**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: Dr. Kent Messer

Graduate Student Mentor:

Professional Staff Mentor: Dr. Laura Paul

**Project Title:** Continued participation in citizen science (Social Dimensions)

**Research Description:**

Climate change poses significant risks to coastal livelihoods. Increasing high tides and

catastrophic storms challenge flood and water management infrastructure. Many residents and

visitors to coastal areas are concerned about the threats of flooding and pollution but do not

have the means or training to contribute to solutions.

Citizen science describes the collection of data by the general public in collaboration with

scientists. Involving the public in projects can provide an avenue where both parties benefit.

The scientists receive data that otherwise would be extremely costly to collect, and the citizen

scientists are able to act on their concern for their local environment.

The Coastal Observer App encourages citizens to become active in monitoring weather and

water locally and will help a team of University of Delaware and Delaware Environmental

Institute researchers shape policy and environmental response. However, volunteers have a

high opportunity costs of time (the loss of potential benefit from other alternatives) and

economic theory only explains a small portion of volunteer behavior. Economic studies have

indicated that many volunteer only when requested to do so.

Using insights from behavioral sciences, UD researchers will design a Randomized Control Trial

(RCT) to understand decisions of citizen scientists to adopt and persist in data collection

practices. Specifically, we will study the decisions of citizen scientists in Delaware to adopt the

Spotteron Coastal Observer App designed to assist scientists. This research will also explore

several behavioral interventions aimed at encouraging continued use of the app. By addressing

various aspects of citizen science and volunteering, this project will generate policy relevant

insights on how to effectively incentivize adoption and persistent use of citizen science tools.

**Research Questions:**

1. Does the public adopt citizen science apps such as the Coastal Observer at higher rates when requested to do so directly, as opposed to being provided information about the app and its purpose?
2. Do behavioral nudges, such as 1) inviting citizen scientists to engage in the scientific and policy development process and 2) using app “badges” to reward posting, encourage persistent use of the Coastal Observer app?
3. Do monetary incentives (payments) encourage citizen scientists to participate more than a gift or other reward?

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 ccience
* 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 surveys to quantify willingness to pay for water quality improvements. |
| 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>