



UNIVERSITY OF SASKATCHEWAN
College of Medicine

DEPARTMENT OF BIOCHEMISTRY,
MICROBIOLOGY AND IMMUNOLOGY
MEDICINE.USASK.CA

Proteomics Research in Interactions

PRISM
and Structure of Macromolecules

COMBINED SEMINAR SERIES

Department of Biochemistry, Microbiology & Immunology
and PRISM Research Centre

Thursday, February 15th

11:30 am – 12:30 pm

Location: HLTH 1B11



Dr. Daniel Figeys PhD

University of Ottawa

IMetaomics and microbiome assays from bench to clinical interventions.

The gut microbiome plays a crucial role in health and various diseases. In individuals with healthy mucosa, the gut microbiome is segregated and interacts with the host through metabolites and exosomes. Our research focuses on understanding the interactions between microbiome composition, functions, metabolites, and their impact on health and diseases. We are particularly interested in exploring the role of the gut microbiome in pediatric inflammatory bowel disease (IBD) and Mild Cognitive Impairment (MCI) in the elderly. To characterize the individual gut microbiome, we employ multiomics approaches. These are combined with a microbiome assay, RapidAIM, which facilitates ex vivo testing of individual microbiome responses to drugs and nutrients in 96-well plates. The synergy of metaomics and RapidAIM assays enables us to evaluate the baseline microbiome and its responses for each individual, enhancing our understanding of gut microbiome functionality and regulatory processes. I will present on how we combine RapidAIM with Metaomics to: 1. Enhance our understanding of the functional and regulatory processes within the gut microbiome; 2. Investigate the effects of drugs and nutrients on individual gut microbiomes and the metabolites they produce; and 3. in four ongoing clinical interventions to select individualized prebiotic to modulate the levels of specific microbiome metabolites important in pediatric IBD and in MCI.

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