Date: 3 December 2014, Wednesday

Time: 10:00AM – 11:00AM

Venue: Level 3, IMCB Seminar Room 3-46, Proteos, Biopolis

Speaker: Dr. Wee-Wei Tee, Postdoctoral fellow, HHMI, NYU School of Medicine, USA

Title: A chromatin perspective to development and disease

Transcription factors and epigenetic organization form the frontline mechanisms underlying differential gene activity in development and disease. Notably, recent genome-sequencing efforts have uncovered mutations in a large cohort of chromatin regulators causally implicated in various neurological disorders and malignancies, providing important insights into human disease etiologies. In this talk, I will describe how my initial pursuit of the signaling principles in embryonic stem cells (ESCs) led me to uncover peculiar aspects of developmental gene regulation, involving the interplay between promoter DNA topology and chromatin factors such as PRC2. These findings not only redefine the chromatin context facilitating PRC2 recruitment at such critically important developmental genes in ESCs, but also further set the rationale to investigate how DNA topology can exert a profound impact on epigenetic mechanisms, and how it may go awry in disease.

Biography:

Wee-Wei completed his undergraduate studies at University College London, and went on to do his Ph.D. with Prof Azim Surani at the University of Cambridge, UK. During his Ph.D, Wee-wei studied the role of an arginine methyltransferase, Prmt5, in stem cell and germ cell development. He uncovered an unexpected role of Prmt5 in methylation of cytosolic histones in ES cells that is in contrast to the prevailing views as to how histone methylation marks are normally imposed. This work was published in Genes and Development. A developmental biologist by training, Wee-Wei then decided to join the laboratory of Dr. Danny Reinberg, a renowned chromatin biochemist and Howard Hughes Investigator at NYU School of Medicine, for his postdoctoral training. His work is focused on deciphering the mechanistic principles of Polycomb repressive complex targeting in vivo. The results were published in Cell in February this year.

ALL ARE WELCOME *(No registration required)*