

Oceanography Seminar

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"The Coral Reef Balancing Act: impacts of climate change on accretion-erosion in the context of natural variability"

Management efforts to sustain coral reef ecosystems often focus on coral health and coral growth rate, but reef resilience also depends on the rate of erosion. Corals and other calcifiers accrete calcium carbonate (CaCO_3) skeletons while bioeroding organisms erode reefs directly, through grazing on and boring into CaCO_3 reef substrate, and, indirectly, by increasing reef susceptibility to physical erosion from mechanical stress and dissolution. In order for reefs to persist, the rate of reef growth/accretion must be higher than reef erosion and dissolution; thus, to manage for reef resilience it is important to understand what environmental conditions have the greatest effect on bioerosion rates and, further, how anthropogenic disturbances, such as ocean acidification, modify the accretion-erosion balance. In this talk I will discuss two questions pertaining to the impacts of environmental variability on the accretion-erosion balance: 1) what are the main environmental drivers of the accretion-erosion balance on Hawaiian coral reefs, and 2) how will the accretion-erosion balance shift with the predicted rise in ocean acidity and sea surface temperatures (SST)?

Thursday October 30, 2014 3:00 p.m. MSB 100