
Session 6: Bioinformatic workflows	
5:00pm-5:20pm	Dr. Paul Gordon, University of Calgary <i>“From swab to sequence: towards an on-site, precision antimicrobial treatment workflow for cattle feedlots”</i>
5:25pm-5:40pm	Short Talk – Dr. Rui (Ric) Qin, The Metabolomics Innovation Centre, University of Alberta <i>“Biomarker discovery workflow for chemical isotope labeling LC-MS metabolomics”</i>
5:45-6:00pm	Short Talk – K M Tahsin Hassan Rahit, University of Calgary <i>“ModSpy: A Machine Learning model detects Genetic Modifiers from Whole Genome Sequencing data of Model Organisms”</i>
6:00-7:00pm	Dinner – Maple Leaf Room

Friday June 2nd 2023

8:00-9:00am	Breakfast – Maple Leaf Room
Closing Plenary – Maple Leaf Room	
9:00-9:25am	Dr. Gwendolyn Blue <i>“Responsible research and innovation: From principles to practice”</i>
Session 7: Agricultural Omics 3	
9:30-9:50am	Rodrigo Ortega-Polo, AAFC Lethbridge <i>“Lethbridge CARSU and the Bioinformatics Research Support Network: Accelerating the Digital Transformation of the Agriculture and Agri-Food sector at AAFC”</i>
9:55-10:15am	Dr. Lingling Jin, University of Saskatchewan <i>“Genome Evolution and Reconstruction of Ancestral Monoploid Karyotypes”</i>
10:20-10:35am	Short Talk – Greg Robinson, University of Lethbridge <i>“Copper Sulphate Foliar Applications and Soil Amendments Alters Pathogens Found on Cannabis sativa”</i>
10:40-10:55am	Short Talk – Keyhan Najifian, University of Saskatchewan <i>“Semi-Self-Supervised Learning for Semantic Segmentation in Images with Dense Patterns”</i>
11:00 to 11:30am	Coffee Break – Maple Leaf Room
Session 8: Microbial Omics	
11:30-11:50am	Dr. James Wasmuth, University of Calgary <i>“Sex and drugs and rockin’ worms”</i>
11:50-12:10pm	Dr. Elisabeth Richardson, Mount Royal University <i>“Comparative genomics of a pan-ciliate dataset reveal paradoxical protein complexes associated with membrane trafficking and peroxisome formation”</i>
12:15-12:30pm	Short Talk – Dr. Viraj Muthye, University of Calgary <i>“Jumping jellyfish: Myxobolus rasmusseni, a cnidarian parasite of Albertan fish, has a genome that is highly repetitive, full of transposons, and has experienced massive gene loss”</i>
12:35-12:50pm	Short Talk – Varada Khot, University of Calgary <i>“Decoding genomic adaptations of an alkaliphilic Opitutales using gene-tree species-tree reconciliation”</i>
12:55 to 1:10pm	Short Talk – Daniel A. Salazar-Alemán, University of Calgary <i>“Toxicometallomics of Escherichia coli grown in the presence of silver, copper and gallium metal salts: similarities and differences at the transcriptome level”</i>
1:15-1:30	Short Talk – Daniel Yu, University of Alberta <i>“Functional genomic characterization of naturalized Escherichia coli strains adapted to food- and water-associated industrial environments”</i>
1:30 to 2:30pm	Lunch – Maple Leaf Room
BioNet 2023 Poster Session 2	
2:30-3:30pm	Odd Numbered Posters Present
3:30-4:30pm	PI / Students Meetings
4:30 to 5:00pm	Coffee Break – Maple Leaf Room – Group Photo
Closing Keynote – Maple Leaf Room	
5:00-6:00pm	Dr. Alice Berger, PhD <i>“CRISPR-based discovery of cancer drug targets to enable precision medicine”</i>
6:00-7:00pm	Dinner – Maple Leaf Room
6:30-7:00pm	Awards / Final Comments
7:00-10:00pm	Conference Banquet – Room at the Top