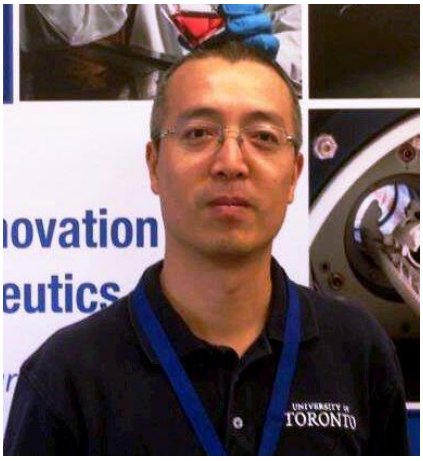
Invited Speakers

Dr. Valentina Evdokomova is a cancer researcher in the Adaptive Oncology, OICR, Toronto. Her research interests are on pediatric malignancies, prostate and breast cancer. Her research is focused on extracellular vesicles (exosomes) and their impact on the development and progression of cancer. In collaboration with a large team of scientists and clinicians, she discovered a subset of endogenous retroviral RNAs which are selectively expressed in cancer patients and transmitted from extracellular vesicles to target cells, inducing inflammatory responses and immunosuppression.

Christopher Spring received a degree in cell biology at McMaster University, before moving to the University of Toronto and University of Melbourne, where he conducted research on blood cell analysis in human and mouse disease models. Since 2010, Chris manages the Flow Cytometry Core Facility at St. Michael's Hospital Research Institute. His is a renowned expert on multiparameter conventional and spectral flow cytometry and has extensive experience on employing and adapting assays for the analysis of immune cells and extracellular vesicles. Since 2014, Chris is the president of Canadian Cytometry and Microscopy Association and a member of the organizing committee for International Society for the Advancement of Cytometry.



Dr. Jianxun (Jason) Han is a research associate in Dr. Juan Carlos Zúñiga-Pflücker's lab at Sunnybrook Research Institute. His research interest is on investigating the gene expression regulation of Delta-like 4, a key molecule involved in T cell development in thymic epithelial cells (TECs). TECs, cultured 3-demensionally, have ability to support T cell development via expression of Delta-like 4, which is quickly lost when TECs are cultured in a 2-dimensional monolayer. PrimeFlow RNA assay allows comparing Delta-like 4 mRNA levels in individual TECs cultured in 3D vs. 2D. In addition, via PrimeFlow RNA assay, Jianxun was able to correlate Delta-like 4 mRNA and protein, as well as the protein level of a putative transcriptional regulator at a single cell level, that leads to unexpected recognition of transcriptional bursting of Delta-like 4.

AGENDA

LOCATION: OICR, 5TH FLOOR, BR 5-20/21
DATE: JUNE 27, 2019 from 1:00 PM to 3:30PM
FACILITATOR: DR. VANYA PELTEKOVA, LEAD, BIOLAB OPERATIONS, OICR

1:00 – 2:00 **Overview of branched DNA (bDNA) technology. The power of multiplexing for protein and DNA/RNA quantitation using the Procarta Plex and QuantiGene Plex assays**
Dr. Michael Shure, PhD, Senior Field Application Scientist, Thermo Fisher
Immunoassays and QuantiGene Plex Assays based on the Luminex xMAP (multi-analyte profiling) technology enables simultaneous detection and quantitation of multiple secreted protein and DNA/RNA targets, respectively. The talk will focus on ProcartaPlex Multiplex Immunoassays and QuantiGene Plex Assays, their applications, and workflows.

2:00 – 2:20 ***Flow Cytometry for multiparametric analysis of single cells: advances in high resolution* analysis**
Christopher Spring, MSc, Flow Cytometry Core Specialist, Keenan Research Centre for Biomedical Science, St. Michael's Hospital Research Facilities, Toronto
An overview on advances in multiparameter flow cytometric technologies, applications for characterization, and functional analysis of individual cells within mixed cell populations or within a context of functional intracellular interactions. In addition, flow cytometry can also be extended to the analysis of subcellular organelles, chromosomes, or RNA transcripts.

2:25 – 2:45 **PrimeFlow RNA Assay: Simultaneous Detection of RNA and Protein by Flow Cytometry**
Dr. Bret Samelson, PhD, Field Application Scientist, Thermo Fisher
An overview of the PrimeFlow RNA Assay, an expansion of flow cytometry capability to measure gene expression. Combining PrimeFlow with traditional protein immunolabeling, could reveal the dynamics of both RNA transcription and protein expression patterns at the single cell resolution.

2:45 – 3:00 **Monitoring cancer exosome-mediated RNA transfer with QuantiGene ViewRNA and PrimeFlow RNA technologies**
Dr. Valentina Evdokimova, PhD, Research Scientist, Adaptive Oncology, L. Stein's Lab
An insight on utilization of QuantiGene ViewRNA and PrimeFlow assays to study the effect of cancer extracellular vesicles and their cargo (retroelement RNAs, such as HERV-K and LINE-1) on developing immunosuppressive phenotype associated with Ewing sarcoma.

3:00 – 3:15 **Investigating gene regulation using QuantiGene PrimeFlow RNA assay**
Dr. Jianxun Han, PhD, Research Scientist, Sunnybrook Health Science Centre
The PrimeFlow RNA assay is used to correlate the mRNA and protein in thymic epithelial cells (TECs) culture in 3D vs. 2D, when no appropriate reference/normalization is available. The PrimeFlow RNA assay application for correlation of mRNA with protein will be discussed.