



**THE CHINESE UNIVERSITY OF HONG KONG
FACULTY OF MEDICINE
SCHOOL OF BIOMEDICAL SCIENCES**

SBS PI Seminar Series 2022-2023

Prof. TSUI Kwok Wing Stephen

Professor

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will present a seminar entitled

**“Genomics Study Reveals Insights into the Divergent Evolution
and Comprehensive Allergen Profiles of Astigmatic Mites”**

Highly diversified astigmatic mites comprise many medically important human household pests such as house dust mites causing ~1-2% of all allergic diseases globally. However, their evolutionary origin and diverse lifestyles have not been illustrated at the genomic level, which hampers allergy prevention and our exploration of these household pests. Using six high-quality assembled and annotated genomes, this study thoroughly explored the divergence of Acariformes and the diversification of astigmatic mites. Within astigmatic mites, a wide range of gene families rapidly expanded via tandem gene duplications. Gene diversification after tandem duplications provides many genetic resources for adaptation to sensing environmental signals, digestion, and detoxification in rapidly changing household environments. Throughout the evolution of Acariformes, massive horizontal gene transfer events occurred in gene families enable detoxification and digestive functions and provide perfect drug targets for pest control. This genomics study sheds light on the divergent evolution and quick adaptation to human household environments of astigmatic mites and provides insights into the genetic adaptations and even control of human household pests. Moreover, in this talk an innovative and efficient way to unveil the comprehensive allergen profiles of astigmatic mites will be described.

15 September 2022, Thursday, 4:00 – 5:00 pm

Room G02, Lo Kwee-Seong Integrated Biomedical Sciences Building,
Area 39, The Chinese University of Hong Kong / via ZOOM platform

Registration link

<https://cuhk.zoom.us/meeting/register/tJMtcmuqTKiGtVkZBTZh4rZ1RzdQzT2lv1F>

Deadline: 12:00 noon, 14 September 2022 (Wednesday)

