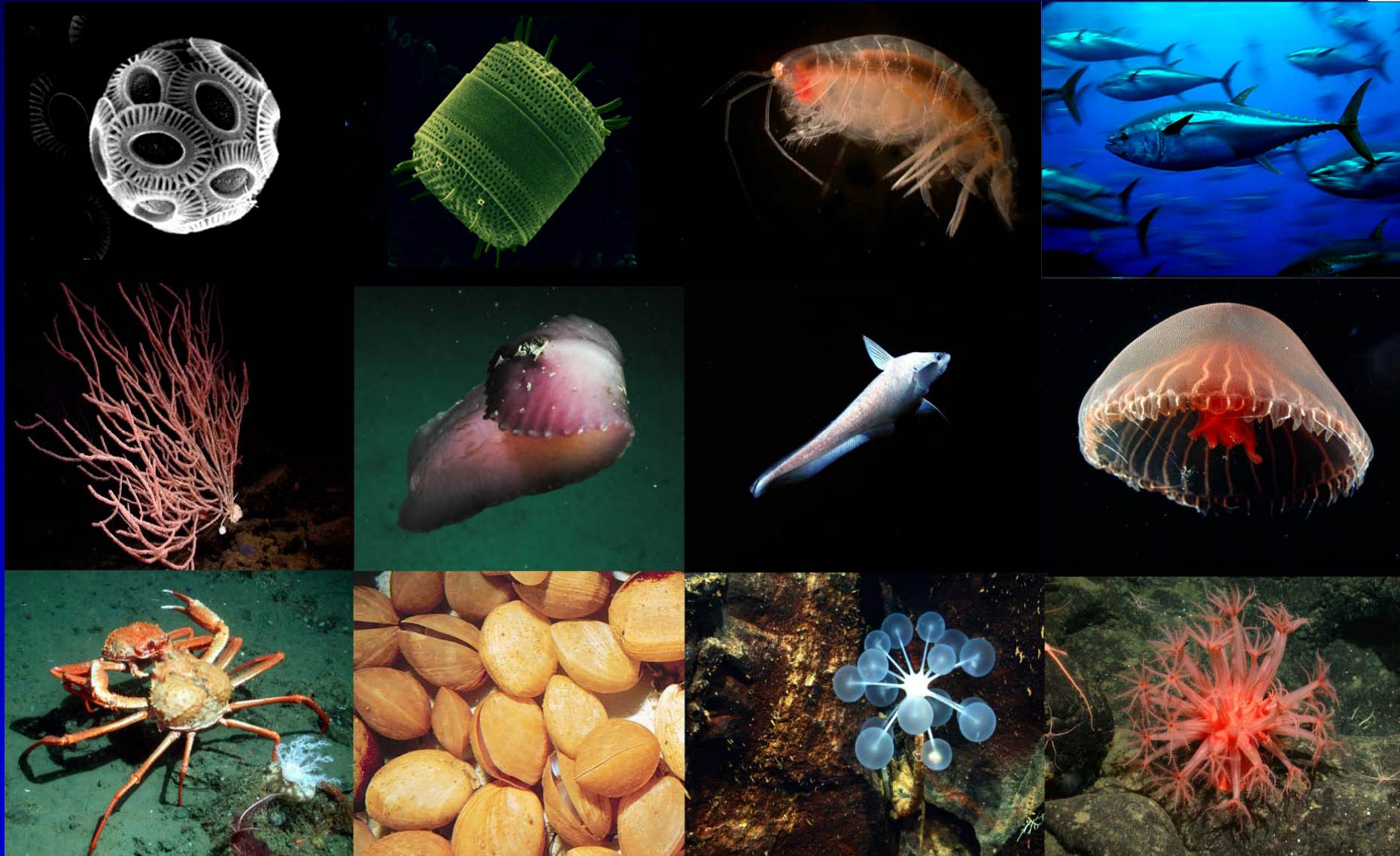
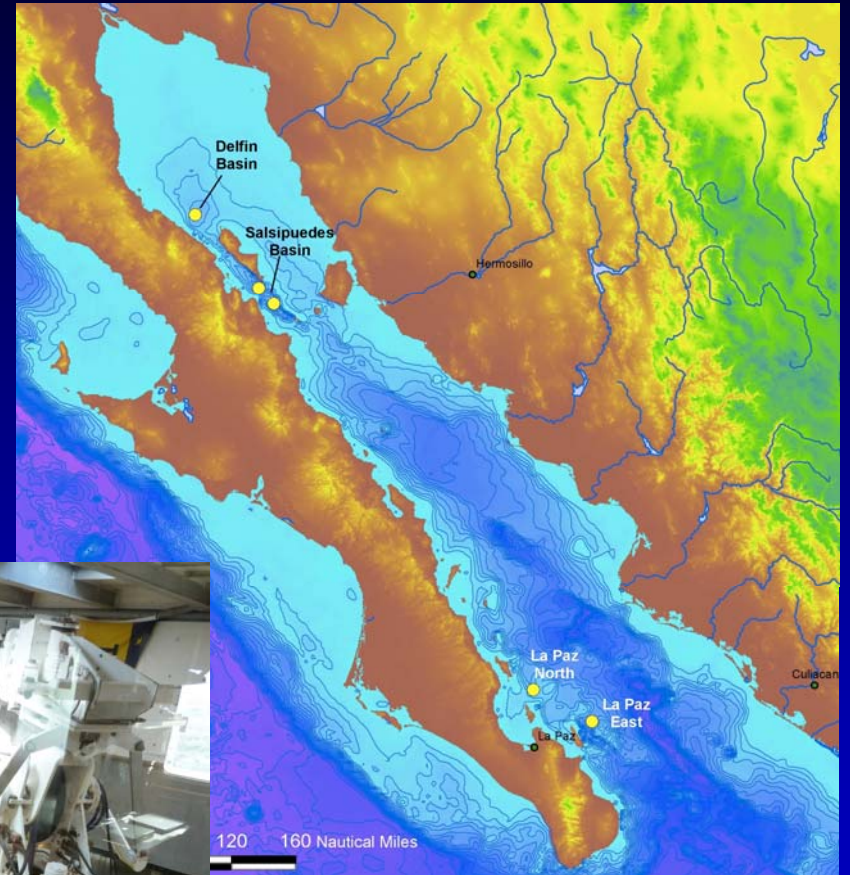
