

Biology Seminar



Western
UNIVERSITY · CANADA

12:30 - 1:30 pm

Friday, January 24, 2020

WSC 240



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Danielle Way [2]

Both speakers are Associate Professors in Western's Biology Department

[1] RNAi as reverse genetics tool in two-spotted spider mite, *Tetranychus urticae*

The two spotted spider mite (TSSM), *Tetranychus urticae* (Koch), is the first chelicerate whose complete genome was sequenced and annotated. It is a compact genome of 90 Mbp with simple gene structure that is complemented with numerous transcriptome databases. TSSM is an important agricultural pest that feeds on over 1,100 plant species (including more than 150 crops) belonging to more than 140 different families. In addition, TSSM has an unprecedented ability to develop resistance to pesticides. Its wide host range, easy laboratory maintenance, short life cycle, and ability to feed on plant model species (e.g., *Arabidopsis* and tomato), combined with developed TSSM genomic tools, makes TSSM an excellent model for studies aimed at the identification of molecular mechanisms underlying the evolution of herbivore host range, plant-herbivore interactions, and mechanisms of pest xenobiotic resistance. However, the understanding of molecular mechanisms underlying these processes requires the assessment of gene function *in vivo*, at the level of otherwise unperturbed whole organism. RNAi holds a promise to become a potent reverse genetics tool in TSSM. We have recently developed several RNAi protocols for TSSM and will discuss their potential to be used as tools for the genetic dissection of TSSM gene function.

[2] North and South: A year in global change biology research

Sabbaticals are a wonderful opportunity to connect with new researchers and strengthen existing ties with collaborators. In this seminar, I'll highlight the places and projects from my recent sabbatical, including Sweden and Australia.

