

**Speaker:**

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**Date:** Monday, Oct. 05, 2020**Time:** 4:00 pm - 4:50 pm**Zoom:** 952-3324-4564**Passcode:** 835322**Title:**

Ovary development is independent of nest establishment in bumble bee queens

**Abstract:**

Upon emergence from diapause, bumble bee queens are not yet reproductively mature. In the early spring after they have emerged from diapause, queens feed on pollen and nectar to recuperate nutrient stores metabolized over the winter, develop their ovaries, and search for a suitable nest site. Nest searching and establishment is a fundamental time in the bumble bee life cycle in which mortality is high, yet little is known about the basic biology of queens at this time. Queens require both a suitable nest site and mature ovaries to lay eggs, but whether these two phenomena are interrelated or occur independent of one another remains unknown. In the spring of 2020, I collected *Bombus vosnesenskii* queens carrying out one of the following two behaviors: (1) nest searching (and thus prior to nest establishment) or (2) collecting pollen (and thus provisioning an established nest). I then measured the degree of ovary development in these queens. Queens exhibited a wide range of ovary developmental stages, but degree of ovary development was independent of queen behavior. These results suggest that queens will establish and provision nests irrespective of their ability to lay eggs. And conversely, queens will also invest in ovary development irrespective of whether they have found a suitable nest in which to lay their eggs. Thus, queens accomplish these two milestones (ovary development and nest establishment) independently.