

Anastasia Marie Pulak

ap3475@nau.edu

EDUCATION

Northern Arizona University

Master of Science in Biology, **Advisor:** Dr. Michelle Mack

Flagstaff, AZ

Aug 2022 – present

Grinnell College

Bachelor of Arts in Biology with Honors

Grinnell, IA

May 2019

- Cumulative GPA: 3.8/4.0

Organization for Tropical Studies

South Africa

African Ecology and Conservation Semester Abroad

Aug – Dec 2017

- Capstone Project: An exploration of biotic and structural plant defenses as drivers of South African savanna structure

RESEARCH EXPERIENCE

Research Assistant I

Woods Hole, MA; Plum Island LTER, MA

Woodwell Climate Research Center, **Supervisors:** Dr. Chris Neill, Dr. Linda Deegan

Sep 2019 – Jun 2022

- Organized and conducted bi-monthly water sampling of twelve streams within the Buzzards Bay watershed
- Analyzed the carbon and nitrogen composition of particulate matter from streams
- Organized multiyear hydrology data sets using HOBOWare software from Onset
- Served as a member of the Diversity, Inclusion, Retention, and Equity committee to help create a supportive and equitable scientific culture and improve the accessibility of academic research
- Continued responsibilities described below under Field Assistant position

Temporary Field Assistant

Woods Hole, MA; Plum Island LTER, MA

Woodwell Climate Research Center, **Supervisors:** Dr. Chris Neill, Dr. Linda Deegan

Jun 2019 – Sep 2019

- Identified plant species in a succession of active, retired, and restored cranberry bogs and grasslands to assess long-term ecological impacts of land use and restoration strategies
- Aided multiple research projects in an ecosystem-scale nitrogen-addition experiment at a Long-Term Ecological Research site; collected hydrology data, monitored vegetation, sampled and processed water and soil, and sampled fish
- Entered, quality-checked, and organized multiple large data sets
- Balanced numerous projects and responsibilities and worked effectively as part of several teams

Independent Research (Mentored Advanced Project)

Grinnell, IA; Kern County, CA

Grinnell College Biology Department, **Advisor:** Dr. Vince Eckhart

May – Aug 2017

- Designed and conducted independent research on variation in plant water-relation traits and their role in the evolutionary divergence of species
- Surveyed vegetation community dynamics and determined plant tissue osmotic potential and drought tolerance using germination, pressure-bomb, and vapor pressure osmometer experimental techniques
- Analyzed data and presented findings through a research paper and multiple scientific presentations

SKILLS & CERTIFICATIONS

Biology: Bacterial culture maintenance; culture-dependent microbiology techniques; DNA and RNA purification; cDNA synthesis; Polymerase Chain Reaction (PCR); quantitative PCR; NanoDrop; gel electrophoresis; primer design; light microscopy; chlorophyll-a via fluorometry; plant identification and community sampling; tree surveys; plant pressing; dissection; sap osmometer measurements; pressure-bomb experiments; seed germination experiments; insect pit-fall traps; insect pinning; trapping and handling amphibians, rodents, fish, and invertebrates; camera trap deployment. **Chemistry:** Carbon and nitrogen analytical chemistry; sampling and processing water samples; coring and processing soil samples; IR and NMR spectroscopy; titration; synthesis, separation, and purification of simple organic compounds. **Hydrology:** Acoustic Doppler Current Profiler instrument and software; ML3 ThetaProbe soil moisture sensor; HOBOWare water logger and software. **Computer:** Basic R and R Studio; Microsoft Office software for Windows; Minitab; SPSS. **ArcGIS:** Georeferencing; point pattern analysis; basic spatial statistics; spatial regression models; spatial interpolation.

PRESENTATIONS & PUBLICATIONS

Neill, C., **Pulak, A.**, Miller, H.J., Hoekstra, B., Klionsky, S. Trajectories of plant communities in Massachusetts, U.S.A cranberry farms discontinued from agriculture (*in preparation*).

Pulak, A., Neill, C., Miller, H.J., Hoekstra, B., Klionsky, S. (2021). Trajectories of plant communities in southeastern Massachusetts cranberry farms discontinued from agriculture. Presentation. Nantucket Biodiversity Initiative Conference. Nantucket, MA.

Klionsky, S., Neill, C., Miller, H.J., **Pulak, A.**, Lawrence, B.A. (2020). Active restoration promotes wetland establishment and plant species richness on former riparian cranberry farms more effectively than passive retirement. Presentation. American Geophysical Union Fall Meeting. Online.

Miller, H.J., **Pulak, A.** (2019). Vegetation of retired cranberry bogs in southeastern Massachusetts. Poster. Nantucket Biodiversity Initiative Conference. Nantucket, MA.

Pulak, A., Burnette, T., James, A., Eckhart, V.M. (2018). Tissue water relations in a genus of Mediterranean-climate, winter-annual plants. Poster. Ecological Society of America Annual Meeting. New Orleans, LA.

Pulak, A., Eckhart, V.M. (2018). Evolutionary divergence of water relations and seed germination in winter annuals suggests trade-offs between drought adaptations. Presentation. Midwest Ecology and Evolution Conference. Kalamazoo, MI.

Pulak, A. (2018). Differences in water-relations between *Clarkia* subspecies demonstrate evolutionary divergence and trade-offs in drought adaptation. Presentation. Grinnell College Department of Biology Seminar. Grinnell, IA.

LEADERSHIP EXPERIENCE

Student-Athlete Mentor & Captain

Grinnell, IA

Grinnell College Athletic Department, Supervisor: Erin Hurley

Aug 2016 – May 2017; Aug 2018 – May 2019

- Collaborated with coaches and fellow teammates to create programming to foster an inclusive team culture
- Organized and implemented programming for student wellness on campus; facilitated teammate access to mental health and academic support resources

Wilderness Leader

Plymouth, VT

Farm and Wilderness, Supervisor: Jeff Bounds

Jul – Aug 2018

- Led teenagers in vigorous backpacking and canoeing trips to foster personal growth, empowerment, and cooperation

Board Member

Grinnell, IA

Grinnell College Center for Prairie Studies

Aug 2018 – May 2019

- Collaborated with an interdisciplinary board of college and community members to organize events related to prairies

Voting Member

Grinnell, IA

Grinnell College Green Fund Committee

Jan 2018 – May 2019

- Designed and implemented sustainable projects on campus; advised the allocation of a budget of \$10,000 towards sustainability projects

VOLUNTEER EXPERIENCE

Biology Department DEIJ Committee

Flagstaff, AZ

Northern Arizona University

Present

Science Fair Judge

Falmouth, MA

Falmouth Public Schools

Mar 2022

Farm Volunteer

Dorchester, MA

OASIS on Ballou Urban Farm

Jun – Jul 2018

Farm Volunteer

New Zealand; Hawaii, USA

World Wide Opportunities on Organic Farms

Feb – May 2015

Student Intern

Boston, MA

Clinical and Translational Science Institute, Tufts Medical Center

Nov 2014 – Feb 2015

AWARDS & HONORS

Grinnell College Dean's List

Fall 2015, Spring 2018

Grinnell College Trustee Honor Scholar

2015 – 2019