

# BiophysTO Lunchtime Talks

## Dr. Sergio Grinstein

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### Tracking single membrane molecules during phagocytosis

Phagocytosis, the engulfment of large particles, is an essential event in immunity. It also plays a key role in recycling dead cells. Phagocytosis is a receptor-initiated process. Unlike other receptors, however, phagocytic receptors signal in response to lateral clustering in the plane of the membrane, rather than by undergoing ligand-induced transmembrane conformational changes. How lateral clustering generates a response is still incompletely understood. Clustering activates Src-family kinases but full expression of the activity of these kinases requires exclusion of tyrosine phosphatases from the area of particle engagement. We investigated how the major phosphatase, CD45, is excluded from sites of contact with the target using single-molecule tracking. I will describe how an expanding diffusion barrier was detected, the mechanism whereby it is generated, and its significance to the initiation and completion of phagocytosis.

*Host: Dr. Anton Zilman*

(Refreshments and pizza will be provided)

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Thursday, November 5, 2015 – 12:00 pm, noon  
Davenport Room, Chemistry Building  
(and via streaming to Davis Building 4001 UTM)