

## CSM Halifax 2023 – Schedule

### **Monday June 26, 2023**

**12:30 – Post-doctoral Fellows meet & greet (Mona Campbell 1108)**

**14:00 – Exhibits & Poster Presentations (Studley Gym)**

**14:00 – Workshop: D-MARK Biosciences (Scotiabank Auditorium)**

**14:30 – Workshop: Scintica Instrumentation Inc (Scotiabank Auditorium)**

**16:15 – Student Symposium Competition #1 (Ondaatje Hall)**

16:15: Rhiannon Punch – “Impact of water activity on microbial growth in bentonite clay.”

16:30: Rachel Beaver – “Low dry density and incomplete saturation promote microbial growth in bentonite clay.”

16:45: Daniel Armando Salazar-Aleman – “Toxicometallomics of Escherichia coli grown in the presence of silver, copper, and gallium metal salts: similarities and differences at the transcriptome level.”

17:00: Allison Leonard – “Exogenous fatty acids inhibit Staphylococcus aureus adhesion to host ligands.”

17:15: Nicolas Rivard – “Entry and Surface Exclusion of IncC Plasmids and SGI1: An Asymmetric Interplay.”

17:30: Ashlyn Kirk – “A replica plating method for efficient, high-throughput screening of novel antibiotic gene clusters in bacteria uncovers a holomycin-like cluster in Pantoea agglomerans 20KB447973

**18:00 – Armand Frappier Award Lecture (Ondaatje Hall)**

“Active lithoautotrophic sulfur- and methane-cycling microbial community in an anoxic, sub-zero, and hypersaline High Arctic spring”

Elisse Magnuson, McGill University, Montreal, Quebec

**19:15 – Student Mixer (Pacifico, 5171 George St) – SOLD OUT**

## **Tuesday June 27**

### **9:00 Symposiums:**

#### **Symposium # 7: Marine Microbiology (Strug Hall)**

Co-Chairs: Drs. Erin Bertrand and Julie Laroche, Dalhousie University

Molecular insights into abiotic and biotic factors shaping diatom ecophysiology and signalling

Invited Speaker: Dr. Katherine Helliwell, Marine Biological Association, Citadel Hill Plymouth, Devon, UK

9:00: Katherine Helliwell – “Molecular insights into abiotic and biotic factors shaping diatom ecophysiology and signalling”

9:45: Catherine Bannon – “Microbial interactions underpin marine cobalamin cycle dynamics on the Scotian Shelf in the Fall.”

10:05: Susan McLatchie – “Snacking on acetone in the sun: the life and times of an Arctic Ocean surface water specialist.”

#### **Symposium # 8: Pathogenesis and the Host Response (Scotiabank Auditorium)**

Co-Chairs: Drs. Nikhil Thomas and John Rohde, Dalhousie University

Bacterial Pathogenesis: Probing Virulence Factor Function Using Proximity-dependent Biotin Labelling (BioID)

Invited Speaker: Dr. Vanessa D’Costa, Ottawa University, Ottawa, Ontario

9:00: Vanessa D’Costa – “Bacterial Pathogenesis: Probing Virulence Factor Function Using Proximity-dependent Biotin Labelling (BioID)”

9:45: Nooran Abu Mazen – “Metatranscriptomics of nasopharyngeal swabs enables pathogen detection and host response profiling for 245 acute pediatric sinusitis patients.”

10:05: Hayley Gorman – “A missense mutation in goblet cell protein FCGBP alters the glycomics profile of mucus that increases *Salmonella enterica* adherence and invasion.”

#### **Symposium # 9: Bacteriophage and Bacterial Defense Systems (Ondaatje Hall)**

Co-Chairs: Drs. Robyn Wright and Nikhil Thomas, Dalhousie University

A Phage odyssey: uncovering the dynamic interactions shaping gut microbiomes in infancy and adulthood.

Invited Speaker: Dr. Corinne Maurice, McGill University, Montréal, Québec

9:00: Corinne Maurice – “A Phage Odyssey: uncovering the dynamic interactions shaping gut microbiomes in infancy and adulthood.”

9:45: Audrey Leprince – “Exploring the diversity of phage defense mechanisms in *Streptococcus thermophilus*.”

10:05: Jolie Hamel – “Biochemical characterization of a *Streptococcus* anti-CRISPR protein.”

### **10:30 – Coffee Break**

### **11:00 Symposiums:**

#### **Symposium # 10: Microbiomes in Health and Disease (Ondaatje Hall)**

Co-Chairs: Drs. Morgan Langille and Robyn Wright, Dalhousie University

Microbial bioactivity in the human microbiome

Invited Speaker: Dr. Curtis Huttenhower, Harvard University, Cambridge, MA, USA

11:00: Curtis Huttenhower – “Microbial bioactivity in the human microbiome.”

