



BiophysTO Lunchtime Seminar Series

Date

Thursday, October 11, 2018
12:00 pm (noon)

Location

McLennan Physical Labs,
MP606
60 St George Street

**Pizza &
refreshments
provided**

Prof. Jared Simpson

Department of Computer Science at the
University of Toronto

Analysis Methods for Nanopore Sequencing Data

Over the last four years nanopore-based sequencing instruments have become widely available. The portable MinION instrument can sequence extremely long molecules of DNA, which greatly simplifies de novo genome assembly. However, the data is challenging to analyze because the perturbations of electrical current which reveal the DNA sequence are subtle. In my talk I will discuss my group's efforts to address these analysis challenges through modeling the electric current signal, leading to software for improved consensus calling, SNP calling and detecting base modifications like 5-methylcytosine. I will also discuss how our software enables novel applications of this technology and our current work on directly characterizing RNA molecules.

Dr. Jared Simpson is a Principal Investigator at the Ontario Institute for Cancer Research and an Assistant Professor in the Department of Computer Science at the University of Toronto. Jared received his PhD from the University of Cambridge in 2012. Prior to graduate school he wrote the first version of the ABySS genome assembler while working as a computational biologist at the BC Genome Sciences Centre. Jared's research group focuses on developing new algorithms to analyze large biological data sets including genome assembly, probabilistic modeling of sequencing data, the detection of modified bases and the application of genomics to better understand cancer.

Host:

Prof. Sid Goyal



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