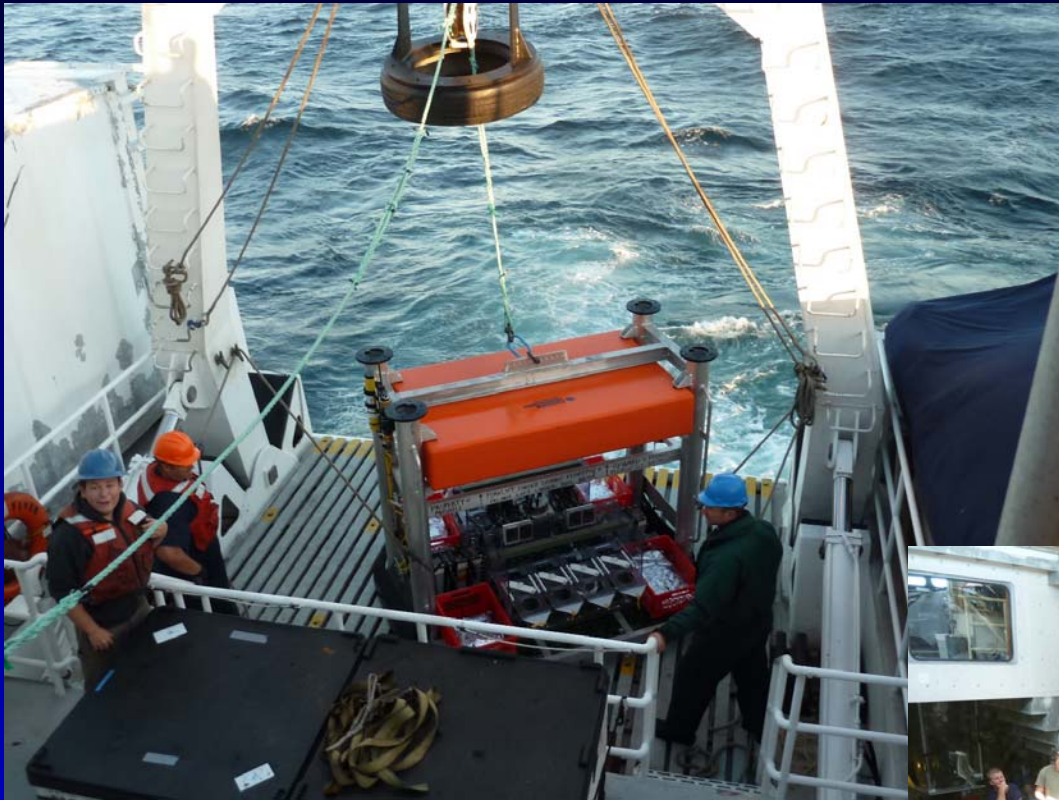


