



## BiophysTO Lunchtime Seminar Series

### Date

Thursday, Mar. 23rd 2023  
12:00 – 1:00 pm

### LOCATION:

McLennan Physical Laboratories  
255 Huron Street  
Rm. 606

Host: James Otis

### Spencer Freeman, Ph.D

Department of Biochemistry, University of Toronto  
SickKids Research Institute

## Fluid surveillance and mechanotransduction in macrophages

Innate immune cells, like macrophages, are integral to most body tissues in which they perform vital everyday tasks. These range from the removal/turnover of damaged or dead tissue components by phagocytosis to the surveillance of their microenvironment for pathogenic threats. Such functions necessitate an extraordinary capacity for tissue resident macrophages to employ mechanisms that support rapid membrane traffic. A major underlying feature is their ability to distill incoming fluid. In the first part of my talk, I will describe fluid handling by macrophages that ultimately maintains tissue homeostasis. Second, I will discuss how macrophages can sense and respond to inefficiencies in solute/fluid handling that gives rise to sterile stress on their endolysosomal system. Broadly, this involves mechanosensitive complexes that elicit a specific inflammatory response. Both parts emphasize biophysical aspects to immune surveillance and their dysregulation in disease.

Meeting ID: 864 3964 0790

Zoom Link: <https://utoronto.zoom.us/j/86439640790>



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