Student Spotlight

EMILY GAUB
M.S. student
Civil and Environmental Engineering

The internship provided an excellent opportunity to work on a not-for-profit project in Syracuse. ASLF is a not-for-profit organization that provides legal support for a variety of environmental issues, including the Onondaga Lake cleanup. As an intern, my tasks varied day-to-day, depending on the needs of ASLF.

One of the major projects I worked on was CEDARS, which is a program to build green infrastructure in Syracuse. To help address Syracuse’s combined sewer overflow, ASLF built pilot rain gardens in vacant lots. For this project, I conducted infiltration tests on the vacant lots and worked on community outreach. Christina Kolb, Ph.D., from the Earth sciences department, was also gathering data from the lots and wrote a report on behalf of ASLF. I often accompanied Professor Kolb as we worked with the vacant lot owners, taking records for ASLF. I also assisted in research for potential future sites, visiting multiple locations to assess suitability. With construction set to start in the fall, ASLF is working on a plan to develop a new rain garden in the community outreach area. I found this experience to be very rewarding and important. I believe that ASLF has already established a good relationship with neighbors adjacent to rain gardens, but outreach will continue to expand to the entire neighborhood.

ROBIN GLAS
Ph.D. student, Earth Sciences

Last year I was awarded a grant supplement from the Natural Science Foundation to intern for the US Geological Survey at the New York Water Sciences Center in Troy, N.Y. Under the mentorship of Douglas Burns, Ph.D., a prominent researcher in the field of hydrogeology and hydrology, we developed a project to examine trends in streamflow and weather-related variables in New York over the past six decades.

Climate change affects our streams and rivers across the country, contributing to changing flow and drought patterns that vary geographically. Because the United States is so large, climate change effects on streamflow need to be studied at the state and local levels. New York is one of the first states to sign into law the Community Risk and Resiliency Act, which aims at requiring state agencies to consider climate change associated risks and estimate weather extremes under regulatory decision making. This is important for the construction of bridges, culverts, and highways, which need to withstand the strength of flooding events and powerful weather events. This project allowed me to learn how to code and manage large geographic data sets, and sharpened my map analysis skills in ArcGIS. We are finding some interesting results so far. For example, we are seeing that as stream and snowmelt areas, the spring snowmelt is occurring earlier each year, and average flow rates for streams and rivers are increasing, particularly in the Catskill and Adirondack regions.

Now having completed my internship at the USGS, I am back at Syracuse University finishing up my analysis on my new career pathways study in a peer-reviewed journal, and adding work to my Ph.D. dissertation. This career pathways experience was an incredible opportunity to branch out and explore new questions and data sets, and sharpened my map analysis skills in ArcGIS. We are finding some interesting results so far. For example, we are seeing that as stream and snowmelt areas, the spring snowmelt is occurring earlier each year, and average flow rates for streams and rivers are increasing, particularly in the Catskill and Adirondack regions.

Work at a not-for-profit comes with challenges, but I found the work to be rewarding. I believe in ASLF’s goals for improving the environment and protecting communities from environmental degradation. This aligns with my future desire to work in environmental restoration for the benefit of community development and restoring local habitat.

EMPOWER Students Take to the Field

Calamities “concretions” form within sediments on the ocean floor when bacteria eat away at organic matter and produce the chemical mineral calcite. These spherical concretions, which can be as small as gravel or as large as boulders, are scattered throughout the Mesozoic Era deposits near Green Lake, on the campus of the University of Wyoming.

EMPOWER trainee Hannah Marceau attended a course at the University of Wyoming in July, where she spent two weeks documenting the concretions at Green Lake. Throughout the two week class, her group worked collaboratively to develop research questions, analyze water samples in the lab, and interpret their findings at several meetings with EMPOWER faculty members Charley Driscoll and James Fendorf. In addition to class, participants worked collaboratively on self-designed research projects, students brought their unique perspectives to these projects, and during the field experiences they designed experiments to investigate greenhouse gas emissions and rates of soil carbon loss.

Aisha Morris is the education and community engagement specialist and director of the Research Experiences for Students in Earth Science (RESESS) Program at UNA VCO.

Students Awarded NSF Grants for Professional Internships

The EMPOWER NRT program recently received a competitive grant from the National Science Foundation’s EPSCoR program to support 10 student internships with EMPOWER. The funding, awarded through a competitive grant process to EMPOWER, will provide travel, salary, and support for M.S. and Ph.D. students to intern with professional scientists. Internships are designed to help students determine their career path and provide critical training.

Aisha Morris is the education and community engagement specialist and director of the RESESS Program at UNA VCO.

Q&A

Q: Tell us a bit about your current position.

A: I am an education specialist and director of the Research Experiences for Students (RESESS) Program at UNA VCO.

Q: How do you see your position as a Research Project at EMPOWER?

A: As an education specialist, I try to balance a number of different roles as I work with the trainees. I encourage the EMPOWER trainees to really think about the problems or challenges they are interested in addressing or solving, but try not to limit the approach they think they need to use.

Q: What is the most enjoyable part of your job?

A: I encourage the EMPOWER trainees to really think about the problems or challenges they are interested in addressing or solving, but try not to limit the approach they think they need to use.

Q: What do you enjoy most about working at EMPOWER?

A: I encourage the EMPOWER trainees to really think about the problems or challenges they are interested in addressing or solving, but try not to limit the approach they think they need to use.

Q: What do you do for fun?

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