



# BiophysTO Lunchtime Seminar Series

## Date

Thursday, Dec 2, 2021  
12:00 – 1:00 pm

## Location

Virtual via zoom

## Dr. John Parkinson

*Program in Molecular Medicine  
Hospital for Sick Children*

## **Microbial Lifestyle Strategies Revealed through Metabolic Modeling**

Parasites cause misery on a global scale and disproportionately impact children. Despite their enormous global impact, viable vaccines have yet to be developed and few treatments are available. Further, resistance to front line drugs is emerging. New drugs are urgently needed. During their life cycle, parasites must overcome multiple challenges involving interactions with their host. These include invading and establishing a niche within their host, evading host defenses and exploiting host nutrients to support their growth. A major goal of our lab is to identify the molecular mechanisms by which parasites establish infections and cause disease. Focusing on their ability to exploit host nutrients to support their growth and propagate, we have applied integrative modeling strategies to study a variety of pathogens including single celled protists and multicellular worms. Key to these studies is the reconstruction of metabolic networks that detail the hundreds of reactions that drive core metabolism. These networks are subsequently analysed through constraints-based modeling to reveal pathway dependencies that support their unique lifestyles and identify potential targets that can be targeted for therapeutic intervention.

## Zoom Link

<https://utoronto.zoom.us/j/85948766277>

**Host: Dr. Walid A. Houry**



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