The effects of ocean acidification on organisms: an ecophysiological perspective

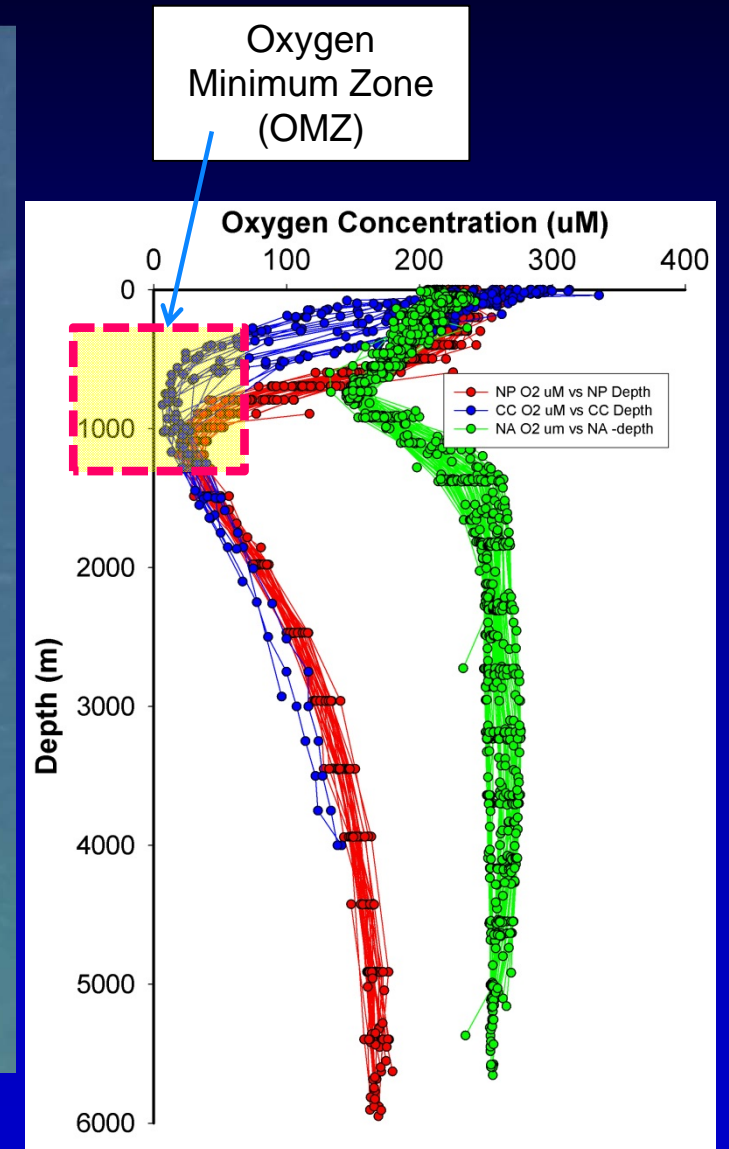
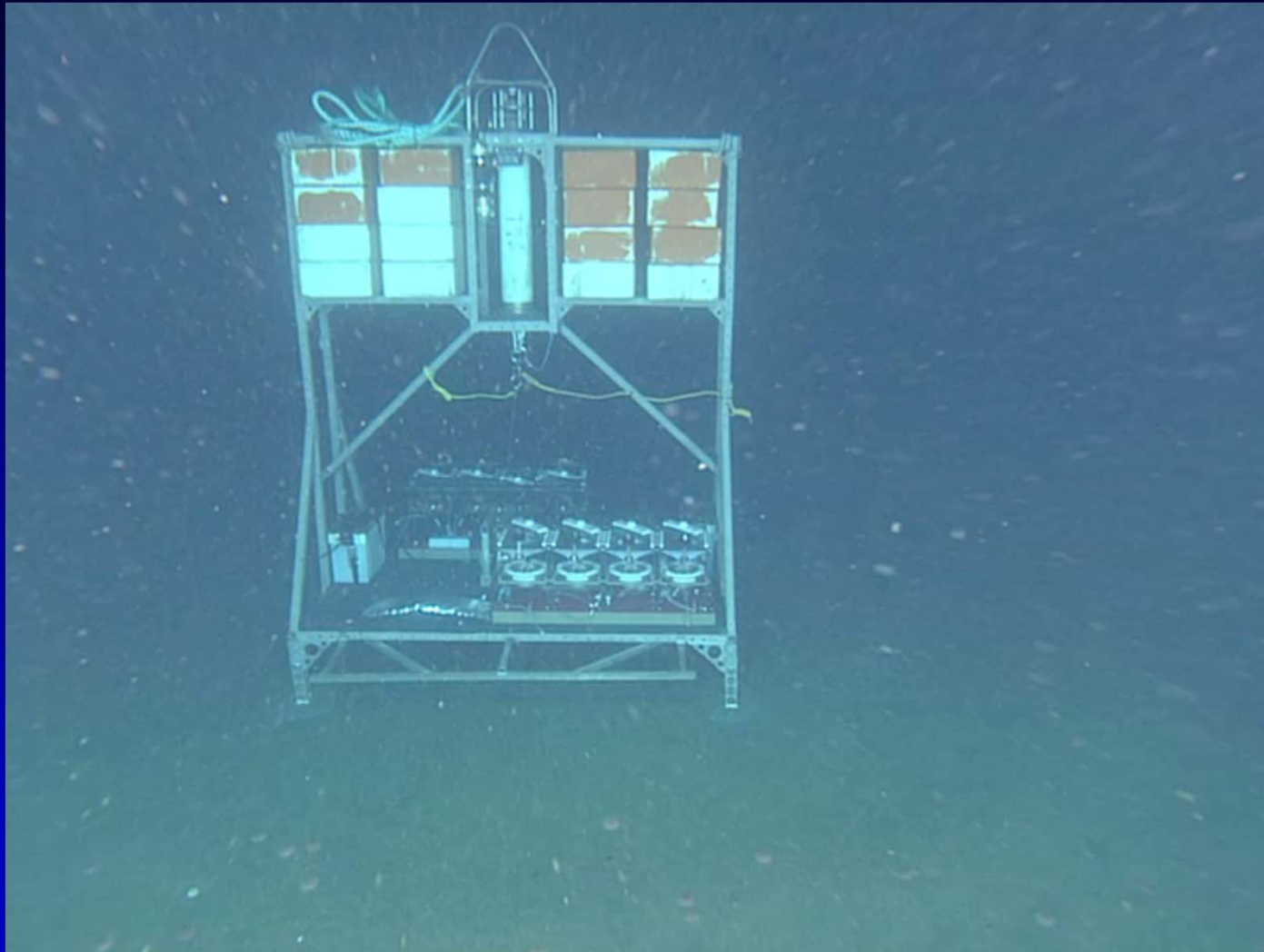
Jim Barry, MBARI, UCSC, 2011



