

EVOLUTION, ECOLOGY & GENETICS RESEARCH SCHOOL OF BIOLOGY

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Influence of pollinator visitation patterns on multiple mating in flowering plants



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Multiple mating occurs frequently in plants and animals and is thought to increase the number, quality and genetic diversity of offspring mothered or sired. Since animal-pollinated plants cannot directly control gamete receipt or export, they must depend on movements of pollinators that often fail to optimize the quantity or quality of pollen deposited on stigmas. My research explores how the stochastic nature of pollinator visits as well as variation in floral traits influences mate diversity within fruits.

My talk will describe experimental studies of the mechanisms of multiple paternity in monkeyflower (*Mimulus ringens*). This research combines knowledge of the complete visitation history of individual flowers with unambiguous paternity assignment, and demonstrates that high levels of mate diversity in *Mimulus* fruits result from two mechanisms: 'simultaneous deposition' of pollen from several donors during a single pollinator visit and 'sequential deposition' of pollen from additional donors during subsequent pollinator visits. Interestingly, mate number may also be influenced by a floral trait that regulates both pollen receipt and export. This trait varies widely within populations, and provides a unique system for studying sexual antagonism and the costs and benefits of multiple mating in a hermaphroditic plant.

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**Seminars are held in the Gould Wing Seminar Room, Building 116 Daley Rd, ANU
ALL STAFF AND STUDENTS ARE WELCOME TO ATTEND**