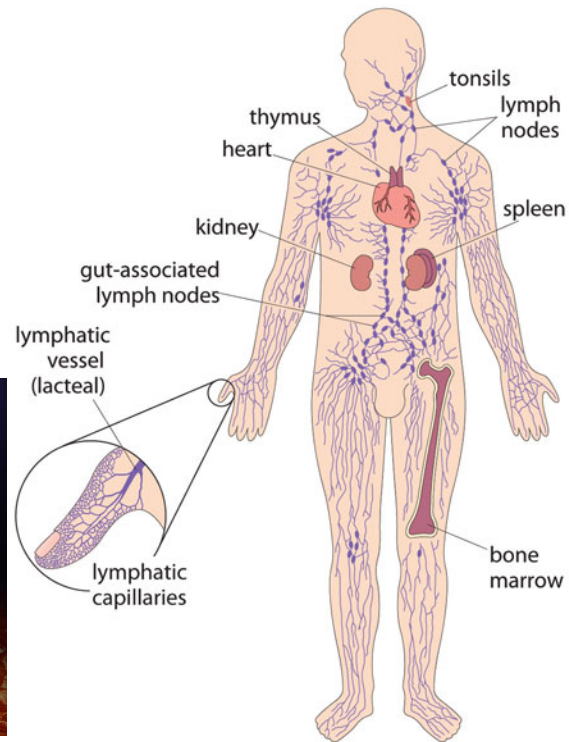
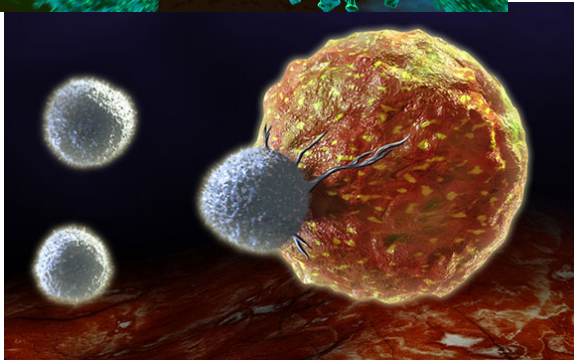
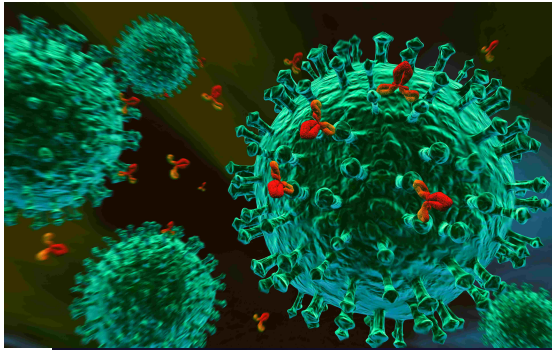


BIOE498H/599H: Systems Immunology and Immunoengineering

Credits: 3, Autumn 2017, TTh 9:30-10:50 AM in GLD 117

Instructor: Prof. Hao Yuan Kueh

Foundations for engineering the immune system



In the last few years, immunotherapy – where cells and molecules of the immune system are co-opted to fight disease – has emerged as a promising new therapeutic strategy for treating cancer and other life-threatening conditions. This course will explore our progress towards a quantitative, engineering-level understanding of immune system function, and survey current efforts to engineer immune cells and molecules for therapy. Specific topics include: systems-level identification of immune cells and regulatory molecules using high throughput approaches; specificity and selectivity in immune receptor signaling; coordination of multi-cellular responses by cytokine cell-cell communication; and generation of anti-cancer immune responses with chimeric antigen receptors. This knowledge will lay foundations for engineering the immune system to fight disease.

Pre-requisites by course: none

Pre-requisites by topic: molecular biology, introductory cell biology, calculus and linear algebra, knowledge in immunology recommended but not required.

Questions: email Prof. Kueh, kueh@uw.edu