Business & Environment

Duke University, Nicholas School of the Environment

Thanks to your generosity, the Business & Environment (B&E) program at the Nicholas School of the Environment is expanding opportunities for students to translate environmental science into real-world impact. Your support enables students to engage directly with global partners, apply classroom learning to pressing environmental challenges, and help bring Duke-led innovations into policy, industry, and international arenas.

"Our students do much more than come up with creative concepts—they learn how to turn their ideas into viable products, present them to consumers, secure funding, and develop marketing strategies to ensure they find their audience. This is yet another example of how the Nicholas School reaches beyond the classroom to make a meaningful impact in the real world."
– Stanback Dean Lori Bennear

The Mobile MRV Lab team at the Prototypes for Humanity competition in Dubai

Jessica Stubbs MEM'26

One powerful example of your impact is Jessica Stubbs MEM'26, who was able to travel to Dubai for the Prototypes for Humanity competition. She also developed a marketing plan for the Mobile MRV Lab, a solution developed by the Cassar Lab to remove carbon dioxide from marine environments. It was one of 100 teams selected from over 3,500 applicants.

"I had the honor of representing Duke University Nicholas School of the Environment and the Cassar Lab at Prototypes for Humanity in Dubai: the most kinetic arena I've stepped into. Showcasing the Cassar mobile marine MRV system underscored a global reality: blue carbon and mCDR cannot scale without data integrity. We're building the infrastructure to change that. I'm immensely grateful to Duke, the Cassar Lab, and the P4H team for a transformative experience." - Jessica Stubbs

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What is the Mobile MRV Lab?

Today's systems for carbon dioxide removal are slow and fragmented, lacking real-time, high-frequency monitoring. The Mobile MRV Lab, developed by the Cassar Lab, is a real-time, field-deployable system built to support safe and scalable solutions for removing carbon dioxide from marine environments. This platform performs various roles that are critical for the removal of CO2:

- Measuring nitrogen fixation and its role in ecosystem productivity
- Conducting continuous measurement of photosynthesis
- Measuring oxygen and air concentration in water to assess photosynthesis and respiration levels
- Measuring the quality of dissolved inorganic carbon in a body of water

These technologies work together to provide insights into ecosystem health, helping industries like energy, agriculture, and waste management make data-driven decisions.

Portable, real-time environmental monitoring for ocean-based carbon removal designed by the Mobile MRV lab

The Team

Nicolas Cassar

Cassar is a professor of biogeochemistry at Duke's Nicholas School. His research focuses on environmental biogeochemistry and physiology, with the objective of constraining the mechanisms governing carbon cycling and climate.

Katryna Niva

Niva graduated from Princeton University in 2022 with a concentration in chemistry and a certificate in environmental studies. Her research interests include marine nutrient cycling and investigating anthropogenic impacts on marine biogeochemistry.

Akash Aithal

Aithal is a product marketing manager with 6+ years of cross-functional experience across product marketing, consulting, and software development. He combines technical fluency with strategic storytelling to turn customer insights into measurable product adoption and revenue impact.