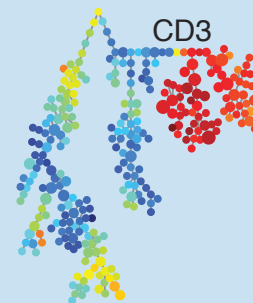
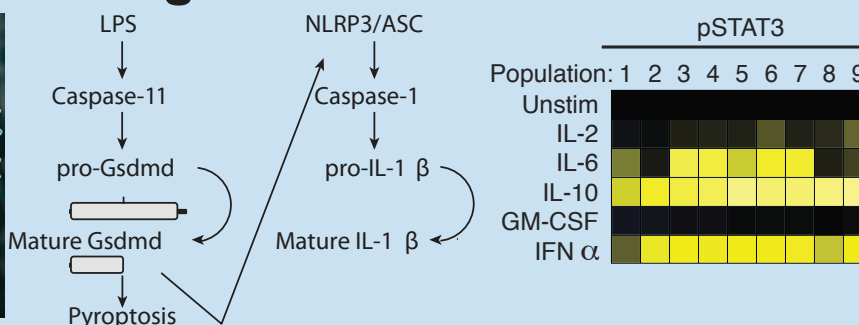
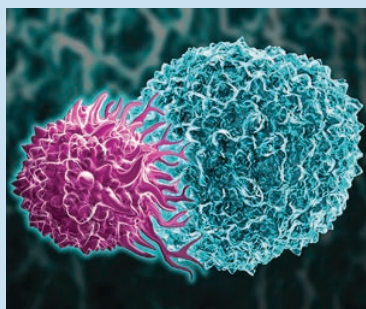


# A double-edged sword: Cellular immunity in health and disease

7.342 Fall 2018



## An Advanced Undergraduate Seminar Course



Immune cells are a diverse group of cells that function as foot soldiers to protect our bodies. These cells are equipped with a variety of powerful and adaptable mechanisms to detect and subsequently resolve a wide spectrum of insults. However, the same mechanisms can backfire under physiological stress and instead result in severe disorders, including immunodeficiency, chronic infection and inflammation, autoimmune diseases, and cancer. This course will familiarize students with the basic immunological regulatory mechanisms and examples of strategies that apply this knowledge to improve human health. More generally, students will learn how to identify relevant primary research literature, critically evaluate experimental data, and reach their own conclusions based on primary data.

### Covers topics associated with cellular immunity:

- Development of immune cells
- DNA rearrangements in adaptive immune cells
- Cytotoxic T cells, chimeric antigen receptor (CAR) T cells
- Cell death and immune processes
- Lymphocytes in disease
- Autoimmunity
- Macrophages and innate lymphoid cells (ILC)
- Emerging technologies in immunology

field trip  
to Merck

refreshments  
provided in class

Students will read and discuss classic and current papers, interpret primary data and discuss implications of papers.

**Class time is flexible**

**First class: Wed Sept 5, 11 am-1 pm, 68-150**

Prereqs: 6.03 or permission

Units: 6

Website:

<https://stellar.mit.edu/S/course/7/fa18/7.342>

Contact: [hma@wi.mit.edu](mailto:hma@wi.mit.edu)