Coral Reefs and Invasive Macroalgae: Engaging Native Hawaiians in STEM

Dr. Chris Wall (cbwall@ucsd.edu) Department of Earth Sciences, SOEST, UHM Dr. Andrea Kealoha, Dr. Brian Popp



Ally Ijima processing coral samples in the UH Biogeochemical Stable Isotope Facility.

Reef corals are threatened by local human impacts and global climate change, which are driving regime shifts towards macroalgal dominance on reefs worldwide. Invasive and nuisance macroalgae are increasing in the Main and Northwestern Hawaiian Islands, however, many questions remain on the factors leading to macroalgal dominance and how macroalgae (when in close contact) alter the physiology and nutrition of reef corals. This project focuses on fostering a Native Hawaiian place of learning at UH Manoa, by providing support for two Native Hawaiian undergraduate students to study coral reef physiology, stable isotopes, and data analysis (coding). We will recruit two UH Mānoa undergraduate students to work with our diverse team of SOEST faculty (Drs. Chris Wall, Andrea Kealoha, Brian Popp) to study reef corals and analyze samples collected in the Papahānaumokuākea Marine National Monument in 2022 at Manawai (Midway Atoll). Students will learn fundamental approaches to studying coral reefs and the physiology of reef corals and participate in an experiment to test macroalgae effects on coral physiology and nutrition (assessed through stable isotope analysis). We will provide hands-on learning experiences and mentorship, with the funding requested (\$3000) to provide student stipends (in support of student equity) and research costs.