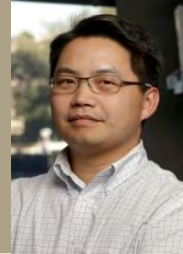


CANCER SCIENCE INSTITUTE OF SINGAPORE

SEMINAR ANNOUNCEMENT

Howard Chang

Professor of Dermatology, Stanford University
Member, Stanford Cancer Center; Stanford Institute for Stem
Cell Biology and Regenerative Medicine



Personal genome navigation

Date: Thursday, 4 September 2014

Time: 2.30pm – 3.30pm

Venue: LT 36, Level 3 Auditorium, MD 6

14 Medical Drive, Singapore 117599

Host: Dr. Melissa Fullwood

Abstract:

In biology as in real estate, location is a cardinal organizational principle that dictates the accessibility and flow of informational traffic. An essential question in nuclear organization is the nature of the address code—how objects are placed and later searched for and retrieved. Long noncoding RNAs (lncRNAs) have emerged as key components of the address code, allowing protein complexes, genes, and chromosomes to be trafficked to appropriate locations and subject to proper activation and deactivation. I will discuss lncRNA-based mechanisms that control cell fates during development, and show their dysregulation underlies some human disorders caused by chromosomal deletions and translocations. I will describe a new technology based on DNA transposition that reveals the epigenomic profiles of multiple purified cell types from a single clinical biopsy of solid organs. Together these insights are enabling the personal navigation of the gene regulatory landscape in health and disease.

Biography:

Howard Y. Chang M.D., Ph.D. is Professor of Dermatology at Stanford University School of Medicine and Early Career Scientist of the Howard Hughes Medical Institute. Chang earned a Ph.D. in Biology from MIT, M.D. from Harvard Medical School, and completed Dermatology residency and postdoctoral training at Stanford University. His research addresses how individual cells know where they are located in the human body, which is important in normal development and in cancer metastasis. He has invented new methods for epigenomic profiling and define RNA structures genome-wide. Chang discovered a new class of genes, termed long noncoding RNAs, can control gene activity throughout the genome, illuminating a new layer of biological regulation. The long term goal of his research is to decipher the regulatory information in the genome to benefit human health.

Dr. Chang's honors include the Damon Runyon Scholar Award, American Cancer Society Research Scholar Award, California Institute for Regenerative Medicine New Faculty Award, elected membership to the American Society for Clinical Investigation, the Vilcek Prize for Creative Promise, and the Judson Daland Prize of the American Philosophical Society.