JOHNS HOPKINS
BIOMEDICAL ENGINEERING

BME COVID-19 SEMINAR SERIES

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Date: Monday, November 16th, 2020
Time: 1:30 p.m.
Location: Virtual – Zoom

Faculty Host: Jamie Spangler, PhD

Encoding and Decoding Specificity in Adaptive Immunity

Abstract: Adaptive immunity is driven by the ability of lymphocytes to undergo V(D)J recombination and generate a highly diverse set of adaptive immune receptors [B cell receptors (BCRs)/secreted antibodies and T cell receptors (TCRs)] and their subsequent clonal selection and expansion upon molecular recognition of foreign antigens. These principles lead to remarkable, unique and dynamic immune receptor repertoires. This presentation will explain how my group is using genome editing, deep sequencing and machine learning to identify patterns of antigen-specificity in adaptive immune receptors. I will explain how these approaches can be used to advance the discovery and development of molecular and cellular immunotherapies

Bio: Sai Reddy is an associate professor in the Department of Biosystems Science & Engineering, ETH Zurich, Switzerland. His research group uses methods in systems and synthetic biology to study and manipulate immune responses for applications in biotechnology, vaccination, and immunotherapy. Sai Reddy holds B.S. (2003) and M.S. (2004) in Biomedical Engineering from Northwestern University (Evanston, IL, USA). He completed his Ph.D. thesis at Ecolé Polytechnique Féderale de Lausanne (EPFL, Switzerland) in Bioengineering and Biotechnology (2008). Sai Reddy did post-doctoral research at the University of Texas, Austin (2008-2011).