

# ASHBi SEMINAR

## Systematic profiling of the T cell receptor repertoire in intestinal inflammation

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**Date:** Wednesday, 12<sup>th</sup> February 2020

**Time:** 11:00–12:00

**Venue:** Seminar Room, 1st Floor, Faculty of Medicine Bldg. B

The intestine has its own unique environments in which host immune cells are inevitably exposed to a persistent threat of microbial attack. Host tolerance to gut bacteria is essential for symbiosis. T cell receptors (TCRs) expressed on the T cell surface play a critical role in discriminating pathogenic from symbiotic bacterial. However, a failure of this step may trigger dysregulated immune responses to those friendly bacteria and result in inflammatory bowel disease (IBD). Quantifying the TCR repertoire in IBD patients, we developed a genomic profiling approach that tracks the generation, expansion, and elimination of self-reactive T cells in the intestine. We further applied a probabilistic modelling to decipher the stochastic nature of somatic recombination that generates the immense diversity of TCRs. This talk will provide proof-of-concept for the quantitative statistical approaches that advance our understanding of TCR function and its role in the breakdown of host tolerance to gut bacteria.

**Organizer:** Dr. Taro Tsujimura

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