

# 2016 Landis Lab Undergraduate Positions Available



The Landscape Ecology and Biological Control Lab is seeking applicants for several campus-based full-time summer research assistant positions. Hours will be long during peak season. Applicants must be prepared to work outdoors, in all weather conditions, with team members or alone, must have a valid driver's license and be willing to drive 1-3 hours to field sites in university vehicles. These jobs are not likely to be compatible with taking summer classes. Wages are based on experience but start at **\$10/hr**. Full time (May-August, possible part-time during the school year) with multiple year commitment encouraged, but not required. Students with coursework, experience or career plans in ecology, agroecology, zoology, wildlife, entomology or plant sciences and insect or plant identification skills are preferred.

## **Impacts of Bioenergy Crops on Beneficial Insects**

As part of the Great Lakes Bioenergy Research Center, we are investigating the potential impacts of bioenergy crops on insect biodiversity and their associated ecosystem impacts. Our experiments will explore the impact of herbivores on biofuel crop production, and the role of generalist predators on ecosystem services. Successful applicants will work as part of a team to prepare lab experiments and travel to sites across Lower Michigan to establish field experiments, collect insects, and monitor beneficial/pest insect populations. *Note: During peak season, schedule flexibility is necessary as sampling may require 8+ hours/day a couple times a month.*

## **Monarch Breeding Habitat Conservation in Agroecosystems**

The overarching goal of this project is to learn about ways to conserve monarch butterfly breeding habitat in agricultural landscapes. We will investigate the interacting influences of habitat context and natural enemies on monarch butterfly egg-laying site selection and survival. Our experiments will involve placing milkweed plants in different habitat-type plots and monitoring monarch egg-laying numbers, the survival of eggs and larvae, and the abundance of monarch predators and parasitoids. The work will require many round trips to the Kellogg Biological Station in a university vehicle, long hours in the field, and potential insect sample identification in the lab. Enthusiasm for hard field work and ecology is a big plus!

## **Native Plants to Enhance Beneficial Insects**

Most beneficial insects (predators, parasitoids, pollinators) require regular access to pollen and nectar to enhance longevity, reproduction, and fuel their pest control/pollination activities. However, agricultural landscapes in many parts of the North-Central Region no longer contain a reliable diversity of floral resources. Our project is working to identify flowering insectary plants that thrive on coarse-textured soils. After pollination, many beekeepers move hives to bee yards near stands of spotted knapweed, an invasive plant. Although beekeepers like knapweed because of its high nectar quantity, natural areas land managers actively control it, setting up a potential conflict between agricultural and environmental interests. Our research and education project seeks a win-win situation where native insectary plants supplement spotted knapweed, addressing agriculture's need for pollinator- and natural enemy-supportive farm landscapes while contributing to native habitat restoration.

**To apply please e-mail current resume and 2 references to Julia Perrone at [perrone5@msu.edu](mailto:perrone5@msu.edu)**