Field Ecology Internships Summer 2023

Deadline extended!

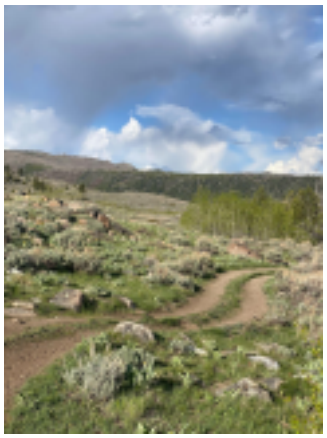
scott.carpenter@yale.edu *(Grazing and Climate Change)*
uthara.vengrai@yale.edu *(Climate Change and Soil Carbon)*
damaris.chenoweth@yale.edu (*Plant Community Restoration Study*)

INTERNSHIP ANNOUNCEMENT: We are seeking undergraduate students interested in environmental science and/or ecology to join three field-based projects focusing on biogeochemistry and plant community ecology in the Western US during the summer of 2023. All internships have the potential to support **data collection for an independent research project** on a topic adjacent to the study. Topics may include climate change, soil carbon, plant community dynamics, disturbances, restoration, wildlife migration, grazing, etc. Independent projects have the potential to culminate in a manuscript ready for submission to a peer-reviewed journal. This is a perfect opportunity for EVST and EEB students who are exploring a senior thesis or research project.

We are seeking candidates that will be available for 6-8 weeks in June and July 2023.

PROJECT 1: **The Grazing and Climate Change Project** investigates the influence of climate change and livestock grazing on plant communities.

Project Description: The project takes place at five livestock watering points located within an hour drive of Pinedale. Livestock watering points create a grazing intensity gradient that is useful for studying community response to land management decisions. At each watering point we are monitoring plant communities at three distances representing three different grazing intensities and simulated climate change scenarios. The internship will provide experience in plant community monitoring protocols, wildlife camera trapping, point based NDVI and soil moisture sensors, productivity measurement, and phenological monitoring. We will be based in Pinedale for the entirety of the summer with accommodations in a mix of motels and short-term rentals.



Qualifications & Requirements:

- The candidate should be comfortable working outdoors for extended periods of time, including under adverse weather conditions (heat, rain, etc.)
- Be comfortable living with graduate students and be able to wake up early 5 days a week.
- Ideally the candidate will be organized, adaptable, and have a broad interest in community ecology.

PROJECT 2: **The Climate Change and Soil Carbon Project** investigates the role of historical climate in influencing the biogeochemical response of grassland ecosystems to future warming and nitrogen additions.

Project Description: Field work will involve traveling the length of the North American Central Grasslands. The field sites will be in Eastern New Mexico, Southern Colorado, Northern Colorado, Central Wyoming, Central Montana, and Southern Canada.
The project will involve setting up grazing exclosures, warming treatments, and nitrogen additions at each site with a doctoral student from the School of the Environment. We will also take soil greenhouse gas flux measurements at each site, the data from which could be used to support a publishable undergraduate research project. Accommodations during the trip will include a mixture of camping and staying in nearby towns. This internship will provide experience in experimental design, soil sampling, and trace gas flux measurements. This internship provides an opportunity to travel around the American West while gaining valuable field ecology experience. There are opportunities for gaining laboratory experience during the school year as well.

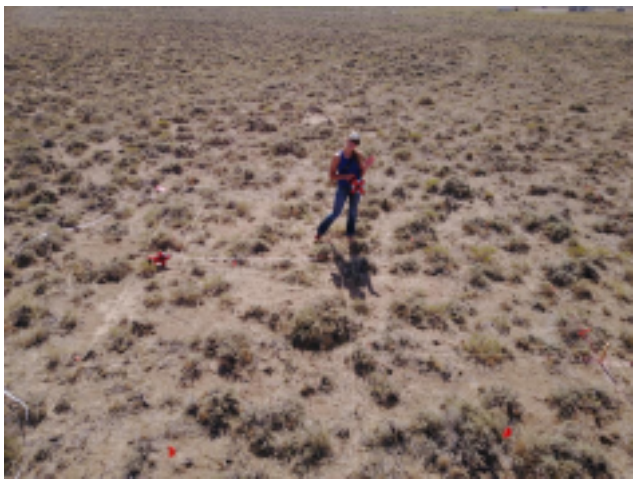
Qualifications & Requirements:

- The candidate should be able to lift up to 50lbs.
- They should be comfortable working outdoors for extended periods of time. ● The candidate must be flexible to changing environmental and working conditions and ideally bring an open, positive attitude to this experience.

PROJECT 3: **Plant Community Restoration Study**

Overview: The **Plant Community Restoration Study** is seeking one intern to assist field work on a plant-community restoration study in June and July. The work will take place out of Pinedale, WY.

Project Description: Energy development is crucially important to the state of Wyoming's economy. The Pinedale Anticline and the Jonah Natural Gas Field comprise two expansive regions that are owned by the Bureau of Land Management and leased to energy operators in southwestern Wyoming. The **destruction** of vegetation and modification of soil properties for well development is an extensive disturbance to the big sagebrush plant communities that dominate the surrounding region (and most of the Western US). This research will contribute to a larger body of work on the recovery dynamics and restoration of big sagebrush communities.



The intern will conduct vegetation and soil sampling, data collection and management, GPS data collection, drone imaging, and plant ID. There may also be an opportunity to analyze or visualize larger, existing datasets and GIS data to support the collection of field data.

Requirements:

- The intern is *not* expected to have field work experience in plant community ecology. The project coordinator will provide training in plant ID and vegetation and soil sampling methods at the start of the internship period.
- The intern should be comfortable outdoors, *in the sun*, walking/standing for long periods, and be able to lift at least 50 lbs.
- The intern must be detail-oriented, patient, and have a positive attitude!

INFO & HOW TO APPLY:

Funding: Candidates will be expected to secure their own funding such as the Yale College, Summer Experience Award, Summer Environmental Fellowship, or Summer Climate Technologies Fellowship. Depending on project funding, housing, food and travel costs may be covered or partly covered by the project coordinator.

We will provide guidance for students applying for Yale summer grant opportunities. 3

Mentoring: Interns will work alongside the doctoral students who designed these projects. Mentoring from Yale School of the Environment doctoral students will be immensely helpful for those designing senior thesis research.

For more information, or questions please contact the project coordinators:

Project 1: scott.carpenter@yale.edu *(Grazing and Climate Change)*
Project 2: uthara.vengrai@yale.edu *(The Gradient Project)*
Project 3: damaris.chenoweth@yale.edu *(Plant Community Restoration Study)*

To Apply: Please send a *short* paragraph describing your interests to the project coordinator (above). Include name, enrollment year, field of study and a description of your background in field work or research. You may apply to multiple projects. **Deadline: March 17th 2023, however, applications will be considered on a rolling basis.**