



The University of Hong Kong
School of Biological Sciences

Qualifying
Seminar

Deciphering the intricacies: Host, parasite, microbiome, and zoonotic implications

Date: 24 April 2024

Time: 1630

Venue: 3N-01



About the speaker:

Ivan LAM is a 2nd year PhD candidate under the supervision of Prof. Simon SIN. His works focus on the host-parasite-microbiota relationship, using bats and their ectoparasites, bat flies, as a study system.



Abstract:

The relationship between bat hosts, ectoparasites, and microbes is multifaceted. While hosts can benefit from mutualists, some microbes are parasitic and can negatively impact host health. Moreover, the presence of parasites complicates this dynamic, causing additional influence on the host by carrying their own microbes, which may be beneficial or harmful to the host. Knowledge of this host-parasite relationship is particularly valuable due to the risk of zoonotic pathogens spillover, which can pose serious threats to human society. Our knowledge on these interactions is limited, particularly in the subtropical regions of East Asia. A recent study has identified 19 local bat fly species, with many of them likely to be new to science, highlighting the unexplored diversity of ectoparasites and the need for further investigation. Therefore, in my thesis, I will investigate the relationship between bat hosts and their parasites and microbiome, and the role of parasites in pathogen transmission. Specifically, I aim to (1) reveal host and ectoparasite association; (2) test if specialist bat flies are better adapted to survive on their hosts, resulting in less frequent predation in contrast to generalist species; (3) elucidate factors that influence parasitism and microbiome; and (4) test if closely related host species have more similar symbiont compositions than those of distantly related host species.