



## NNRIS Bench to Bedside Seminar Series

**Date:** 11 June 2021 (Friday)

**Time:** 12:00pm – 1:00pm

**Zoom Details:** <https://ihis.zoom.us/j/96337633881?pwd=aDhVa3lzcml4L1lOczFwSWFvVmE1UT09>

**Meeting ID:** 963 3763 3881

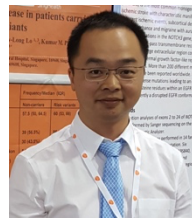
**Passcode:** 067383

*Note: Please rename your login name to include your institute to facilitate admission*

**Moderator:** Assoc Prof LIAO Ping  
National Neuroscience Institute

### INVESTIGATING $\alpha$ -SYNUCLEIN REGULATOR FOR PARKINSON'S DISEASE

**Dr XIAO Bin**  
Research Fellow  
National Neuroscience Institute



**Abstract:**

Parkinson's disease (PD) is a common neurodegenerative disease with no existing medication to stop or slow down its progression. Lewy bodies (LBs), primarily composed of fibrillar  $\alpha$ -synuclein ( $\alpha$ -syn), constitute one of the most prominent pathological features of PD. In our preliminary work, we have established an in vitro  $\alpha$ -synuclein aggregation cell model and conducted targeted siRNA screening. A few gene hits that may affect the  $\alpha$ -syn aggregation were identified. Based on our data, we hypothesize that the newly identified gene hits from the cell-based siRNA screening will modulate neuronal LB-like inclusions, having the potential to represent therapeutic targets for PD.

**Biography:**

*Dr. Xiao Bin is a trained Neurologist and currently working as a research fellow at National Neuroscience Institute. Dr. Xiao obtained his medical degree in China and PhD degree from NUS. His current research focuses on development of therapeutic strategies by elucidating mechanisms underlying Parkinson's diseases using cellular and animal models as well as clinical findings.*

### MANIFESTATION OF PD PATHOLOGY IN HUMAN MIDBRAIN ORGANIDS

**Dr Alfred SUN**  
Assistant Professor,  
Duke-NUS Medical School  
Junior Principal Investigator, NNI



**Abstract:**

Are brain organoids of any use towards understanding neurodegenerative diseases that are typically late-onset? In this talk I will report our findings that human midbrain-like organoids that harbor two major risk factors of Parkinson's disease (PD), exhibit Lewy body-like inclusions and the loss of dopamine-producing neurons. The recapitulation of two key characteristic pathophysiological signatures of PD in the organoid model suggests its utility in modeling PD.

**Biography:**

*My first 15 years of life was at Hang Zhou, China. 4 years of high school in Singapore, attended The Chinese High School and Hwa Chong JC. With a C5 grade for Biology at Prelim (but miraculously managed to score better for GCE-A level-- still don't know how it happened) and was awarded A-STAR scholarship to go overseas. Obtained B.S. from Duke University and Ph.D from Stanford University.*