

*MSU and NSF Research Experience for Undergraduates (REU):*  
**Effects of Climate Warming and Herbivory on Plant Communities**

**Mentors:** Dr. Phoebe Zarnetske (Assistant Professor)

**Affiliations:** Kellogg Biological Station, Department of Forestry, Department of Fisheries and Wildlife, Ecology, Evolutionary Biology, and Behavior Program, Michigan State University

**Summary:** The student will have the opportunity to gain hands-on experience with field sampling in old agricultural field ecosystems and working on a long-term climate change experiment. Responsibilities will include assistance in field-based data collection on an experiment with open-top chambers (pictured below). The student will be responsible for working ~40 hours/week from May 21-August 4, 2017, and will be expected to live on site at Kellogg Biological Station (KBS), and maintain a positive attitude for the duration of the 11-week program. Field research requires the ability to work in all non-hazardous weather conditions. This is a paid position that includes housing, meals, and funding for travel and research expenses.

**Research project:** Effects of climate warming and insect herbivory on plant community composition and

phenology: Increased warming associated with climate change is predicted to alter plant communities through changes in diversity and composition, and the timing of important events like plant emergence, flowering, and seed set. Species interactions such as herbivory also affect plant communities. The singular and combined effects of climate warming and herbivory are being measured in a long-term experiment at the KBS Long Term Ecological Research site, now in its 3<sup>rd</sup> year. A replicate experiment is at the University of Michigan Biological Station in



northern Michigan, and the REU will be able to work with data from both sites. In addition to collecting the standardized long-term experimental data at KBS on plant, insect, and temperature responses, the REU will have an opportunity to develop a research project with the experiment. Potential projects could focus on (but are not limited to): designing a precipitation treatment, plant or soil nutrient analysis, insect community composition, changes to flower abundance, or plant-insect interaction trials. The student will gain experience working with open top chambers (OTCs) that simulate warming in terrestrial systems as well as advanced HOBO instruments that record long-term abiotic conditions. The individual will also assist in the identification of plants and insects.

**For questions** regarding this opportunity, please email Dr. Phoebe Zarnetske at [plz@msu.edu](mailto:plz@msu.edu).

**Deadline for application:** *Feb. 15, 2017.*

**Apply here:** <http://www.kbs.msu.edu/education/undergraduate-program/research-experiences-for-undergraduates-reu/>