Featured Speaker Biographies

Toronto NGS Symposium 2015
Mt Sinai Hospital, Ben Sadowski Auditorium
October 22nd 2015

Mohammad R. Akbari, MD, PhD, Women's College Hospital

"The Power of Founder Population in Gene Discovery"

Dr. Akbari is an assistant professor at the Dalla Lana School of Public Health, University of Toronto (U of T), and a scientist at Women's College Research Institute (WCRI), Women's College Hospital (WCH). Dr. Akbari's research interest is in studying genetic susceptibility to cancers, including breast, ovarian, esophageal, Colon, pancreas and prostate cancers. This includes identifying new genes responsible for hereditary cancers, defining the role of known cancer genes, and individualizing cancer treatments for patients carrying a genetic mutation. One of the key focuses of his research program is to incorporate our current knowledge of cancer genetics into clinical management of cancer by closing the gap in access to genetic testing between developed and developing nations (as well as within developed areas). Dr. Akbari's long term goal is to develop an affordable, universal, population-based genetic screening program for cancer, with the ultimate goal of reducing cancer incidence and mortality. Recently, he received a capacity development salary award for three years (2014-2017) in cancer prevention from Canadian Cancer Society Research Institute. Currently, he is a principal investigator or a co-investigator on seven research operating grants and two instrument purchasing grant, for a total value of $14,500,000. He has published over 70 peer-reviewed papers in his relatively short career; some of them are in prestigious journals such Nature Genetics, Journal of National cancer Institute (JNCI) and JAMA Oncology. Dr. Akbari's recent work resulted in identification of a new breast cancer susceptibility gene named *RECQL*.

Mathieu Lupien, PhD, Princess Margaret Cancer Centre

"Alterations in the Regulators of the 3-Dimensional Genome in Breast Cancer"

Dr. Mathieu Lupien has been a scientist at the Princess Margaret Cancer Centre since 2012 and is an assistant professor in the Department of Medical Biophysics at the University of Toronto. He also has a cross-appointment with the Ontario Institute for Cancer Research (OICR). He earned his Ph.D. at McGill University (Montreal, Canada) in 2005, followed by post-doctoral training in medical oncology at the Dana-Farber Cancer Institute, Harvard Medical School (Boston, MA) as an Era of Hope fellow. Dr. Lupien completed his post-doctoral training in 2008 and was recruited as a faculty member at the Dartmouth Medical School (Hanover, NH) in 2009, where he became Director of the Quantitative Epigenomics Laboratory. Dr. Lupien has co-authored numerous peer-reviewed publications, including seminal work reported in high-impact journals including Science, Cell, Nature Genetics and The Journal of the National Cancer Institute. Among other honours, Dr. Lupien is a recipient of the Young Investigator Award from the OICR, the New Investigator Salary Award from CIHR, The Rising Star in Prostate Cancer Research award from PCC/Movember and the Till and McCulloch Discovery of the Year award**.**

Shadi Shokralla, PhD, Biodiversity Institute of Ontario

"Next-generation sequencing for environmental DNA research: significance and applications"

Dr. Shokralla's graduate training, in conjunction with the Stanford Genome Technology Centre, was in molecular techniques for detection of microbial resistance amongst clinical isolates of bacteria. His main research interest is in technology development within next-generation sequencing platforms including Roche 454 GS FLX and Illumina MiSeq systems. He is currently developing new molecular approaches to total biodiversity assessment using environmental samples. As a part of the Biomonitoring 2.0 project, Dr. Shokralla is responsible for developing and optimizing protocols for DNA extraction, amplification, and sequencing.

Ben Shirley, Cytognomix

"Interpreting Variants in Complete Genes and Genome Sequences"

Ben Shirley is the chief software architect for Cytognomix, a London Ontario-based biotechnology company. He completed his MSc in bioinformatics at Western University under the supervision of Dr. Peter K. Rogan. During his time at Western he wrote software for genome-scale mutation analysis affecting mRNA splicing, called the Shannon Human Splicing pipeline. This work was funded by Mitacs - Accelerate, OGS, and GEI awards. Earlier, he computed 'ab initio' regions in the human genome used to increase the available regions in the genome for single copy genomic analysis techniques. He received an NSERC - USRA award for this work and Western University's Gold Medal in Bioinformatics upon completion of his BSc.

At Cytognomix he has assumed the lead role in developing MutationForecaster, a comprehensive web-based suite of software tools intended to aid researchers in the interpretation and validation of genome-scale variants found in NGS data. He now continues to update and maintain MutationForecaster with expertise in both web-based development and knowledge of the tools available through the website.

Scott Bratman, MD, PhD, Princess Margaret Cancer Centre

"NGS Based Detection of Circulating Tumor DNA"

Dr. Bratman is Scientist at Princess Margaret Cancer Centre Research Institute and Assistant Professor of Radiation Oncology at the University of Toronto. Dr. Bratman received his MD and PhD from Columbia University in 2009 and was trained in radiation oncology at the Stanford Cancer Institute.

His primary research focus is on improving outcomes for patients with head and neck cancer and other cancers through optimized detection and personalized treatments. Dr. Bratman's laboratory is currently developing and validating blood-based biomarkers for detecting and monitoring the presence of cancer.

Michael Wilson, PhD, SickKids Hospital

"Exploring the Structure and Function of The Mammalian Genome with Comparative Epigenomics"

Dr. Wilson is a Scientist in the Genetics and Genome Biology program at SickKids Research Institute, Assistant Professor at the Department of Molecular Genetics at the University of Toronto, and a Canada Research Chair in Comparative Genomics. He did his PhD in the molecular evolution lab of Ben Koop at the University of Victoria and postdoctoral research in the regulatory circuitry group of Duncan Odom at the University of Cambridge. The Wilson lab uses genomic technologies, multi-species comparisons, bioinformatics and genome editing to uncover gene and genome regulatory mechanisms that are relevant to developmental and disease processes.

Jeff Wrana, PhD, **FRSC**, Mt Sinai Hospital

"Why Stop at 21? Delivering Whole Transcriptomes to the Clinic"

Dr. Wrana received his PhD in Biochemistry from the University of Toronto and after completed a postdoctoral fellowship at Memorial Sloan Kettering in NY returned to Toronto where he is now a Senior Investigator at the Lunenfeld-Tannenbaum Research Institute at Mount Sinai Hospital and Professor of Molecular Genetics at the University of Toronto. His research interests lie in understanding cell fate choice in development and cancer with a focus on morphogen signalling networks. His work uncovered the TGFb-Smad signalling pathway. He currently is director of the SMART High Throughput Biology Center and his research interests encompass the generation and analysis of large diverse biological datasets to define molecular networks of importance in cell fate determination and cancer. He has won numerous awards for his work including the Gertrude Elion prize from the American Association of Cancer Research, the Paul Marks prize from Memorial Sloan Kettering (NY) and he is an Ontario Premier Summit award winner.