In situ respiration experiments, Gulf of California

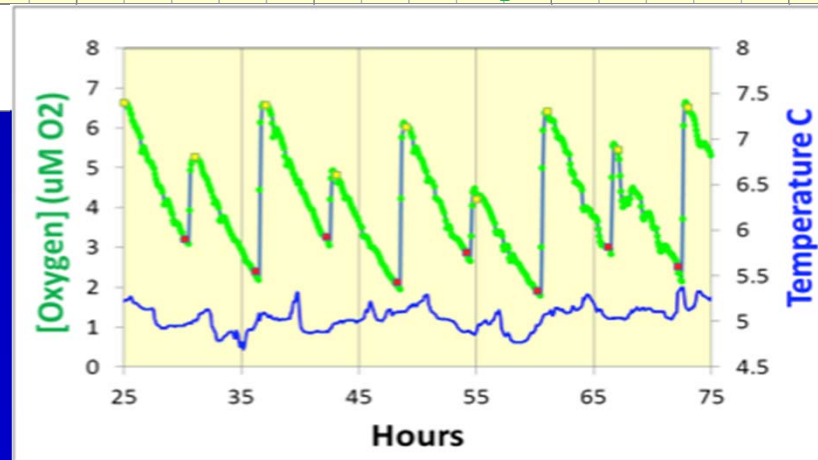
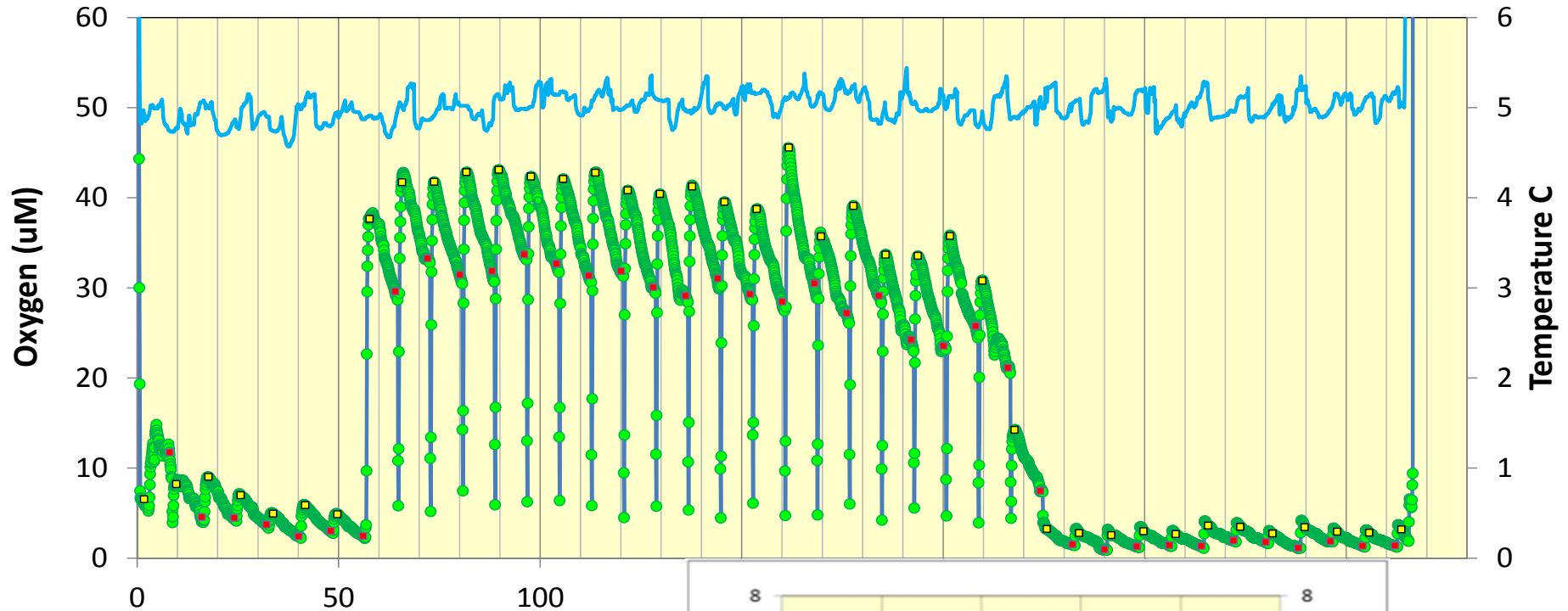


