

# Fall 2013 COLLOQUIUM SERIES

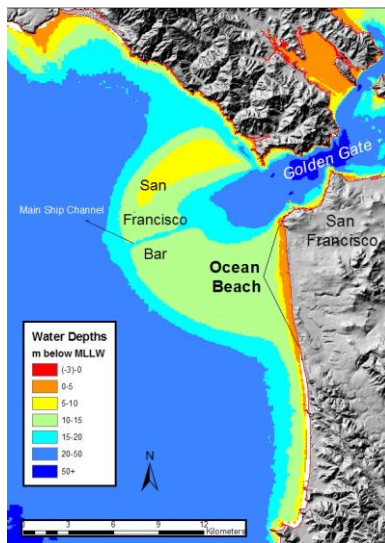
# GRANULAR AND MULTIPHASE FLOWS

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**Prof. Dan Hanes**  
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Program Director – Geoscience and Environmental Science  
St. Louis University

October 16, 2013  
2:30 – 4:00 p.m.  
Mechanical Engineering Center – Room 224

## Coastal Morphology and Processes near San Francisco, CA



The unusually strong tidal jet exiting San Francisco Bay at the Golden Gate results in the formation of a prominent ebb tidal delta and a large field of marine sand waves. The sand waves are highly dynamic, sometimes with movements counter to that expected based on their shape asymmetry. The overall size and shallow bathymetry of the ebb tidal delta protects some of the coast from extreme storm waves, but the delta also focuses wave energy toward the central and southern portions of Ocean Beach. Wave transformation due to the ebb tidal delta likely contributes to a chronic erosion problem at the southern end of Ocean Beach and also to the intermittent closure of the entrance to

Crissy Field Marsh, a recently restored tidal marsh.

Daniel Hanes is a scientist, educator, and consultant whose career is noted for high quality research, mentoring, and valuable service to his profession. In both academic and federal government organizations Hanes has conceived and carried out numerous basic and applied research projects, and advised approximately 35 graduate students and post-docs. He has over 300 publications and conference presentations in the fields of coastal processes, particle technology, and sedimentation processes. His publications are widely cited in the scientific literature, with an ISI h-index of 21. Hanes has provided scientific and managerial leadership for national and international collaborative projects. He has been principal investigator for research contracts and grants funded cumulatively at over \$10M. Hanes has served as an advisor and reviewer for several government agencies and universities. Hanes provides consulting expertise and litigation support in surf-zone safety, rip current drownings, small boat accidents, coastal development, nearshore processes, particle science and technology, and sustainable coasts and waterfronts. Hanes is a founding member of the Board of Directors of the PADI Foundation.

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