



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

**SBS PI Seminar Series 2023-2024**

**Prof. Stephen DALTON**

Professor/Global STEM Scholar  
School of Biomedical Sciences, Faculty of Medicine  
The Chinese University of Hong Kong

will present a seminar entitled

***“Organoid models for understanding early human development”***

Embryonic organoids derived from human pluripotent stem cells are emerging and promising to recapitulate human embryogenesis in vitro. However, ill-topographic architecture and high degree of organoid-to-organoid variability of the underlying tissues in these in vitro models make it difficult to gain mechanistic insight. Here we present robust neural-mesodermal progenitor (NMP) derived embryo-like trunk structures, which we termed ‘neuromesoid’, including a neural tube, flanking somites, and other advanced cell types. Comparative scRNA-seq analysis revealed that neuromesoids developed into a stage of Carnegie Stage 10 of human embryo. We also tested the effects of chemical perturbations of key signaling pathways, such as FGF and WNT, on structure morphogenesis in neuromesoids. Human neuromesoids therefore possess the potential to serve as robust, scalable, and testable in vitro platforms to study early human embryo development.

**23 May 2024, Thursday, 4:00 pm– 5:00 pm**

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