



# DAVIDSON FELLOWSHIP

## Margaret A. Davidson Graduate Fellowship Newsletter

This issue of the newsletter features the fellows conducting research at the Mid-Atlantic [national estuarine research reserves](#).

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## Fellow Highlights

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**Clara Chang, Columbia University and Hudson River Reserve, New York**

**Project title:** Using Clues from the Past to Better Understand the Future of Marshes along the Hudson River

**Importance:** Clara uses fossil pollen, macrofossils, historic lead pollution, and geochemistry on salt marsh sediment cores from Hudson River coastal wetlands to inform predictions about future sea level rise.

*"I am interested in this research topic because I am fascinated by the intersection of geology, the living environment, and humanity. I investigate questions such as what is the environmental history of the region, what are the basic processes that influence tidal wetland accretion, and how do humans change these processes? This work is particularly important to me because it has implications for understanding the potential effects of future sea level rise on the East Coast of the United States."*



**Taylor Armstrong, University of Maryland and Jacques Cousteau Reserve, New Jersey**

**Project title:** New Jersey Pinelands – Protector from Harmful Algal Blooms

**Importance:** Taylor's research will help scientists and managers understand how continued urbanization will impact harmful algal blooms, and where management efforts should be focused.

*"I am grateful for the Davidson Fellowship because I have the opportunity to have reserve staff as mentors and work in an area and on a project I am very interested in."*

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**Elisabeth Powell, University of Maryland and Delaware Reserve, Delaware**

**Project title:** Mapping Upland Forest Retreat from Sea Level Rise Using Remote Sensing

**Importance:** Elisabeth's project recognizes that we need to understand how forest structure changes with accompanying sea level rise and salt-water intrusion as a first step to understanding and predicting future marsh migration rates, as well as the associated losses from marsh and upland ecosystem services.

*"My passion for applied research stems from a feeling of 'duty' to preserve these ecosystems."*

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**Daniella Hanacek, University of Maryland and Chesapeake Bay - Maryland Reserve, Maryland**

**Project title:** A Brackish Balance: Carbon Sequestration in Tidal Marshes of the Chesapeake Bay

**Importance:** In addition to numerous other ecosystem services, tidal wetlands store vast amounts of carbon. The conditions that allow them to do so, however, also allow for the production of methane, a potent greenhouse gas. Therefore, Daniella's project seeks to quantify methane production to refine estimates of carbon sequestration in these wetlands.

*"I am grateful for the Davidson Fellowship because it has encouraged me to think boldly as a scientist, provided a motivating sense of responsibility, and introduced me to the friendship and support of my mentor and staff at the reserve."*

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**Derek Detweiler, Virginia Institute of Marine Science and Chesapeake Bay - Virginia Reserve, Virginia**

**Project title:** The Make-up and Break-up of Tidal Marsh Carbon

**Importance:** Derek's research investigates the factors controlling decomposition processes in tidal marsh soils susceptible to climate disturbance.



*"I am interested in this research topic because I love getting muddy in the marsh! Aside from rewarding field and lab work experiences, the role that marshes play in the coastal landscape, particularly in regards to their biogeochemistry, remain poorly understood. There are several knowledge gaps that I am hoping to address with this research, and it is exciting to be at the forefront of new discoveries."*

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## Reflections on Networking Events

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**2021 NERRS and NERRA Annual Meeting** – The annual meeting brings together all program sectors—management, research, education, training, stewardship, and representatives from the reserve system’s friends and foundations groups. As part of the annual meeting’s virtual activities, the Davidson Fellows participated in a speed networking event to connect with reserve system and NOAA professionals.

Participants were reminded that *"Margaret was the consummate networker, with a mind that served as an encyclopedia of existing and potential partnerships."* With that as inspiration, conversations yielded many new connections and commitments to follow up with one another on common goals and research interests.

### About the Program

This fellowship program honors the legacy of Margaret A. Davidson, a visionary and pioneer in the world of coastal resource management. The Margaret A. Davidson Graduate Fellowship emphasizes professional development, mentoring, and innovation, and offers students admitted to or enrolled in a master’s or doctoral program the opportunity to conduct research within one of the 29 [national estuarine research reserves](#). For more information, and to see a list of the full 2020 to 2022 cohort, visit [coast.noaa.gov/nerrs/research/davidson-fellowship.html](https://coast.noaa.gov/nerrs/research/davidson-fellowship.html)

### Program Timeline

Call for applications for the 2022 to 2024 cohort is now closed  
Late Spring 2022 – 2022 to 2024 cohort announced  
August 1, 2022 – Start date for the 2022 to 2024 cohort

