



Biodiversity Seminar Series

The Biodiversity Seminar Series is pleased to announce
Jonas Korlach PhD, Chief Scientific Officer, Pacific Biosciences
at

Canadian Centre for DNA Barcoding, University of Guelph
presenting the talk

Applications of Single Molecule, Real-Time (SMRT) Sequencing in Metagenomics and Biodiversity

Abstract:

To understand biodiversity, reconstruct metabolic meta-pathways, and to harness their potential for biotechnological applications, it is desirable to obtain complete information about the genetic blueprint and epigenetic constitution of the organisms present in the samples under study. Traditional Sanger and next-generation short-read sequencing technologies have shortcomings with respect to read lengths and DNA sequence context bias, leading to fragmented and incomplete genome information. The development of long-read, single molecule, real-time (SMRT) DNA sequencing, with >10,000 bp average read lengths and a lack of sequence context bias, now allows for the generation of complete genomes in a fully automated workflow. In addition to the genome sequence, DNA methylation is characterized in the process of sequencing. I will highlight several examples where these capabilities have been leveraged in the areas of metagenomics and biodiversity studies of higher organisms, including reference-quality *de novo* assemblies of non-model organisms, full-length 16S sequencing, functional metagenomics, microsatellite marker discovery and surveys, elucidation of complex gene families, new natural product and antibiotic discovery, and livestock/plant microbiome interactions.



When: Wednesday March 2nd 2016 at 10:00 am

Where: Visualization Theatre, Room 1009
Biodiversity Institute of Ontario

For scheduling and more information on the seminars, please visit:
<http://biodiversity.ca/seminar.html>

