



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

**Department of Mathematics
and
Division of Life Science**

JOINT SEMINAR NOTICE

**Modeling clonal populations in hematopoiesis and T cell
dynamics**

By

**Prof. Tom CHOU
University of California, Los Angeles**

Abstract

We develop modeling and analysis approaches for quantifying the in vivo evolution of clonal blood cell populations. A stochastic birth-death-immigration (BDI) model is used to describe experiments that measure hematopoietic stem cell tags and T cell immunotypes. We investigate a number of important processes that affect the predictions of the BDI model, including stochasticity, subsampling, regulation, and heterogeneity in rates. Using variations of this underlying mathematical framework, we estimate the effective proliferative potential of progenitor cells, the heterogeneity of naive T cell output by the thymus, and the heterogeneity of their homeostatic proliferation rates.

Date : 03 December, 2019 (Tuesday)
Time : 3:00pm – 4:00pm
**Venue : Lecture Theater F, Academic Building
(Lifts 25-26), HKUST**

(Host faculty: Prof. Can YANG)

All Are Welcome!