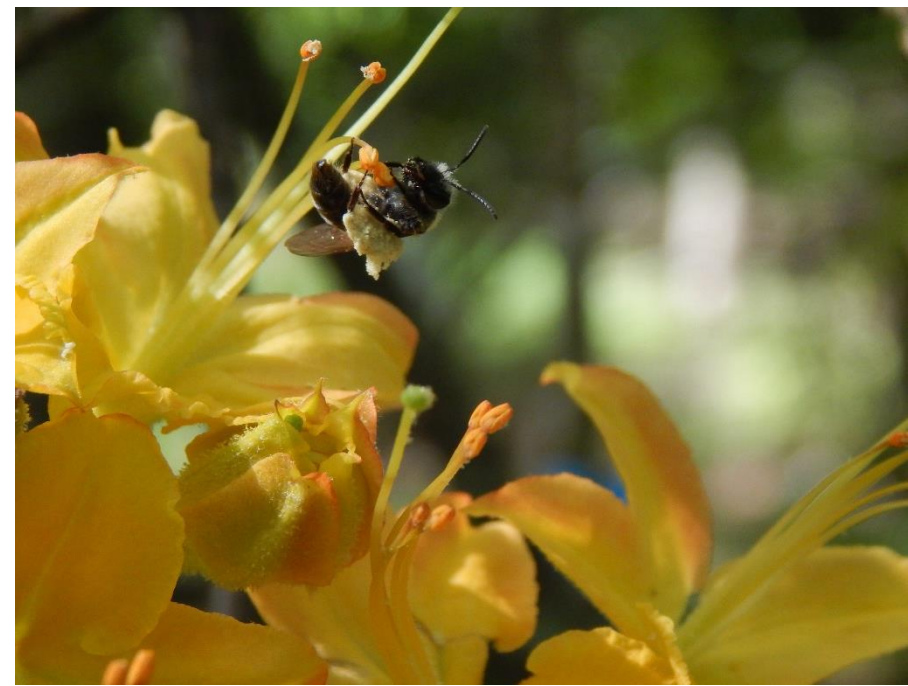


Mary Jane Epps- Mary Baldwin University

“When Butterflies Beat the Birds and the Bees: Cryptic Specialization in a Pollination Mutualism”



A major challenge in pollination biology is to determine what flower visitors actually pollinate. Flame azalea (*Rhododendron calendulaceum*, Ericaceae) is a showy understory shrub whose flowers visited by many insects, including butterflies whose wings contact anthers and stigmas. We used a combination of experimental methods and behavioral observations of flower visitors to test the hypothesis that butterfly wings are the primary vehicle of pollen transport for this plant species. Although several insect species were observed repeatedly to contact one reproductive organ (anthers or stigmas), only the large butterflies *P. glaucus* and *S. cybele* contacted both. Of these, *P. glaucus* was the more efficient pollinator, apparently due to more frequent wing flapping during flower visits. A field exclusion experiment showed that flowers excluding large butterflies (but not smaller visitors) experienced almost complete fruit failure, whereas flowers open to butterflies shared comparable fruit set with hand-pollinated flowers. *Papilio glaucus* butterflies foraging near flame azalea plants carried 56 times more azalea pollen on their wings than their bodies, and microscopic examination of flame azalea stigmas revealed both pollen and butterfly wing scales. Together, our results suggest that pollen transfer by butterfly wings is the primary pollination mechanism of flame azalea, and that a plant with many visitor species contacting its reproductive organs may nonetheless specialize on one guild of pollinators.

Friday, January 27; Room 307, SERF; 3:30 - 4:30PM. Pre-talk reception: 3:00 PM in Dabney 568