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Department of Marine Sciences
Presents a Seminar by

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Ocean Carbon Dioxide Removal via Electrochemical Ocean Alkalinity Enhancement: Opportunities for the Marine Science Community

The 2022 report, Mitigation of Climate Change, released by the Intergovernmental Panel on Climate Change (IPCC) suggests that we will need to remove 5.5 gigatons of carbon dioxide (CO₂) from the atmosphere by 2100 to limit global warming to 1.5°C. The ocean is a promising reservoir for carbon dioxide removal (CDR) because it contains approximately 45 times more carbon than the atmosphere, and acts as a natural control for atmospheric CO₂ levels. The National Academies of Sciences, Engineering, and Medicine report, A Research Strategy for Ocean-based Carbon Dioxide Removal, recently recommended a \$125 million research program to better understand overarching challenges for all ocean CDR approaches. Ocean alkalinity enhancement (OAE) is a specific ocean CDR approach that reverses ocean acidification, especially close to shore, and draws additional CO₂ from the air into oceanic bicarbonate where it is stored for over 10,000 years, mimicking the Earth's natural mechanism for regulating the atmospheric CO₂ concentration. In this talk, I will review the latest results from my group on electrochemical ocean alkalinity enhancement experiments being performed at Flax Pond Marine Lab at Stony Brook University, as well as describe the efforts to commercialize this technology at Ebb Carbon, Inc. in San Carlos, CA. Finally, I will highlight research challenges and opportunities to which the marine science community could lend their expertise.

Host: Frank Bohlen

Time & Date: 11:00 am, Friday, April 21, 2023

Place: Lowell Weicker Building, Seminar Room 103 (or WebEx)

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