Measuring sea urchin respiration rates in the deep-sea



Urchins are oxygen-stressed in the OMZ

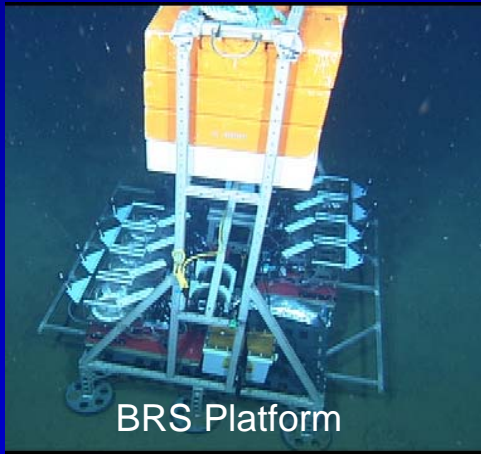
Given more oxygen, respiration increases



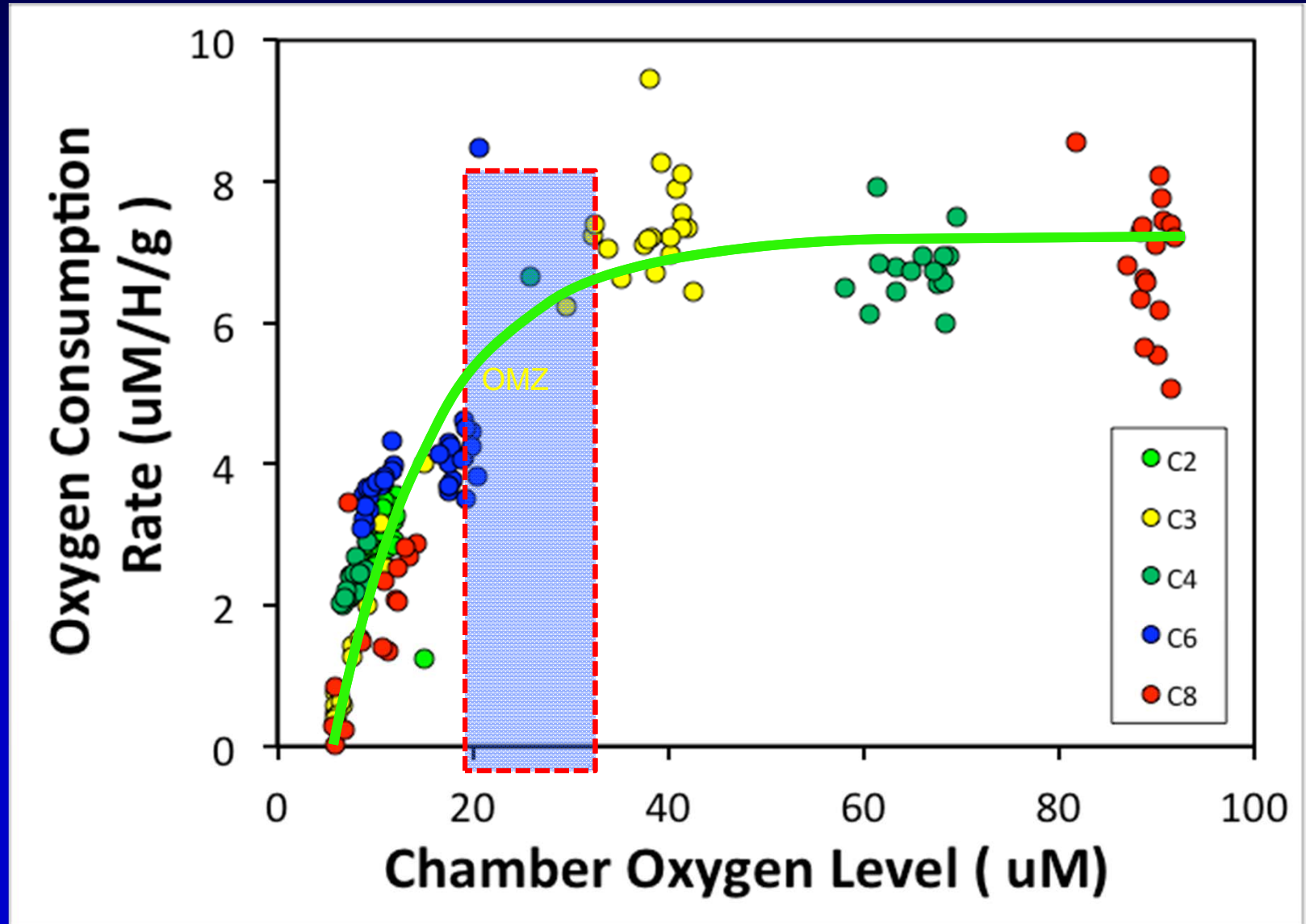
Fragile Urchin – *Allocentrotus californiensis*

