Date: **Wednesday, April 7th**

Time: **3:00 pm**

Location: **Hodson 210**

Speaker: **Dr. Stephen Monismith**
Stanford University

Title: **"Flow effects on subtidal salinity variations in Northern San Francisco Bay"**

Abstract

In this talk I will discuss how flow, stratification and mixing interact to determine the structure and geographic positioning of the salt field in Northern San Francisco Bay. This work was originally motivated by EPA efforts to determine ecologically relevant measures of salinity intrusion that could be used for developing regulatory policies for flows entering San Francisco Bay. Based on analysis of flow-abundance relations at all trophic levels, the EPA determined that X2, the distance of the 2 ppt (psu) isohaline from the Golden Gate, fulfills this role. Among other things, when position in the estuary is scaled by X2, salinity distributions for all but the highest flowrates are nearly self-similar. However, examination of the relationship between X2 and flow shows that salinity intrusion has a weaker dependence on flow than would be expected from classical salt balance theory. I will argue that the reason for this is that when flow increases, the longitudinal density gradient increases, leading to strengthening of tidal variations in stratification. This in turn increases the upstream salt flux due to gravitational circulation and thus limits the downstream movement of the salt field.