

Siavash Vahidi, Ph.D.

Assistant Professor
Department of Molecular and Cellular Biology
University of Guelph

Hosted by: Natalie Zeytuni, Ph.D.

**Wednesday, Nov. 9, 2022****11:30 am -12:30 pm****Room 1/12 - Strathcona Anatomy and Dentistry Building****“Self-compartmentalizing proteases as targets to fight antimicrobial resistance and cancer”**

ClpXP is a conserved protein degradation system that plays a central role in maintaining proteostasis. Rational improvement of small molecules that target ClpXP for antibiotic and anticancer applications requires a detailed description of its structure: dynamics: function relationship. This lecture will focus on the structural biology of ClpXP as studied by methyl-transverse relaxation-optimized spectroscopy (TROSY) NMR, electron cryomicroscopy, and mass spectrometry. I will show that this powerful combination of tools can be used to obtain a detailed mechanistic understanding of allosteric inhibition and activation of ClpXP in *M. tuberculosis* and in human mitochondria.