



BiophysTO Lunchtime Seminar Series

Date

Thursday, Nov 21, 2019
[12:00(noon)]

Location

McLennan, MP606
60 St George st

**Pizza & refreshments
provided**

Dr. Joanna Rifkin

Department of Ecology and
Evolutionary Biology,
University of Toronto

Hybridization, divergence, and sex in plant genomes

Natural selection, hybridization, and reproductive biology all leave distinct traces on the genome. I use genetic and genomic approaches to untangle the evolutionary history of plant genomes. The highly self-pollinating morning glory *Ipomoea lacunosa* and its mixed-mating sister species *I. cordatotriloba* differ in floral and life-history traits, which diverged in response to natural selection. However, they hybridize in sympatry, and introgression rates vary across the genome. Loci that are resistant to introgression show signatures of natural selection. We combine genetic mapping and whole-genome sequencing to test the association between introgression and traits known to be under natural selection.

Processes operating within as well as between species can structure genomes. Sex chromosomes are a striking example: as autosomes evolve into sex chromosomes, recombination between them ceases and the non-recombining chromosome (Y or W) eventually degrades. Using genetic mapping and a whole-genome assembly in the dioecious species heartwing sorrel (*Rumex hastatulus*), we investigate the relationship between recombination patterns on the sex chromosome and the autosomes.

Host: Prof. AntonZilman



**Seminar
Sponsors**

UTM

Chemical and Physical Sciences
VP Research Vice-Dean Graduate

UTSG

Biochemistry IBBME Medical Biophysics
Physics Chemistry