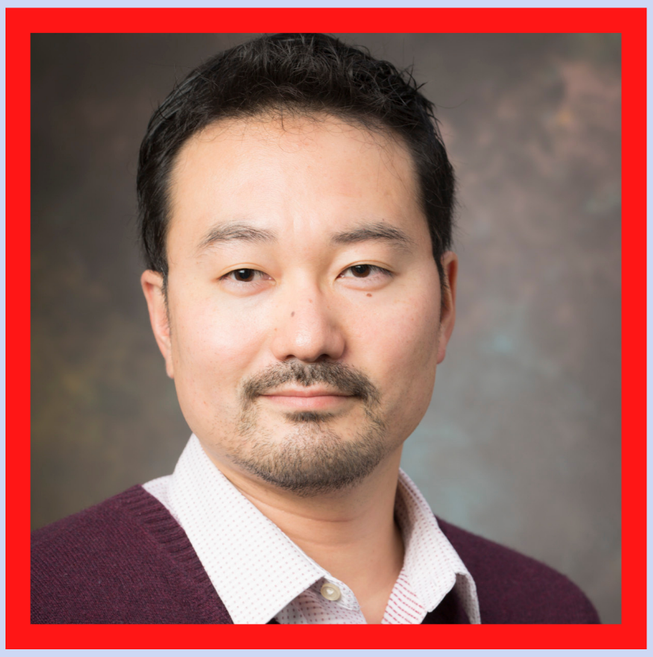
NJIT New Jersey Institute of Technology

BME

Department of Biomedical Engineering

Graduate Seminar



Dr. Yosuke Kumamoto

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November 17(Fri)
11:30am - 1:00pm
CKB 217

Effector CD4T Cell Fate Instruction by Dendritic Cells

Abstract:

Effector T helper (Th) cell differentiation is fundamental to functional adaptive immunity. Different subsets of dendritic cells (DCs) preferentially induce different types of Th cells, but the fate instruction mechanism for Th type 2 (Th2) differentiation remains enigmatic, as the critical DC-derived cue has not been clearly identified. We recently found that CD301b+DCs, a major Th2-inducing DC subset, drive Th2 differentiation through two separate steps. First, the strategic positioning of CD301b+DCs in the lymph node allow them to scan the specificity of naive CD4T cells as they home to the lymph node. Second, CD301b+DCs produce IL-2 to maximize CD25 expression in CD4 T cells, which is required specifically for the Th2 fate decision. Based on these data, we propose the step-wise priming model for Th cells by DCs and the critical role of DC-derived IL-2 in this cellular circuit.

About the Speaker

Dr. Kumamoto obtained his PhD from the University of Tokyo and completed postdoc training with Dr. Akiko Iwasaki at Yale University before joining Rutgers New Jersey Medical School as an Assistant Professor in 2017. Studies in the Kumamoto lab are focused around the role of dendritic cell subsets in immune responses, especially in the context of type 2 immunity.