**DENIN Environmental Scholars Internships**

Dates of internship: November 1, 2020 – May 7, 2020

Location: Townsend Hall, University of Delaware, Newark, DE 19711

Number of positions available: 1

Faculty Mentor:

Graduate Student Mentor:

Professional Staff Mentor: Dr. Ahsanuzzaman

**Project Title:** Experimental economics study of groundwater management (Social Dimensions)

**Research Description:**

Tipping points can occur in many complex environmental systems and often produce abrupt and irreversible change. Thresholds associated with tipping points are difficult to predict, in many cases leading to considerable challenges associated with the management of natural resources. We will use laboratory economics experiments at the University of Delaware to analyze cooperative behavior related to management of common pool resources (CPR) (e.g., groundwater extraction) in different settings. During the experiment, participants will engage in a CPR extraction game, and we will elicit participants’ attitudes toward uncertainty (both risk and ambiguity). The CPR experiments will be conducted under different settings – specifically, we will (i) introduce uncertainty about the resource threshold, and (ii) vary the level of uncertainty about the resource threshold across space under which individuals make extraction decisions. We also vary the decision-making environments by letting participants make choices with and without communications with group members.

**Research Questions:**

1. How can individual’s attitudes towards uncertainty (both risk and ambiguity) influence decisions in a lab experiment on groundwater extraction?
2. How does communication in a group impact individual decision making in a context of groundwater extraction?
3. How does the spatially-varying uncertainty about resource threshold influence the coordination among resource users?

Research Interns will be engaged primarily with the research project described above, but interns will have opportunities to be involved in other projects that are part of the Social Dimensions research for Project WiCCED (projectwicced.org); See Internship Descriptions for the following projects to learn about other Social Dimensions research opportunities:

* Cover crop persistence by Delaware farmers: A GIS investigation
* Continued participation in citizen science
* Examining the adoption of oyster farming in Delaware
* Experimental economics study of groundwater management
* Randomized controlled trial related to recruiting diverse students
* Homeowners’ willingness-to-pay for stormwater best management practices in Delaware

**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 foals of varying scope |
| Express ideas in writing | Write descriptions of research procedures, create a poster of your research, communicate via email professionally and in a timely and consistent fashion |
| Express ideas verbally | Discuss research activity in lab meetings, present poster at symposium |
| Work independently | Independent work ethic – work independently or with peers to problem solve  |
| Develop professional network | Work with lab team and broader Social Dimensions and Project WiCCED team to develop professional network, and utilize peer-groups to problem solve. |
| Maintain professional attitude and work principles (i.e. integrity, responsibility, diligence, following ethical standards) | Be on time, learn procedures, ask questions if unsure, respect everyone you work with, complete and maintain Institutional Review Board (IRB) Certification to work with human subjects in research |

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| Broad Scientific Research Skills | Specific Skills |
| Understand scientific terms  | Behavioral, experimental and environmental economics |
| Locate scientific articles and resources | Conduct searches for literature on environmental valuation |
| Understand research questions |  |
| Read and understand research articles |  |
| Apply research tools and techniques in research experiments  | Participate in the development of and data collection of economic experiments and/or surveys to understand human behavior related to water issues.  |
| Understand, apply, and explain scientific concepts and theories | In lab meetings, with lab personnel, and during research symposium |

**Prerequisites:**

Introductory experience with economics (e.g., successful completion of APEC 100, APEC 150, ECON 101, or similar course)

**Work Environment and Expectations:**

Laboratory environment: Work will primarily take place in 025 Townsend Hall. Hours are flexibly determined between student and mentor. Students will work part time during the fall and spring semesters, and full time during UD Winter Session, January 6-February 8, 2020. Students will also participate in a retreat, communications workshop and end of internship spring symposium.

**Stipend:**

$3,500 Direct deposit is required.

**Funding Source:**

National Science Foundation, Delaware EPSCoR Track I

**How to apply:** <https://ugresearch.udel.edu/PUB_Program.aspx>