11:45: Meredith Elizabeth Gill – “Production of neuroactive compounds by intestinal bacteria.”

12:05: Dale Archer – “The Effects of VANISH Species of Bacteria on Disease Pathology in a Mouse Model of Multiple Sclerosis.”

#### **Symposium # 11: Virulence and Gene Regulation (Strug Hall)**

Chair: Dr. Nikhil Thomas

Pheromone signaling in the bioluminescent light-organ symbiont *Vibrio fischeri*

Invited Speaker: Dr. Eric Stabb, University of Illinois Chicago, Chicago, Illinois, USA

11:00: Eric Stabb – “Pheromone signalling in the bioluminescent light-organ symbiont *Vibrio fischeri*.”

11:45: Carla Maduta – “Vaginal Community State Types (CSTs) alter environmental cues and production of the *Staphylococcus aureus* toxic shock syndrome toxin-1 (TSST-1).”

12:05: Carole Anamale – “Dual regulation of stress and virulence by RyfA and TimR small RNAs in uropathogenic *Escherichia coli*.”

#### **Symposium # 12: ‘Omic’ Approaches to Gene and Drug Discovery (Scotiabank Auditorium)**

Co-Chairs: Drs. Nikhil Thomas and Balakrishnan Prithiviraj, Dalhousie University

Why are babies at risk for sepsis? A systems biology approach to understanding neonatal sepsis

Invited Speaker: Dr. Amy Lee, Simon Fraser University, Burnaby, British Columbia

11:00: Amy Lee – “Neonatal Sepsis: a systems biology approach to developing diagnostics and therapeutics.”

11:45: Jordan Mailloux – “SGA 2.0: A CRISPRi based bacterial synthetic genetic array.”

12:05: Duncan Carruthers-Lay – “Genomic analysis of *Neisseria gonorrhoea* population structures.”

**12:30 – Lunch**

**14:00 – Exhibitor’s Reception & Poster Session #2 (Studley Gym)**

**14:00 – Workshop: Canadian Science Publishing (Scotiabank Auditorium)**

**14:30 – Workshop: Qiagen (Scotiabank Auditorium)**

**15:00 - CIHR-III Session: Highlighting Excellence in Early Career Research (Scotiabank Auditorium)**

15:00 - 15:15: CIHR-III Welcome & Overview

Chair: Dr. Marianne Stanford, Assistant Scientific Director, CIHR Institute of Infection and Immunity

15:15- 15:30: Dr. Jessica Sheldon, University of Saskatchewan

Iron-ing out our understanding of nutritional immunity in controlling multidrug resistant pathogens

15:30 - 15:45: Dr. Omar El-Halfawy, University of Regina

Unlocking new antimicrobial strategies by studying virulence and antibiotic resistance under host-relevant conditions

15:45 - 16:00: Dr. Lauren Davey, University of Victoria

A genetic system for *Akkermansia muciniphila* reveals a role for mucin foraging in gut colonization

**16:15 – Student Symposium #2 (Ondaatje Hall)**

16:15: Felix Croteau – “Environmental DNA and the context of CRISPR adaptation in *Streptococcus thermophilus*.”

16:30: Rabia Fatima – “Temperate phage-antibiotic synergy in multi-drug resistant *Pseudomonas aeruginosa*.”

16:45: Olivia Bulka – “A multifunctional *Dehalobacter*: untangling the metabolism of cyclical self-feeding in a bioremediation culture.”

17:00: Magali-Wen St-Germain – “Air quality and bioaerosols in conventional and alternative houses for laying hens.”

17:15: Joshua Adams – “Polyamines sensitize *K. pneumoniae* to azithromycin through a dual mode of action.”

17:30: Darien Deschner – “An Exploration of the Genetic Basis of Macrolide Resistance in a Collection of *Mannheimia haemolytica* isolates from a Western Canadian Feedlot.”

**17:45 – Thermo Fisher Award Lecture (Ondaatje Hall)**

Proteomics of Fungal Disease in One Health

Dr. Jennifer Geddes-McAlister, University of Guelph, Guelph, Ontario

## **Wednesday June 28**

### **9:00 Symposiums:**

#### **Section Symposium: Applied Environmental Microbiology (Ondaatje Hall)**

Chairs: Dr. Eric Bottos, Thompson Rivers University & Dr. Jennifer Ronholm, McGill University

9:00: Robyn Wright – “Linking the oral microbiome with child and adolescent mental health.”

9:15: Evan Shepherdson – “Specialized metabolites produced during *Streptomyces* exploration provide a competitive advantage in intermicrobial interactions.”

