BiophysTO Lunchtime Seminar Series

Special Date

MONDAY, April 17th 2 pm

Location

McLennan, MP606
60 St George st

Joint special seminar with Donnelly Centre

Prof. Alexander Hoffmann

Department of Immunology, Microbiology and Molecular Genetics, UCLA

A temporal signaling code to specify innate immune responses

Immune sentinel cells must initiate the appropriate immune response upon sensing the presence of diverse pathogens or immune stimuli. To generate stimulus-specific gene expression responses, immune sentinel cells have only few signal-response transcription factors available. These function combinatorially but also dynamically. I will present our recent progress in deciphering the Temporal Code of the NFκB transcription factor. I will describe our recent works 1) using an information theoretic approach to identify the codewords, termed "signaling codons", 2) using a machine learning approach to characterize their reliability and points of confusion, and 3) dynamical systems modeling to characterize the molecular circuits that allow for their encoding. I will present progress on how the temporal code may be decoded to specify immune responses.

Host: Anton Zilman

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