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Department of Marine Sciences
Presents a Seminar By

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How Green is "Blue Carbon"?: Optics and Carbon Dynamics in Seagrass Ecosystems

"Blue carbon" is the term used to describe the long-term carbon (C) stored for hundreds to thousands of years in the biomass and deep sediments of vegetated ecosystems such as tidal marshes, mangroves, and seagrass beds. Coastal ecosystems are disappearing at alarming rates, but quantification of the global extent and the subsequent release and fate of carbon released from seagrass beds is lacking. Sensitivity studies suggest that up to 1 billion tons of "blue" carbon dioxide are released each year with an estimated economic cost reaching $40 billion annually.   Here, I will address some of the methods for quantifying the spatial extent of these valuable coastal ecosystems using remote sensing approaches. Reflectance of a seagrass meadow is the result of complex interactions between the overlying water column, the canopy bi-directional reflectance distribution function (BRDF) resulting from canopy structure and position, and leaf and sediment optical properties.   Results from a 3-dimensonal radiative transfer model applied to hyperspectral airborne imagery from the PRISM sensor will be presented to quantify leaf area index. Field assessments reveal significant amounts of carbon exported as leaf debris or "wrack" that can also be assessed with remote sensing imagery.   More robust methods for mapping the distribution of these valuable ecosystems will allow for better estimates of habitat extent and carbon exchange between the oceanic, terrestrial, and atmospheric reservoirs.

Host: George McManus
Time & Date: 11:00 am, Friday, September 25, 2015
Place: Marine Sciences Building, Seminar Room 103

Please see this page for cancelations and additional seminar information, email marinesciences@uconn.edu, or call 860-405-9152 or 860-405-9151