WINTER 2013 SEMINAR SERIES


SPEAKER: Dr. Vojislava Grbic

LOCATION: Room 1307-Thornbrough Bldg

TIME: 3:30 pm

DATE: Wednesday, January 23

ABSTRACT:

The spider mite *Tetranychus urticae* is a cosmopolitan agricultural pest with an extensive host plant range and an extreme record of pesticide resistance. We have recently sequenced and annotated the spider mite genome, which represents the first complete chelicerate genome. Compared with other arthropods, the spider mite genome shows strong signatures of polyphagy and detoxification in gene families associated with feeding on different hosts. We have further combined the Arabidopsis and tomato genomic resources with those developed for spider mite to investigate induced-defense responses exhibited by both organisms during their interaction. We have identified plant receptors, signaling molecules and anti-herbivory metabolites on one side, and major classes of spider mite detoxifying genes on the other, both of which are derived from the interaction between these organisms (1). A goal of the research is to develop alternative sustainable pest control strategies for agriculture, including RNAi-based pest control for the spider mite. Her lab is also investigating spider mite silk as a natural bio-nanomaterial. This work is part of the international collaborative initiative (GAP-M, http://devbiol.zoo.uwo.ca/spidermite/) that is funded by Genome Canada and Ontario Genomics Institute, and by the Ontario Ministry of Research and Innovation.

Biography:

Dr. Grbic is an Associate Professor in the Department of Biology at the University of Western Ontario. She obtained her Ph.D. in the Department of Botany, University of Wisconsin-Madison, and she also did postdoctoral work in the Department of Plant Science, University of Cambridge, UK. Collectively, her Ph.D. and postdoctoral research examined genetics factors governing flowering and shoot development. Presently her lab is studying: (1) plant-insect interactions using Arabidopsis thaliana and the newly-established chelicerate insect model Tetranychus urticae (spider mite) to uncover genomic responses governing the interaction between plants and its herbivore; and (2) the molecular mechanisms that govern diversity of plant shoot forms.