Watch Out! DIFFERENT ROOM

UC **SANTA BARBARA**

Department of Earth Science

Speakers Club

BROIDA 1640 • THURSDAY NOV 29th.• 2:00 PM

Plumes: Structure and Entrainment, a 3D experimental Investigation

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Much of our understanding of the geochemical evolution of the mantle comes from chemical analyses of ocean island basalts. Explained as the product of hot material rising from the deep mantle, studies of OIB lavas have shaped not only our view of the Earth's chemical evolution, but also the dynamical (convective) structure of the mantle. I take things back to understanding what mantle plumes are, what their structure really is, whether they are detectable in the mantle, and most important for understanding chemistry, how they entrain material during their ascent in the mantle. I will show results from novel dynamical experiments using state-of-the-art visualization techniques for velocity and temperature and Lagrangian flow analysis to determine the ratio of source vs entrained plume material.