NANYANG TECHNOLOGICAL UNIVERSITY

School of Biological Sciences

Reg. No. 200604393R

Research Theme: Cell Biology

Research Project Title: The dynamic trafficking within the Golgi

Principal Investigator/Supervisor: Associate Professor Lei Lu

Co-supervisor/ Collaborator(s) (if any):

Project Description

a) Background:

The Golgi is a subcellular organelle that functions as a trafficking hub within a eukaryotic cell. It comprises serially stacked membrane sacs called cisternae, roughly divided into four zones — the *cis*, *medial*, *trans*-Golgi, and *trans*-Golgi network. Within the Golgi, two concurrent flows of membranes and proteins (cargos) exist — from the *cis* to *trans,* or the *trans* to *cis*. It is still unclear how the Golgi maintains its unique organization and how cargos move within the Golgi. One of the most significant challenges in studying the Golgi is that the details within the Golgi (or the sub-Golgi structures) are beyond the resolution of conventional light microscopy. We have recently developed super-resolution methods and demonstrated their capabilities in revealing sub-Golgi dynamics (Tie et al., 2016; Tie et al., 2018). These new tools give our lab a unique advantage in studying the trafficking mechanism within the Golgi (intra-Golgi).

b) Proposed work:

We will quantitatively examine the intra-Golgi trafficking of secretory and endocytic reporters using the cutting-edge super-resolution microscopic tools developed in this lab.

Supervisor contact:

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

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SBS contact and how to apply:

Associate Chair-Biological Sciences (Graduate Studies) : AC-SBS-GS@ntu.edu.sg

Please apply at the following:

http://admissions.ntu.edu.sg/graduate/R-Programs/R-WhenYouApply/Pages/R-ApplyOnline.aspx

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