

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

**L. Mahadevan
Harvard University
School of Engineering and Applied Sciences
Cambridge, MA**

Viscous Buckling: Treacle to Tectonics

Using a well known but not oft used analogy between creeping flow and linear elasticity, I will consider the pseudo elasticity of simple fluids and its consequences for a class of geometrically nonlinear free boundary problems that involve the buckling of fluid filaments, sheets and shells. Examples include the problem of how treacle meets toast, the shape of a fluid catenary, the collapse of a bubble and the morphology of ice shelves and subduction zones. I will then show how one can easily extend our analyses to account for the role of complex material behavior in such instances as plasticity, viscoelasticity etc.

TUESDAY - DECEMBER 6, 2011

3:00 PM

Barus & Holley, Room 190