Coastal Trophic Ecology Lab

REU project ideas, summer 2021

Mentor: Galloway (and possibly some work with CTELab grad students)

**Purple and red sea urchin abundance and feeding ecology**. Sea urchins are important herbivores/omnivores in NE Pacific kelp forests; they actively graze seaweeds, capture sinking drift detritus, or graze upon sessile encrusting algae or invertebrates. Sea urchins transform these resources into gonads for reproduction, and waste, which feeds other organisms on the reefs they inhabit. Galloway has a new Oregon Sea Grant funded project to study sea urchin density and benthic ecology on the Oregon Coast. We have (or will have) photographs and videos of purple and red sea urchins (collected by divers, drop cameras, remote operated vehicles) for the Sea Grant project and past work in Washington, and we need to quantify densities and sizes of sea urchins and what proportion of these animals are in possession of drift algae, among other questions. We also need to do experimental feeding trials in the lab to quantify algal consumption rates by both sea urchin species. Depending on their interests, the REU students may help with local coastal boat-based drop camera and ROV surveys, and focus their projects on photograph/video analysis from these surveys, and/or sea urchin wet-lab feeding trials. NOTE: Unfortunately, due to logistical limitations, REU students will probably not be able to do any SCUBA diving field work (even if they are certified divers).