



The University of Hong Kong
School of Biological Sciences

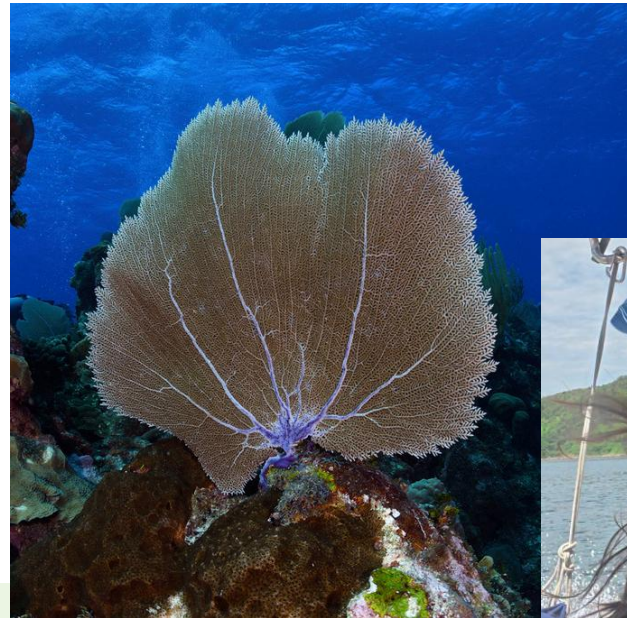
Qualifying Seminar

The octocoral reign: A Multi-Scale Isotopic Framework for Trophic Niche Partitioning, Evolution, and Invasion

Date: March 31st 2026

Time: 4:00 p.m.

Venue: 3N-01



About the speaker:

Jimena is a Ph.D. student under the supervision of Dr. David. M. Baker. Her research is focused on understanding the shifting reefs in the tropical America region with a particular focus on the eco-physiology, evolution and invasion mechanisms of octocorals in the region.

Abstract:

Coral reefs support a larger concentration of life forms and unique ecological strategies than any other ecosystem, yet half of the living coral population and 63% of reef associated biodiversity have been lost. While scleractinian corals are rapidly declining in the Caribbean, octocorals such as sea fans and sea plumes are demonstrating remarkable resilience and have become dominant in many reefs, however they remain understudied. This study applies Stable Isotope Analysis to quantify the trophic spectrum of gorgonians across the Caribbean Sea using bulk SIA and the HERS index. Results from 114 archival samples from Mexico and Panama reveal a diverse spectrum of trophic strategies: *Gorgonia ventalina* (HERS = 0.54) is autotrophic, *G. flabellum* (0.19) is heterotrophic, and *Plexaurella* spp. (0.13) are highly heterotrophic. Subsequent work will apply compound specific SIA to resolve dietary carbon sources, contrast geminate *Muricea* sp. across the Isthmus of Panama, and assess the niche ecology of invasive *Carijoa riisei* in the Tropical Eastern Pacific. Collectively, this work establishes a multi scale isotopic framework for octocoral ecology across two major basins, providing essential insights for managing the future of American coral reefs.