Climate change, Biological invasions, and Rapid evolution: How human caused global changes influence interactions between plants and microbial mutualists, herbivores, and pollinators

Mentor: Dr. Jen Lau

Description: The Lau lab investigates how plants and the microbes, herbivores, and pollinators with which they interact respond to human-caused environmental changes, such as global warming, biological invasions, and nitrogen deposition. Part of our work focuses on how global changes alter species interactions (e.g., plant-pollinator or plant-microbe interactions). The other part focuses on rapid evolution, and how humans alter the evolution of natural plant, microbe, and insect populations on time-scales of years to decades.

The REU will work with Dr. Lau to develop a project related to these themes. Example projects include: 1) investigating how the rapid evolution of reduced cooperation in mutualistic rhizobia (nitrogen-fixing bacteria) influences plant-pollinator interactions, 2) measuring natural selection on native prairie plants in restored prairies, or 3) testing how invasive species evolve in new environments.

Applicants should be excited about research in ecology or evolution, have a positive attitude, and be willing to work long hours (sometimes in hot/difficult conditions) in the field and/or greenhouse or lab. I plan to recruit 1-2 students through the KBS REU program, and students will work approximately 40 hours per week on their project and contributing to other projects in the lab.