



# *Mathematical Biology Seminar*



**Monday, March 8<sup>th</sup>, 2010**  
**3 pm – 657 CAB**

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**U Alberta**

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## *Detecting Heterogeneity in Biomolecular Diffusion*

Single Particle Tracking (SPT) is a method used to study the diffusion of various molecules within the cell. SPT involves tagging proteins with optical labels and observing their individual two-dimensional trajectories with a microscope, which provide important information about protein movement and mechanism. One of the challenges in SPT analysis is the multitude of complex environments that contribute to microheterogeneity within movement paths.

In this talk, I will explore the limitations of current methods used to analyze molecular movement, and adapt analytical methods used in animal movement analysis, such as correlated random walks and first-passage time variance, to LFA-1 integral membrane proteins. I will discuss the consequences of these methods in understanding macroheterogeneity and microheterogeneity in protein movement behaviour.

*Join us for refreshments in CAB 549 immediately following the Seminar*

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**MATHEMATICAL & STATISTICAL SCIENCES**  
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