NANYANG TECHNOLOGICAL UNIVERSITY

School of Biological Sciences

Seminar Announcement

Development and Application of Genomic Analysis and Genome Engineering Technology for Interrogating Tumor Immunology

Date: 14 February 2017 Tuesday

Time: 3:00pm to 4:00pm

Venue: SBS Classroom 4 (SBS-01n-24)

Host: Nanyang Asst/Prof Wu Bin



Speaker: Dr Le Cong, Ph.D
Broad Institute of MIT and Harvard

Abstract

Advances in genome sequencing and related technology have led to unprecedented pace at which we can identify genomic and epigenetic changes associated with human diseases. The ability to quickly and accurately assess these candidate variants is essential to the goal of precision medicine. For this purpose, genome editing tools adapted from CRISPR-Cas system can be employed for modifying genomic sequences at great scale. I discuss here how genome engineering technology based on the CRISPR system can be deployed as versatile discovery and therapeutics tool. I will focus on the power and precision of novel technology development and describing its potential ex vivo and in vivo applications. In addition, I will highlight the emerging trend on how single-cell genomics analysis could be integrated with new generation of molecular tools to transform our ability to understand and treat human diseases, particularly complex diseases such as cancer via tumor immunology approaches.

Shot Bio:

Dr. Le Cong obtained B.S. with highest honor from Tsinghua University, and a Ph.D. from Harvard University. He is currently a Postdoctoral Associate at the Broad Institute and MIT. He completed his doctoral work in Dr. Feng Zhang's lab at the Broad Institute, where he published a seminal study demonstrating the harnessing of CRISPR-Cas9 for genome editing, which became the most highly cited paper in the CRISPR field. He subsequently published multiple high-impact studies further advancing the CRISPR-Cas9 technology including engineering CRISPR-Cas9 for gene therapy applications. He is currently developing methods for single-cell genomics and applying systems biology approaches for studying tumor immunology in Dr. Aviv Regev's lab. Dr. Cong received multiple awards for his pioneering work in gene editing and single-cell genomics including Howard Hughes Medical Institute (HHMI) International Student Research Fellowship and the Cancer Research Institute (CRI) Irvington Postdoctoral Fellowship Award.