**DENIN Environmental Scholars Internships**

Dates of internship: June 7 through August 13, 2021

Location: Based on the ever-changing campus response to COVID student projects can be conducted in-person, virtually or hybrid depending on safety, feasibility and campus protocol. **This internship will be virtual.** If it becomes safe, feasible, and allowed through campus protocol, working in person will take place at theCenter for Experimental and Applied Economics, Townsend Hall, University of Delaware, Newark, DE 19711

Number of positions available: 1-2

Faculty Mentor: Dr. Kent Messer

Postdoctoral Research Fellow Mentor: Dr. Laura Paul

**Project Title:** Climate change adaptation: economic mechanisms to increase efficiency of coastal property buyouts

**Research Description:**

Properties that are frequently damaged by flooding are targeted for buyouts that are coordinated by local governments and paid for by FEMA. This project uses evaluates the different strategies that could improve homeowner uptake of coastal property buyouts. We first will catalog previous programs and then simulate how those programs might have fared using approaches from conservation, for example, a reverse auction. Then, we will develop a field experiment to conduct with homeowners and students that directly compares the performance of these potential buyout strategies. This experiment will incorporate the risk element that differentiates coastal property buyouts from regular conservation programs.

Research Themes

* Market failure: Severe repetitive loss properties are targeted for buyouts that are coordinated by local governments and paid for by FEMA. The allocation of resources towards maintaining services, rebuilding and buyouts is inefficient.
* Spatially explicit: Local governments face reluctant homeowners and there is risk of suboptimal spatial distribution of buyout uptake, i.e. checkerboarding or stragglers.
* Thresholds: buyouts might only be economically efficient if a sufficient number of households accept the buyout
* Moral hazard: There is a disconnect between a homeowner’s individual decisions and the decisions that are best for society. Homeowners might lack incentive to guard against storm/flooding risk if they feel protected from its consequences because of the assumed promise of buyout or restoration.

**Research Questions:**

1. What mechanism leads to the best outcome for coastal property buyout? How can the market failure be resolved for efficient expenditure of government money on climate adaptation?
2. What is the impact of the spatial dynamics in this context? How much does location matter?
3. What is the impact of moral hazard in homeowners’ decisions?
4. Do students and homeowners respond in the same way to mechanisms?

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

The DENIN scholars program helps students develop skills that foster future research interest and professional success.  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 is preferred.

**Work Environment and Expectations:**

Office/economics laboratory environment: Work will primarily take place **on zoom**. Hours are flexibly determined between student and mentor.

**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>