



# BiophysTO Lunchtime Seminar Series

## Date

Thursday, Sept 28<sup>th</sup> noon

## Location

McLennan, MP606  
60 St George st

## Prof. Andrew Eckford

Electrical Engineering and  
Computer Science, York University

## The channel capacity of Channelrhodopsin: What does information theory have to say about signal transduction?

Cells communicate with each other via intercellular signal transduction. In this talk, we will review our recent research on the Shannon capacity of this form of communication. Using Channelrhodopsin-2 (ChR2) as a motivating example, we show that surprisingly high information rates can be obtained. We also show that the results can be generalized to a wide variety of other signal transduction receptors and methods of channel gating (ligand, light, voltage, etc.). We discuss the implications for the analysis of biophysical systems, and give some future directions of this research.

Host: Anton Zilman



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