“T cell development is initiated by migration of multi-potent hematopoietic progenitors into the thymus. These progenitors gradually committed to T-lineage upon exposure to thymic microenvironment and undergoes two selections processes, known as beta-selection and positive/negative selections mediated by pre-TCR and mature TCR complexes, respectively, to become professional immune soldiers armed with distinct functionality. Transcriptional regulation that controls these process is not fully understood. It is not clear how thymus-homing capacity is conferred to multi-potent progenitors. It remains elusive how T-cell receptor (TCR) signals derived from engagement by two types of MHC molecules are sensed to are integrated into developmental program that guides selected thymocytes into distinct T lineages by activating genes encoding lineage specifying transcription factors, such as ThPOK, Runx3 and Foxp3, for the helper-, cytotoxic- and regulatory T cells, respectively. In my talk, I will present our recent works that unraveled roles of Runx complexes, Bcl11b and SATB1 factors during T cell development. For instance, our work revealed important and unique function of C-terminal end Zinc-finger motif in Bcl11b protein for priming of lineage-specifying genes, an essential process to couple TCR signals with transcriptional regulation. I will also discuss how transcriptional program for T cell development has been shaped during evolution”.

Ichiro TANIUCHI, MD, PhD
Group Director, Laboratory for Transcriptional Regulation
Center for Integrative Medical Sciences (IMS)
RIKEN | Japan

Title: “Transcriptional Regulation of T Cell Development in The Thymus”

Friday, November 11, 2016
Karp Amphitheatre | Room 501, 12:00 PM
Goodman Cancer Research Centre

LOCATION: Goodman Cancer Research Centre, Room #501, 12:00 PM
HOSTED BY: Dr. Mark Lathrop, McGill University and Genome Quebec Innovation Centre
Dr Jörg Fritz, McGill University Research Centre on Complex Traits (MRCCT)