

**Center for Fluid Mechanics, Division of Applied Mathematics  
Fluids and Thermal Systems, School of Engineering  
Joint Seminar Series**

**TUESDAY – APRIL 23, 2013**

**3:00pm**

**Barus & Holley, Room 190**

**Neil Balmforth**

**The University of British Columbia  
Vancouver, B.C**

**Skipping, Sloshing and Washboards**

In this talk I will describe recent results on the modelling of how the collision of an object with a moving, deformable surface can generate an apparent ``super-elastic" bounce. The phenomenon allows towed paddles to skip continually at high speed over water (demanding an extension of models of skipping stones) and to ``washboard" layers of sand or mud with only a single passage over that substrate (in contrast to the conventional explanation for washboard roads). Along the way, NJB will mention a related instability involving the sloshing of a fluid reservoir coupled to oscillations of a movable dam, a hydrodynamic analogue of musical instruments like the clarinet.