



***Maud Menten Institute /
Mathematical and Statistical Biology Seminar***

Monday, October 5, 2026

2:00pm CT

University of Manitoba – 225 St. Paul's College

-or-

[Join Zoom meeting](#)

Meeting ID: 699 6049 3994

Passcode: 900153

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University of British Columbia

Exploring evolutionary rescue in host-pathogen systems

When novel environments cause population decline, evolution can reverse this decline ("evolutionary rescue"; ER). Examples of ER include hosts adapting to novel pathogens that could otherwise lead to extinction and vice versa, (and perhaps more familiarly) with pathogens adapting rapidly to novel conditions like new hosts or intensive treatments. In this talk, I will explore both these cases using mathematical models and simulations. First, I will compare how different disease characteristics affect the likelihood of ER of the host population. I then extend this model to compare how management interventions can boost the likelihood of rescue. Second, I will explore how host stress and subsequent effects to immunity could affect evolutionary emergence, a special case of ER where a pathogen evolves to infect a new host species. I apply this model to the case of avian influenza infecting and evolving to various arctic marine mammals and seabirds.

In Victoria: Attend the UVic watch party (12pm PT) Clearihue A-313

In Edmonton: Attend the UofA watch party (1pm MT) UComm 2-180