



Ecophysiological correlates of Horseshoe bat viromes

Date: Thurs, January 15th

Time: 10:30

Venue: 6N-11



About the speaker:

Kimberly Edwards is an infectious disease ecologist and a Project Manager at the HKU School of Public Health. She holds an MSc in One Health and is currently a PhD candidate under the supervision of Professors Louise Ashton and Alice Hughes. Her research investigates the ecological and evolutionary drivers of viral emergence, with a particular focus on reservoir host ecology and human-animal interfaces. She integrates fieldwork, genomics, and evolutionary analyses to develop predictive models and evaluate mitigation strategies for emerging infectious diseases.

Abstract:

Horseshoe bats (family *Rhinolophidae*) host a diverse array of viruses with zoonotic and epizootic potential. However, the ecological, physiological, and behavioral factors that sustain viral transmission and promote diversity within these reservoir populations remain poorly understood. This study employs an integrative approach—combining meta-analysis, metagenomics, and machine learning—to examine the interplay and relative influence of host, pathogen, and environmental variables on viral diversity and abundance. Furthermore, it will evaluate differences in viral profiles across host species and terrestrial biomes. By elucidating the key drivers of viral diversity in horseshoe bats, this work aims to inform predictive models of spillover risk and guide targeted surveillance and conservation efforts to mitigate the emergence of zoonotic diseases.

