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Coast to Cosmos Lecture Series

Modeling the Dynamics of Large River-derived Materials in the Coastal Ocean**George Xue, Louisiana State University**Digital Media Center 1034
February 04, 2015 - 12:00 pm**Abstract:**

Changing climate and land use practices, coupled with general increase in human development activities, have the potential to dramatically alter coupled hydrologic-biogeochemical processes and the associated movement of water, sediments, nutrients, and carbon through watersheds. Such changes influence the delivery of dissolved and particulate materials from terrestrial systems into rivers, estuaries, and coastal ocean waters. Consequences of climate and land use related changes would be particularly evident in large river basins such as the Mekong River in South Asia and the Mississippi River in North America. In this seminar, I will first present the sediment dynamics of the Mekong River in the South China Sea via combined in-situ and coupled ocean-wave-sediment transport modeling technique, followed by a numerical investigation of the nutrients and carbon dynamics in the Gulf of Mexico using a coupled physical-biogeochemical model.

Speaker's Bio:

George Xue is an Assistant Professor in the Department of Oceanography & Coastal Studies. Dr. Xue started his Ph.D. study at NCSU in fall 2005 to pursue a better understanding of the transport and deposition dynamics of Mekong River (the largest river in Southeast Asia) sediments. Being the first ever U.S. marine science student working on the Vietnamese coast, Dr. Xue's Ph.D. dissertation research dealt with geological processes of both contemporary (sediment transport modeling) and post-Last Glacial Maximum (LGM) time scales (acoustic profiling and coring). Upon receiving his Ph.D. degree in Marine Sciences in 2010, Dr. Xue joined the Ocean Observing and Modeling Group as a postdoctoral research associate and has been exposed to a number of interdisciplinary oceanographic studies including coupled ocean-wave-sediment transport modeling, operational Nowcast/Forecast system development, tracer simulation for oil spill, storm surges assessment, and ocean glider deployment. Dr. Xue is now working on a coupled physical-biogeochemical model trying to qualify impacts of land use and climate changes on riverine inputs, mainly the Mississippi/Atchafalaya, and the structure and productivity of marine ecosystem in the Gulf of Mexico.

