



School of Natural Sciences

MCB Seminar

UCMERCED

Defining the Cellular Mechanisms of Layered Immunity

By: *Anna Beaudin*

Abstract:

The layered immune development hypothesis was first put forth over three decades ago as the development of the immune system in successive “layers” of functionally distinct cells, each produced from sequentially developing hematopoietic stem cells. Several decades of research have clarified the fetal-specific generation of specialized immune cells, including tissue-resident macrophages, B1-B cells, and subsets of gamma/delta T-cells; however the cellular mechanisms underlying their establishment remain mostly elusive. These developmentally-regulated immune cells play unique roles from their adult-derived counterparts in tissue homeostasis, response to infection, and tolerance to self-antigens, and are therefore implicated in a broad spectrum of biological processes, pathological conditions, and disease processes including host response, chronic inflammation, and autoimmunity. Understanding the cellular origin, specification, and regulation of developmentally-regulated immune cells has critical implications for defining the pathogenic mechanisms contributing to these conditions. In this seminar, I will discuss my recent findings using lineage tracing mouse models to define the origin of immune cells established during early life, and describe my ongoing work to characterize the cellular mechanisms that drive developmental waves of immune cell production. I will also discuss ongoing work aimed at advancing our understanding of how early developmental perturbations shape immune development and disease susceptibility throughout life.

Biography:

Anna Beaudin recently joined the faculty at UC Merced as an Assistant Professor in Molecular and Cell Biology. Anna completed her B.A. in psychology and her Ph.D. in Nutritional Science, both at Cornell University. As a postdoctoral fellow, Anna worked with Dr. Camilla Forsberg at UC Santa Cruz, where her work focused on hematopoietic stem cell development. Anna’s discovery of a novel hematopoietic stem cell population that gives rise to innate-like lymphocytes during early life have spurred her current research interests at the intersection of developmental hematopoiesis, immune development, and autoimmune disease susceptibility.

Date:

Tuesday,
November 8, 2016

Time:

12:00pm

Location:

SE1 270K

**For More
Information
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