



## VIRTUAL BIOLOGY COLLOQUIUM

Friday, 24 June 2022 | 10 am | Online Zoom Session

Hosted by Dr Tan Yong Zi

# CryoEM studies of conformational plasticity in bacterial proteases

By **Zev Ripstein**

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### *About the Speaker*

Dr. Zev Ripstein joined the University of Manitoba as an assistant professor in September 2021 and was recruited as an expert in cryogenic electron microscopy (cryoEM) of biological molecular machinery. Dr. Ripstein's academic career started at the University of Manitoba, where he studied as an undergraduate, pursuing a combined degree in Biochemistry and Physics. He then went on to a PhD program at the University of Toronto, where he specialized in learning cryogenic electron microscopy for the study of proteins at a molecular level. He went on to do a post-doctoral fellowship with Dr. Lewis Kay, furthering his structural studies and learning solution NMR for biological macromolecules.

ClpPs are a conserved family of serine proteases that collaborate with ATP-dependent translocases to degrade protein substrates. Drugs targeting these enzymes have attracted interest for the treatment of cancer and bacterial infections due to their critical role in mitochondrial and bacterial proteostasis, respectively. As such, there is significant interest in understanding structure–function relationships for this protein family. In this talk I will share how we used structural information from cryoEM, coupled with other biochemical and biophysical tools to gain insight into how ClpPs exploit their rugged energy landscapes to enable key conformational changes that regulate their function.

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