Expansion of hypoxia likely to affect deep-sea urchins and other animal populations

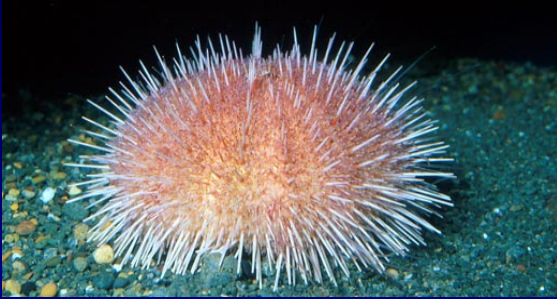
Urchin O₂ Consumption vs. Available O₂



BRS Platform

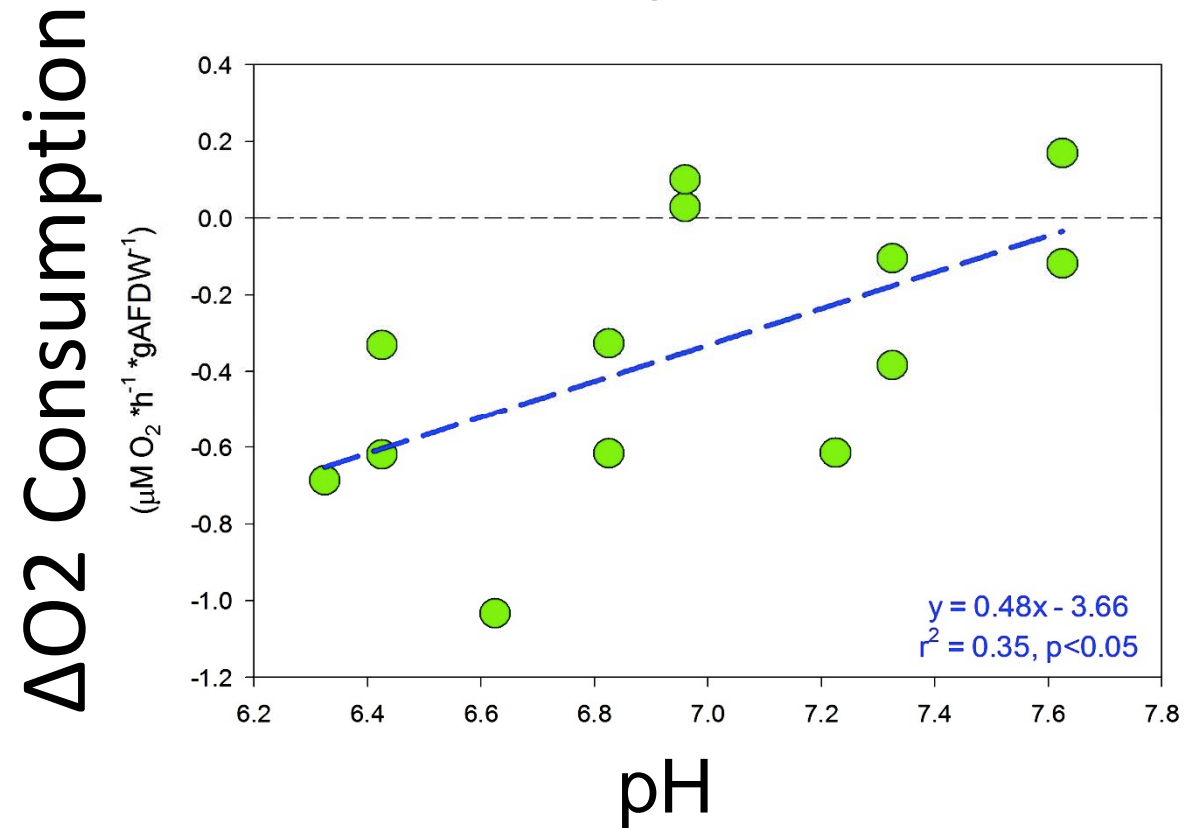


