



The University of Hong Kong
School of Biological Sciences

**Public
Seminar**

Ecological and adaptive physiological responses of seagrasses to metal pollution in highly urbanized areas

Date: 8 Nov 2023

Time: 08:45 am

Venue: KBSB 3N-01 + zoom



About the speaker:

Ho Tun NG is a MPhil student from Dr. GAITÁN-ESPITIA, Juan Diego's lab. Her research focuses on assessing the influence of heavy metal pollution on local seagrass.



Abstract:

Seagrasses are important primary producers in coastal ecosystems around the globe. However, due to rapid changes in habitat quality, these organisms are declining globally at an unprecedented rate. One of the main drivers behind such trends is metal pollution. This type of chemical contamination impacts the physiology and survival of seagrasses, leading to population decline and local extirpation. In Hong Kong, despite the significant record of metal pollution in the waters and sediments of coastal areas, little is known about the influence of this chemical threat on the ecology and resilience of local seagrasses. My MPhil projects aim to fill this knowledge gap, establishing a fundamental understanding of the effects of heavy metals on the ecological dynamics and resilience of seagrass ecosystems in Hong Kong. Findings of this work reveal spatial and temporal variation in metal pollution (including copper, chromium, manganese and zinc), that has a significant influence on the taxonomic profile of seagrass-associated microbial communities. Seagrass sites with higher ecological risk were also identified in this study, providing evidence for future conservation needs. To further understand the effects of metal pollution, my project assessed the physiological and molecular responses of the vulnerable seagrass *Halophila beccarii* to elevated concentrations of copper and lead. The results have indicated a potential hormetic response in the *H. beccarii* in Hong Kong. Such novel findings can provide insights for conservation planning in seagrass transplantation. Overall, using two different omics studies, my two chapters can establish a fundamental understanding of seagrass in Hong Kong and contribute to the effort of seagrass conservation.