NUS National University of Singapore | Department of Biological Sciences, Faculty of Science

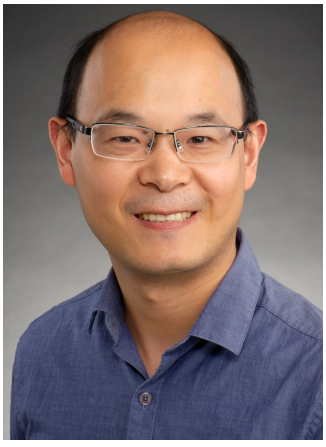
SEMINAR

Mon, 5 June 2023 | 10 am | DBS Conference Room 1

Hosted by Prof J. Sivaraman

Structural Basis of LRRK2 Activation

- a novel molecular paradigm of kinase spatial regulation



By **Ji Sun**

Assistant Faculty Member,
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Gain-of-function mutations in Leucine-Rich Repeat Kinase 2 (LRRK2) lead to Parkinson's Disease (PD); therefore, LRRK2 inhibitors hold great potential for PD treatment. In this seminar, Dr. Sun will discuss the structure-function relationship of LRRK2, focusing on the following questions. 1) What is the architecture of LRRK2, a 286-kDa multi-domain protein? 2) How is LRRK2 recruited to the membrane surface by Rab GTPases? 3) How is LRRK2 activated upon membrane recruitment? and 4) What can we learn about LRRK2 PD mutations to guide future drug development?

Dr. Sun received Ph.D. training under the mentorship of Dr. Ning Zheng, HHMI, at the University of Washington, where Dr. Sun determined the structure of the plant nitrate transporter, NRT1.1, the first Major Facilitator Transporter (MFS) structure from higher eukaryotes. During postdoc training, Dr. Sun worked under Dr. Mackinnon, the 2013 Nobel laureate in Chemistry, at Rockefeller University and combined electrophysiology and cryo-EM to study an essential potassium channel, KCNQ1, in the human heart. In addition, Dr. Sun started his own lab at St Jude in 2019 and studies cell signaling events at the membrane interface.