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Department of Marine Sciences
Presents a Seminar by

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Sediment transport in coastal systems: Implications for oxygen and organic matter cycling

Sediment transport processes affect oxygen and carbon dynamics in coastal environments through a variety of processes. Seabed resuspension, for example, can vertically mix sediment and water, facilitating decomposition of organic matter and oxygen consumption. Redistribution of inorganic and organic particles among coastal environments, e.g. between marshes and estuaries, can also affect biogeochemical budgets. The relative importance of sediment transport versus other physical and biogeochemical processes, however, can be difficult to quantify in coastal systems, which are characterized by variable environmental conditions. This motivated the development of a coupled hydrodynamic-sediment transport-biogeochemical model that accounts for processes such as advection, resuspension, seabed-water column diffusion, organic matter remineralization, and oxidation of reduced chemical species. Analysis of model results from the northern Gulf of Mexico and other coastal systems indicated that resuspension can increase organic matter decomposition, facilitating the formation of low-oxygen, i.e. hypoxic, waters. Ongoing work includes considering the extent to which particulate organic carbon that is eroded from a marsh is re-deposited on the surface of the marsh, remains in the estuary, or decomposes.

Host: Samantha Siedlecki

Time & Date: 11:00 am, Friday, November 9, 2018

Place: Marine Sciences Building, Seminar Room 103

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