

TEACHING SEMINAR**CELL LINEAGE SPECIFICATION
IN EARLY EMBRYONIC
DEVELOPMENT**

The basic mammalian body plan is established by highly dynamic and tightly-regulated cell fate patterning processes that occur within days in the mouse and weeks in humans. Here, we outline fundamental principles in embryology that provide a developmental context for understanding gross anatomy. To be highlighted are key developmental stages of mammalian development from an one-cell embryo until the onset of organogenesis. Next, we will examine how stages of developmental potency can be modelled by stem cells and the impact on regenerative medicine and disease modelling. Finally, we explore some basic mechanistic understanding of cell lineage fate decisions underlying both normal and abnormal development.

ABOUT THE SPEAKER

Dr Koh obtained a PhD in Pharmacology from Yale University in 2004 and was among the first returning A-STAR National Science Scholars. To gain experience in drug discovery, he was seconded by A-STAR to S*BIO Ptd Ltd, where he gained a keen interest in epigenetics. In 2007, he returned to academia with an American Heart Association postdoctoral fellowship. Under the supervision of Anjana Rao at Harvard Medical School, Kian Peng co-discovered the Tet-Eleven-Translocation (TET) family of DNA dioxygenases, which have since caused much excitement as the bona fide "DNA demethylases" critical in epigenetic reprogramming. In 2011, Kian Peng moved to the Stem Cell Institute Leuven under the Odysseus program in Belgium to set up a research program in Stem Cell Epigenetics and is now Associate Professor. His current research interests are (1) to define stage- and locus-specific interactions between chromatin factors, DNA methylation and gene expression during cell fate changes and (2) to understand how the functional interactions of TET proteins with nutrient-metabolism and genetic modifiers affect the fetal epigenome and tip the balance between health and disease later in life.

Monday**14 October 2019****10.00 am to 11.00 am****Seminar Room, MD10****Level 2, Anatomy Museum****PROF KOH KIAN PENG****Professor****KU Leuven, Stamcelinstituut Leuven (SCIL)****Belgium**