



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

SBS PI Seminar Series 2022-2023

Prof. IP Pak Kan Jacque

Assistant Professor

School of Biomedical Sciences

Faculty of Medicine, The Chinese University of Hong Kong

will present a seminar entitled

**“Dissecting X-linked neurodevelopmental disorders:
from synaptic deficits to visual dysfunctions”**

Abstract: Neuronal circuits in our brain are known to be plastic and are subject to experience-driven changes that cause neurons to modify their functional connectivity and responses. Through mechanisms of synaptic plasticity, excitatory synapses are subject to continuous changes and are shaped by sensory inputs and learning and experience. Crucially, dysregulated synaptic development and plasticity have been hypothesized to be the underlying cause of altered neuronal function in neurodevelopmental disorders, including intellectual disability and autism spectrum disorder. Yet it remains unclear how impaired synaptic events and aberrant neural circuit formation lead to behavioral deficits in neurodevelopmental disorders. By employing cutting-edge *in vivo* imaging methods, coupled with proteomic and single-nuclei transcriptomic approaches, our work will characterize how visual cortex is affected in neurodevelopmental disorders such as CDKL5 deficiency disorder (CDD). This proposal will address how disruption of CDKL5 protein impacts the functioning of cortical circuits and its relationship with CDD, an autism-related disorder that causes a range of developmental problems including learning disabilities and cortical visual impairment. Since childhood brain disorders are a major source of societal debilitation that impact the quality of life and individual contributions of the affected individual and those of the care-givers, there exists an urgency to identify possible means for treatment. The outcome of our work will provide critical information for the role of synaptic deficits and aberrant neural circuit in the function of the human brain in the context of neurodevelopmental disorders, and will shed light on the discovery of novel treatment strategies for CDD and other neurodevelopmental disorders.

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

On-site & via Zoom

G02, Lo Kwee-Seong Integrated Biomedical Sciences Building, Area 39, CUHK

Registration link

<https://cuhk.zoom.us/meeting/register/tJwpfuqgqj4sG9bFZ3OWtuVAd2h6FWwhyfll>

Deadline: **12:00 noon, 7 September 2022 (Wed)**

