



The University of Hong Kong
School of Biological Sciences

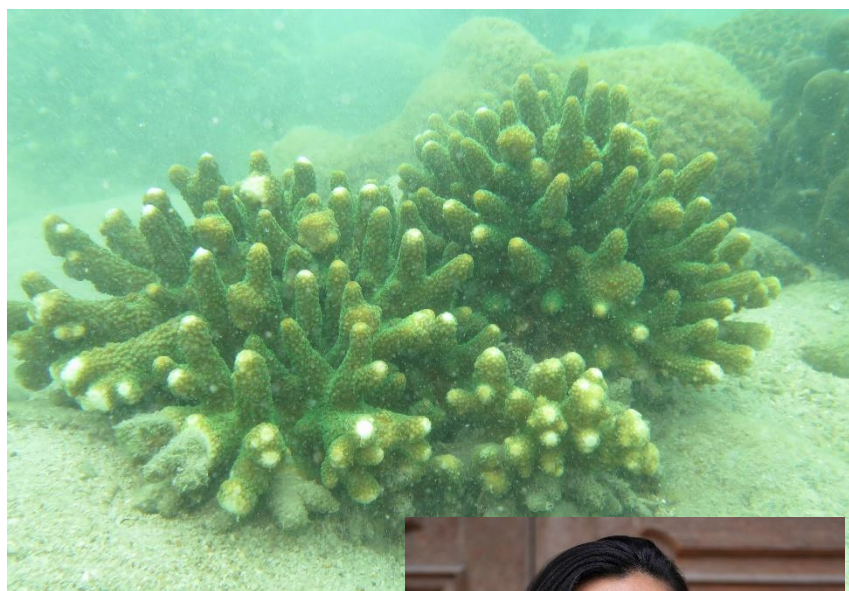
**Qualifying
Seminar**

Towards holistic restoration for a reef-building coral with functional genomics & population structure approaches

Date: 27th September 2024

Time: 3 PM

Venue: 6N-11



About the speaker:

Wendy McLeod Chan is a PhD student jointly supervised by Profs. Paolo Momigliano, Shelby McIlroy and David Baker. She currently focuses on population genetics and evolution of coral, having previously worked as a research assistant for projects on marine symbioses.



Abstract:

Hong Kong coral communities represent a uniquely marginal population, at the limits of their environmental tolerance. They have endured increasing nutrient pollution over the last 30 years, which dramatically restructured the community. Improvements in water quality and attempts at coral restoration support potential recovery. Yet knowledge gaps remain, including the genetic bases of physiological traits, and the regional distribution and degree of genetic diversity, which may inhibit successful and sustainable restoration. To address these, I am sampling colonies of a reef-building *Acropora* sp. in Hong Kong for whole genome sequencing. The fragments will also be used in a reciprocal transplant experiment to evaluate physiological performance of genetically diverse individuals within high vs. low nutrient conditions. After mapping patterns of regional genetic variation, a genotype-by-environment association (GEA) analysis will then be used to identify genetic markers associated with eutrophication-resistance, complimented by a further genome-wide association study (GWAS) based on the results of the reciprocal transplant experiment. Overall, this project will generate important genomic data for future research in coral adaptation and guide holistic, genetics-driven coral restoration.