BiophysTO Lunchtime Seminar Series

Date

Thursday, Nov 12 2020
12:00 – 1:00 pm

Dr. Cecile Fradin

Department of Physics, McMaster University

The early fly embryo as a test tube for microscopists

The first hour in the life of an embryo is a fascinating period, during which several crucial events take place that contribute to its transformation into an independent multicellular organism. Polarity is established along the embryo principal axes and differential expression of the embryo's own genes kicks off. Because the fly embryo is large and transparent, and because it can be easily genetically modified, it provides the opportunity to perform quantitative fluorescence measurements. I will present several examples of such measurements, all revolving around the role of morphogens - transcription factors forming concentration gradients in embryos and tissues and playing an essential part in cell differentiation. I will show how measuring protein concentration, protein mobility, protein nucleo-cytoplasmic transport and transcription rates, can help us confront physical models of gradient formation, gene expression or gene repression to the cellular reality, and explain the speed and precision with which these processes are usually carried out.

Host: Anton Zilman

Zoom Link:

https://us02web.zoom.us/j/89407663380?pwd=OFBMczlhWVZKbUswQzk3VXNkLzhGdz09

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