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UNIVERSITY OF CONNECTICUT

Department of Marine Sciences  
Presents a Seminar by

**Mike Lomas**

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## **Adaptive Carbon Export Response to Warming in the Sargasso Sea**

Ocean ecosystem models predict that warming and increased surface ocean stratification will trigger a series of ecosystem events leading to a reduction in the biological export of particulate carbon to the ocean interior. We present a nearly three-decade time series from the open ocean that documents a biological response to ocean warming and nutrient reductions wherein particulate carbon export is maintained, counter to expectations. Carbon export is maintained through a combination of phytoplankton community change to favor cyanobacteria with high cellular carbon-to-phosphorus ratios and enhanced shallow phosphorus recycling leading to increased efficiency of nutrient use. These results suggest that surface ocean ecosystems may be more responsive and adapt more rapidly to changes in the hydrographic system than is currently envisioned in earth ecosystem models, with positive consequences for ocean carbon uptake.

**Host:** Senjie Lin

**Time & Date:** 11:00 am, Friday, October 1, 2021

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