

# Cornell Fluid Dynamics Seminar Series

Presents

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## **“The Role of Erosion at the Head of Suspension Currents: Theory and Experiment”**

12:15-1:15 p.m.

Tuesday, December 01, 2009

178 Rhodes Hall

Pizza and refreshments will be served at noon.

Suspension currents are sustained by erosion of the underlying bed, which produces a fluid of effective density above ambient. We examine the head of gravity currents where erosion is the primary driver in determining the characteristics and dynamics of its motion. We study these flows with an approach combining theory, experiments and numerical simulations. The theory involves a density perturbation to the underlying potential flow. The simulations, based on FLUENT, examines details of the flow and informs assumptions of the theory. Suspension currents are imaged by use of fluorescent tracer in a water flume.