**Project WiCCED Undergraduate Internship**

Dates of internship: Fall 2023 – May 2024

Location: Center for Experimental and Applied Economics, Townsend Hall, University of Delaware, Newark, DE 19711

Number of positions available: 1

Faculty Mentor: Leah Palm-Forster (primary mentor with mentoring team below)

Faculty Mentor: Christina McGranaghan

Graduate Student Mentor: Carl Nelson-Poteet, Laura Taylor

Professional Staff Mentor: Aisha Emory

**Overview:** Project WiCCED is a multi-institutional project in partnership with National Science Foundation and the State of Delaware aimed at assessing major threats to Delaware’s water quality, and developing viable technological and policy solutions for meeting the challenges imposed by them. Research will involve a combination of laboratory, outdoor field work and/or computational environments. We seek a diverse group of undergraduate students to join our team in a welcoming, collaborative environment.

**Project Title:** Economic experiments to understand behavior in response to environmental risks exacerbated by climate change

**Research Description:**

Coastal communities within Delaware and in regions across the world find themselves in a growing state of risk due to the effects of climate change and sea level rise. Knowledge about human behavior and decision making is essential to understanding how people respond to environmental risks and which strategies can help reduce these risks, particularly for vulnerable communities. Flood hazards are a primary risk in residential areas, whereas increased salinity in soil and water resources is a primary risk in agricultural areas. Through this internship, a student will gain experience with two experimental economics studies focused on understanding behavior under risk. One study will test how different incentives influence participation in coastal home buyout programs. The other study will examine behavior in a common pool research experiment designed to represent groundwater extraction for agricultural irrigation. The student intern will help implement both studies by assisting with data collection. They will also gain experience with data management and analysis, and research communication.

**Research Questions:**

1. How does the design of home buyout programs affect key program outcomes, including (a) spatial coordination of buyouts, (b) perceptions of fairness, and (c) cost-effectiveness?
2. How do heterogeneous groundwater salinization risks affect water pumping decisions of individuals and groups?

**Student Learning Objectives: Professional and Research Skills**

This internship focuses on the development of the following professional and scientific skills.

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| Broad Professional Skills | Specific Skills |
| Planning and time management | Ability to set and complete specific goals of varying scope |
| Work independently | Independent work ethic - work independently to problem-solve |
| Collaborative skills | Learning to complete tasks efficiently and effectively with others |
| Express ideas in writing and verbally | Communicate with diverse audiences - Development of impactful poster and oral presentations. Honing ability to deliver scientific results/impacts to people of multidisciplinary backgrounds. |
| Broad Scientific Research Skills | **Specific Skills** |
| Understand scientific terms  | Mechanistic and applied concepts regarding sorption and redox chemistry |
| Literature analysis | Ability to find and use scientific manuscripts related to environmental chemistry |
| Use scientific tools | X-ray absorption spectroscopy, Infrared spectroscopy, scanning electron microscopy, and additional advanced physical and chemical techniques |
| Recognize simple patterns in research data | Applying soil environmental chemistry concepts to qualitative and quantitative data. |
| Apply research tools and techniques in research experiments  | Selective extractions, sorption reactivity experiments, redox experiments, etc. to investigate organo-mineral relationships. |
| Analyze research data  | MATLAB, R, Excel, Plotly, Origin, and instrument-specific software utilization to form effective figures and tables. |
| Understand, apply, and explain scientific concepts and theories | Freedom to form questions and plan methods for addressing challenges. Learning to communicate results through oral presentations and posters. |

**Prerequisites:**

Introductory experience with economics is preferred, but not required.

**Work Environment and Expectations:**

Laboratory environment: Center for Experimental & Applied Economics, 025 Townsend Hall

Field work environment: Opportunities to assist with off-site data collection events, including UD’s Coast Day in Lewes, DE.

The internship is part time during the academic year. The exact hours and expectations are established between the student researcher and mentor.

**Stipend:**

$5,000 - Direct deposit is required.

**Funding Source:**

National Science Foundation EPSCoR Project WiCCED

**Application deadline:**

September 15, 2023

**How to apply:** https://ugresearch.udel.edu/PUB\_Program.aspx