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Fall 2010 COLLOQUIUM SERIES

# **GRANULAR AND MULTIPHASE FLOWS**

*Sponsored by*

**The Granular Science Laboratory**

**Prof. Nancy Jackson**

***Department of Chemistry & Environmental Science  
New Jersey Institute of Technology***

**November 29, 2010**

**11:30 a.m. – 1:00 p.m.**

**GITC 3710**

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## **Aeolian Sediment Transport on Managed Coastal Systems**

Beach nourishment is used to restore the sediment budget on eroding shorelines and protect human infrastructure. These managed systems have design geometries and source sediment characteristics that differ from what would occur under natural conditions. Dunes are designed primarily to provide protection against wave attack and flooding. They are often constructed using earth moving equipment and sand fences that create a linear feature with little topographic diversity. In New Jersey, the backshores of these managed systems are often raked to remove beach wrack (litter) and maintained as "slabs of sand," and vegetation that would naturally colonize the beach is eliminated. This presentation will present results of a two-year field investigation to assess differences in sediment transport across backshore and foredune environments in New Jersey that are managed for shore protection with those that are allowed to evolve naturally. Results from instrumented field studies will be reported that assessed differences in transport rates from the beach to foredune caused by changes in beach width, sand fence deployment, and vegetation on raked and unraked backshores.

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Nancy Jackson is a coastal geomorphologist and professor in the Department of Chemistry and Environmental Science at New Jersey Institute of Technology. Her research focuses on coastal processes on beaches and dunes in estuarine and ocean environments. She has received funding from the National Science Foundation, National Geographic Society and National Oceanic and Atmospheric Administration. Her research has appeared in journals such as *Earth Surface Processes and Landforms*, *Estuarine, Coastal and Shelf Science*, *Geomorphology*, *Marine Geology* and *Sedimentology*. She is an Associate Editor of *Estuaries and Coasts* and *Journal of Coastal Research*. Jackson received her bachelor's degree from Clark University, her master's degree from Antioch New England Graduate School and her doctorate from Rutgers University.

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