9:30: Dongyun Jung – “The Effect of Milk Microbiota Composition on Susceptibility of Dairy Cattle to *Escherichia coli* Clinical Mastitis.”

9:45: Dirk Hackenberger – “Cost-effective resistome profiling using DNA sequencing and target capture with in-house synthesized probes.”

10:00: Rebecca Garner – “A continental-scale metagenomic study of genome-resolved bacterial assemblages from hundreds of Canadian lakes.”

10:15: Martha Xochitl Segura Guzman – “Exploring the taxonomic and functional diversity of microbial communities from the Greenland Sea using metatranscriptomics.”

#### **Section Symposium: Infection & Immunity (Scotiabank Auditorium)**

Chairs: Dr. Joel Weadge, Wilfrid Laurier University & Dr. Jean-Philippe Côté, Université de Sherbrooke

9:00: Charles M. Dozois – “The plasmid-encoded serine protease autotransporters Tsh and Sha contribute to avian pathogenic *Escherichia coli* colonization of the lungs in turkeys.”

9:15: Sarah Birstonas – “Regulation of Effector Secretion by the Type III Secretion System Chaperone CseT.”

9:30: Brianna Ball – “Uncovering novel anti-virulence strategies to combat fungal infections.”

9:45: Marylise Duperthuy – “Effect of polymyxin B on the biofilm of *Vibrio cholerae*.”

10:00: Christopher Kesthely – “Transcriptional Profiling and Genetic Analysis of a Cystic Fibrosis Airway-Relevant Model Shows Asymmetric Responses to Growth in a Polymicrobial Community.”

10:15: Caitlin Howard – “Genomic epidemiology of methicillin-resistant *Staphylococcus aureus* (MRSA) infections prior to and during the COVID-19 pandemic.”

#### **Section Symposium: Molecular Genetics & Cellular Microbiology (Strug Hall)**

Chairs: Dr. Jenny-Lee Thomassin, University of Saskatchewan & Dr. Jessica Sheldon, University of Saskatchewan

9:00: Shelby Williams – “Extreme mitochondrial reduction in a novel group of free-living metamonads.”

9:15: A. S. M. Zisanur Rahman – “Chemical-genetic Interaction Profiling of Burkholderia cenocepacia Essential Genome with CRISPRi-Seq to Identify Novel Antimicrobials Mechanism(s) of Action.”

9:30: Corrie Vincent – “Elucidating the role of concanamycins in the pathogenicity of Streptomyces scabiei.”

9:45: Saif Hossain – “Functional genomic analysis of Candida albicans protein kinases reveals modulators of morphogenesis in diverse environments.”

10:00: Marion Saunier – “Study of a potential antiphage system of the ‘abortive infection’ type regulated by a ncRNA in Clostridioides difficile.”

10:15: Christopher Lohans – “Mechanisms of carbapenem-degrading  $\beta$ -lactamases, and the detection of bacteria that produce them.”

### **10:30 – Coffee Break**

### **11:00 – Postdoctoral Fellow Research Symposium (Ondaatje Hall)**

Chairs: Dr. Pascale Beauregard, CSM President & Dr. Ayush Kumar, CSM Past President

11:00: Karen Lithgow – “Secreted Proteases from Vaginal Prevotella species Target and Activate Human MMPs and Modulate Endocervical Barrier Function.”

11:15: Gavin Douglas – “Pseudogenes as a natural reference for detecting selection in prokaryotic pangenomes.”

11:30: Kirsten Meyer – “Extracellular vesicles package metabolites from Streptomyces and enhance antimicrobial activity.”

11:45: Sheridan Baker – “Investigating the transmission of Clostridioides difficile from asymptomatic patients.”

12:00: Bradley Laflamme – “Diverse chemical scaffolds potentiate voriconazole and inhibit germination of the opportunistic human pathogen Aspergillus fumigatus.”

12:15: Lauren Bradford – “Comparing the sensitivity of culture-dependent and independent diagnostic tests for detecting Salmonella.”

**12:30 – Lunch**

**14:00 - Murray Career Achievement Award Lecture (Ondaatje Hall)**

Culturing the Human Microbiome - Lessons Learned and Opportunities Ahead

Dr. Michael Surette, McMaster University, Hamilton, Ontario

**15:15 – CSM Annual General Meeting (Scotiabank Auditorium)**

**16:45 – Free time**

**19:00 – CSM President Banquet & Awards Ceremonies (Canadian Museum of Immigration – Pier 21)**

Shuttle bus pick-up for (Museum of Immigration) Pier 21 starting at 6:30 PM in front of  
LeMarchant Place residence

Shuttle bus return to Dalhousie at 12:30 AM