Ocean Acidification reduces urchin respiration rates

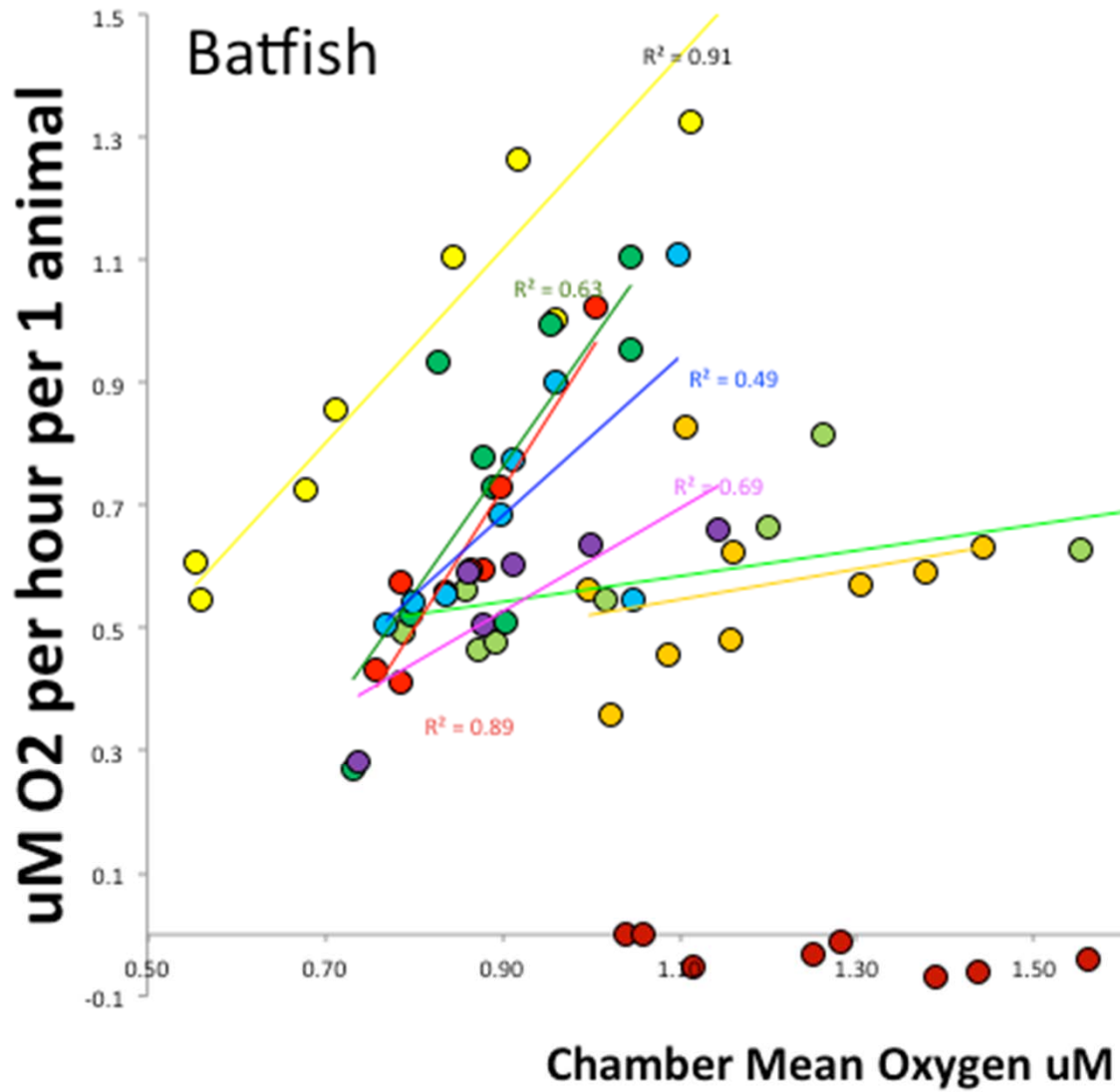


Fragile Urchin

Urchin respiration rates



Batfish respiration constrained by oxygen in OMZ



No effect of OA on Batfish respiration

