FALL 2016 SEMINAR SERIES

DEPARTMENT OF OCEAN, EARTH, AND ATMOSPHERIC SCIENCES
3:00PM – ROOM 200 IN THE OCEANOGRAPHY/PHYSICS BUILDING
THURSDAY SEPTEMBER 8th, 2016

"Productivity, pH and Carbon Cycling in Dynamic Coastal Ecosystems."

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ABSTRACT

Coastal environments are major areas of biogeochemical cycling due to their shallow depths, high light levels, and the intersection of inputs from open ocean and terrestrial sources. These dynamic properties constrain carbon cycling, community interactions, and the overall ecosystem resiliency to natural and anthropogenic stressors; but analyzing the importance and interactions of these complex biogeochemical and physical processes is challenging. High rates of productivity and calcification, combined with restricted water exchange, can lead to large changes in the water column carbonate chemistry, pH, and oxygen concentrations that exceed even 100 year predictions for the open ocean, on a daily basis. This talk will examine ecosystem-level metabolism and carbon cycling utilizing novel in-situ sensors and platforms, specifically the eddy covariance technique to examine both benthic and air-sea exchange. The results reveal the insight that can be obtained through high-frequency, in situ observations and highlights the need for ecosystem-level measurements in the analysis of dynamic ecological communities. In situ oxygen and carbon exchange rates are presented from benthic environments with complex three-dimensional biological structures including coral reefs, seagrass beds, and permeable sediments. These communities are primary importance in coastal systems, and understanding their role in, and significance to, carbon cycling and ocean acidification is vital to the sustainability and management of coastal environments.

AFTER THE SEMINAR, PLEASE JOIN US IN ROOM 404, THE ZANEVELD CONFERENCE ROOM, FOR COFFEE AND COOKIES, AND TO MEET WITH THE SEMINAR SPEAKER.