



BiophysTO Lunchtime Seminar Series

Date

June 3rd 2021
12:00 – 1:00 pm

Dr. Alon Oyler-Yaniv

Harvard Medical School

Spatial and temporal feedbacks in the immune system balance host defense and tissue integrity

The immune system must be responsive to a wide range of adversarial threats while also minimizing host damage. To do so it employs a wide range of dynamic regulatory feedback mechanisms that are mediated by diffusible cytokines. These feedbacks are present on all levels, from a single cell to a whole organism. We will discuss 2 examples of such dynamic control: (1) On a single cell level, we have found that TNF signaling (a proinflammatory cytokine) produced by immune cells regulates the risk-tolerance of virus infected cells resulting in the arrest of viral spread; (2) On a tissue level, we showed that the spatial extent of cytokine communication is dynamically controlled during an immune response by adjusting the fraction of cytokine consuming cells. These results demonstrate the importance of dynamic regulation across different scales in the immune system.

Host: Anton Zilman

Zoom Link:

<https://us02web.zoom.us/j/89407663380?pwd=OFBMcZlhWVZKbUswQzk3VXNkLzhGdz09>



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