# Research Theme

**Neuroscience and Mental Health**

# Research Project Title

Identifying Novel Genes Underlying Susceptibility to Parkinson’s disease in Asians

# Principal Investigator

Foo Jia Nee

# Project Description

Parkinson’s disease is one of the most common late-onset neurodegenerative diseases affecting all ethnic groups. The identification of genes mutated in familial Parkinson’s disease strongly suggest there is a genetic basis to neurodegeneration but the sporadic forms remain poorly understood. Moreover, most of the existing studies have been focused on European populations but clinically-relevant genetic variants have often been shown to be population-specific and few studies have been done on Asians. In collaboration with the Singapore National Neuroscience Institute and the Asian Parkinson’s Disease Genetics Consortium consisting of 15 groups across 6 East Asian countries, our lab aims to identify novel genes and variants that influence risk to Parkinson’s disease in Asians.

In this project, we will investigate both rare and common germline variants in the genome. We will perform the largest genome-wide association study of Asian Parkinson’s disease using samples from collaborators across East Asia. We will also perform high-coverage whole-exome/genome sequencing of large collections of patients and controls to identify genes that are recurrently disrupted by germline variants in cases but less frequently in controls.

Once a novel gene or pathway is identified, we have the option of functionally characterizing the finding in one or more animal or cell-based model systems to gain insights into disease mechanisms. This will be done in collaboration with colleagues from the Neuroscience and Mental Health theme at LKCMedicine. We will also work in collaboration with clinicians at National Neuroscience Institute to evaluate the effects of newly-identified genes and variants on clinical subtypes, prognosis and drug response in representative patients.

# Contact Us

If you have questions regarding this project, please email the Principal Investigator.

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