Biology Seminar

12:30 - 1:30 pm
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BGS 0153

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Spider mite: from biology to adaptation

The interaction between plants and herbivores evolved during the evolution. Both partners developed specific mechanisms to surpass each other. On one hand, plants have developed an entire arsenal of defense strategies against herbivores such as the production of toxic or repellent secondary metabolites. On the other hand, herbivores aimed to counteract plant defenses. Specialist herbivores established specific counter strategies to feed on a limited number of plants, while generalist herbivores adapted their defense network in such a way that they can feed on many host plants. The two-spotted spider mite (TSSM) or *Tetranychus urticae* is a generalist herbivore of the Arachnida class. This is a serious agricultural pest, which feeds on over 1,100 plant species (including more than 150 crops) that belong to more than 140 different families. The polyphagous trait of *T. urticae* remains poorly understood. A potential explanation could be a huge ability to cope with toxic plant chemicals. Indeed, numerous multigenic families responsible for potential xenobiotic sensing and detoxification are expended in TSSM genome. Our group is actively working on dissecting host-TSSM interactions by using different tools and approaches such as microscopy, reverse genetic, chemical screening and global transcriptional and metabolomic analysis.