National Neuroscience Institute
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National Neuroscience Research Institute Singapore

DukeNUS Medical School | Neuroscience & Behavioural Disorders

NNRIS Bench to Bedside Seminar Series

Date: **27 January 2023 (Friday)**

Time: **4:00pm – 5:00pm**

Zoom Details: Join Zoom Meeting
https://nus-sg.zoom.us/j/85205843360?pwd=cDl4UmhzWDRxdWJhL1FWT1FGc20wQT09
Meeting ID: 852 0584 3360
Passcode: 665353
Note: Please rename your login name to include your institute to facilitate admission

Moderator: **Assoc Prof Hyunsoo Shawn Je**
Neuroscience & Behavioural Disorders Programme, Duke-NUS

IDENTIFYING DEFECTS OF HUMAN NEURAL DEVELOPMENT IN DOWN SYNDROME USING SINGLE CELL TRANSCRIPTOMICS

Mr Michael Lattke
Research Associate,
Imperial College London,
Lab of Vincenzo De Paola

Abstract:
Down syndrome is a common neurodevelopmental condition, but how the underlying trisomy of chromosome 21 disrupts neural development is incompletely understood, partly due to limitations of current models. Our lab has recently developed a human in vivo graft model of Down syndrome (Real et al., Science, 2018) and discovered synaptic and neural network activity alterations. Here, I will present preliminary work using this xenograft model, published organoid datasets, and primary foetal tissue, to harness single cell transcriptomics and epigenomics to identify the molecular and cellular mechanisms underlying these alterations in human cortical neuron development in Down syndrome.

Biography:
After his PhD at Ulm University (Germany) in 2015, Michael joined the lab of Francois Guillemot at the Francis Crick Institute (London, UK) as a postdoc, before moving to Vincenzo De Paola's lab at Imperial College London in 2021 as a Research Associate. His research interest focuses on "omics" approaches and stem cell models to investigate mechanisms underlying neural development and astrocyte biology.

ROLE OF NEUROPSYCHIATRIC SYMPTOMS AS EARLY CLINICAL MANIFESTATIONS OF ALZHEIMER'S DISEASE

A/Prof Ng Kok Pin
Senior Consultant,
NNI Neurology,
Clinical Associate Professor,
DUKE-NUS Medical School

Abstract:
Neuropsychiatric symptoms (NPS) are common in the mild cognitive impairment and dementia stages of Alzheimer's disease (AD) and are associated with accelerated cognitive decline. NPS are also increasingly recognized as early non-cognitive manifestations in the preclinical stage of AD. However, the role of NPS as an early marker of pathophysiological progression in AD remains unclear. In this talk, I will present the associations of NPS with AD pathophysiology among individuals with preclinical AD. I will also present the recently validated neurobehavioral syndrome, mild behavioral impairment, as an at-risk state for cognitive decline and incident dementia.

Biography:
Prof Ng obtained his Master of Clinical Investigation in 2016, and he is currently a PhD candidate at the NUS Yong Loo Lin School of Medicine. He sub-specialize in neurocognitive disorders and his research theme focuses on clinical markers such as behavioral, metabolic and genomic factors that risk stratify patients with mild cognitive impairment using neuroimaging (MRI and PET imaging) and biomarkers

All are welcome. No registration is required.