



The University of Hong Kong
School of Biological Sciences

**Public
Seminar**

Phylogenomics and comparative transcriptomics of selected clades in the early divergent angiosperm family Annonaceae: unlocking patterns of floral evolution, pollination ecology and evolutionary diversification

Date: 12 Sep 2024 (Thu.)

Time: 2:30 p.m.

Venue: KSBS 6N11 & Zoom



About the speaker:

Weixi Li is a PhD candidate under the supervision of Dr. Richard M.K. Saunders and Dr. Juan Diego Gaitán-Espitia. Her research focuses on understanding character evolution, species diversification, biogeographical patterns and adaptive evolution in the flowering family Annonaceae.



Abstract:

Annonaceae is a species-rich flowering plant family in the order Magnoliales. Subfamily Ambavioideae is phylogenetically problematic because of inadequate sampling of taxa and DNA regions. I adopt next-generation genome skimming techniques to generate whole chloroplast genome data, which provide more informative sites for reconstructing a robust higher-level phylogeny of the Ambavioideae. The updated phylogeny serves as a solid foundation for studying morphological character evolution, biogeographical history, and species diversification. Furthermore, I explore the relationships between biotic and abiotic factors and diversification rates in Annonaceae. The findings indicate that global temperature influences the diversification of Annonaceae. Although neither biotic nor abiotic factors alone can fully explain the diversification of Annonaceae, other factors contribute synergistically. In addition, I investigate the differentiated molecular adaptation to limestone conditions between obligate and facultative species of Annonaceae using transcriptome data. Chloroplast genomic and transcriptomic comparisons help uncover molecular adaptations to limestone environments, thereby enhancing our understanding of plant adaptive tolerance. The results contribute to future studies on character evolution and evolutionary diversification in the Annonaceae.