

Centre for Bee Ecology, Evolution and Conservation Speaker Series presents...



NEW TOOLS: Conservation Genomics

with NADIA TSVETKOV PhD

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In recent years, many pollinators have experienced large population declines, which threaten food security and the stability of natural ecosystems. Bumblebees are particularly important due to their ability to 'buzz' pollinate and their ability to tolerate cooler temperatures, which makes them critical pollinators for certain plants and regions. Here, we apply a conservation genomics approach to study the vulnerable *Bombus terrestris*. We sequenced RNA from 30 worker abdomens, 18 of which were collected from agricultural sites and 12 of which were collected from non-agricultural sites.

We found differentially expressed genes that are associated with pesticide and pathogen stress. In addition, we were able to detect five pathogens in the abdomens, three of which are common in managed honey bee and bumblebee colonies. Using these transcriptomic and metatranscriptomic methods, our analysis supports the role of pesticide use and pathogen spillover in *B. terrestris*'s decline. We demonstrate that transcriptomics is a valuable tool for conservation by allowing researchers to capture a real-time snapshot of the stressors that pollinators experience in nature.

Friday, February 5th, 2021

11:00 am – 12:30pm

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