

# Oceanography Seminar

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### “Repeat bleaching of a central Pacific coral reef over the past six decades”

Extreme sea surface temperatures (SSTs) in 2015-16 caused mass coral bleaching on many Pacific reefs. At Jarvis Island, a highly productive coral reef ecosystem in the central equatorial Pacific, SSTs exceeding 3°C above normal persisted for 20 consecutive weeks. 95% of corals bleached and died. But 2015-16 was not the first time Jarvis had experienced extreme heat, and signatures preserved in the skeletons of coral survivors indicate a long history of bleaching as far back as 1912. Here, we use these signatures to reconstruct a quantitative history of bleaching of the Jarvis coral community over the past 57 years. Our analysis reveals ten events between 1960 and 2016, ranging from moderate (<30% bleaching) to severe (>30% bleaching), and each coinciding with documented El Niños. In contrast with the global-scale trend, the severity of bleaching on Jarvis did not increase over this time period, nor did the frequency of bleaching events. Nevertheless, the magnitude 2015-16 thermal anomaly and the severity of the bleaching that ensued was unprecedented in the last six decades. The trajectory of recovery of this demonstrably resilient reef system will provide critical new insights into the potential for coral reef resilience under 21st century ocean change.

**Thursday October 25<sup>th</sup>, 2018 3:00p.m. MSB 114**

For the list of Fall 2018 Oceanography seminars and speakers, please visit:

<http://www.soest.hawaii.edu/oceanography/seminar.html>