



The University of Hong Kong
School of Biological Sciences

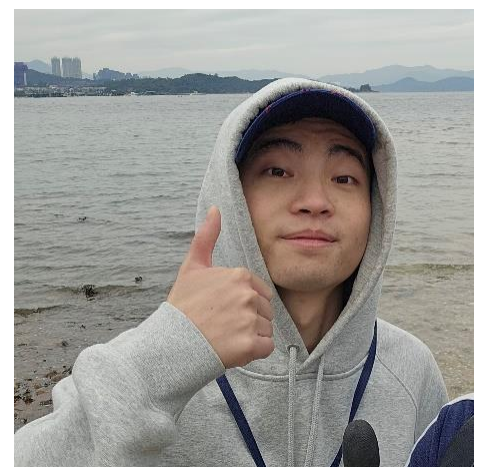
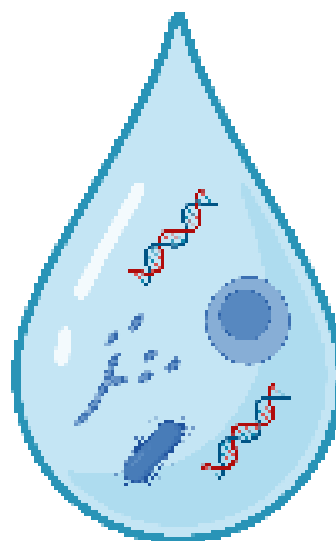
**Qualifying
Seminar**

Microbial eDNA Metabarcoding: Methodological Developments and Ecological Applications

Date: Aug 13, 2024 (Tue)

Time: 10:30 AM

Venue: KNSB 6N-11 & Zoom



About the speaker:

QIAN, Cheng (Luke) is a PhD student in the eDNA and eEcology Lab, supervised by Prof. Mathew Seymour. His studies focus on environmental DNA-based method development and microbial community profiling.

Abstract:

Biodiversity is a valuable asset of our planet, serving as the foundation for maintaining stable and sustainable ecosystems. However, human activities are leading to a dramatic loss of biodiversity. As such biodiversity assessment and biomonitoring based environmental assessment is essential for ecosystem management. Environmental DNA (eDNA) metabarcoding has revolutionized biodiversity assessment by enabling rapid and comprehensive monitoring of changes in community composition which can be directly linked to anthropogenic impacts. While eDNA methods are highly successful they still have some methodological limitations.

This study investigates passive eDNA sampling and third-generation nanopore sequencing for improving the scale and scope of eDNA metabarcoding for biodiversity assessment. The objectives involves **(1)** Determine the performance of passive sampling on capturing eDNA and assessing microbial biodiversity; **(2)** Assess the feasibility of nanopore sequencing for microbial eDNA biodiversity monitoring; **(3)** Evaluate the ecological status of Hong Kong coastal habitats over time and space; **(4)** Disentangle the seasonal ecological processes shaping phytoplankton communities in estuarine and coastal ecosystems.