Maud Menten Institute / Mathematical and Statistical Biology Seminar

Monday, March 31, 2025
2:00pm CT (12pm PST) Over Zoom

Join Zoom meeting

Meeting ID: 699 6049 3994

Passcode: 900153

-or-

In Winnipeg: Attend the **UofM watch party** - 225 St. Paul's College
In Victoria: Attend the **UVic watch party** - Engineering/Comp Sci-130

Scott McKinley

School of Science & Engineering

Tulane University

Robust inference and model selection for particle tracking in live cells

There is now an expansive collection of mathematical work on building models for the transport of intracellular cargo by molecular motors. Commonly studied cargo undergo “saltatory” motion (bidirectional ballistic motion, intermixed with periods of stationarity) along often unobserved microtubules. Traditionally microparticle transport is quantified in terms of mean-squared displacement, but this ubiquitous statistic averages over periods of motion and pauses, eliminating important biophysical information. In this talk, I will discuss our group’s approach to segmentation analysis: an in-house changepoint detection algorithm coupled with a focus on summary statistics that are robust with respect to the inevitable mistakes that changepoint detections algorithms make.