

Course Title: Bacterial Pathogens

Course Code: MMG 1304H(0.25FCE)

Course Location: MaRS room 1623

Course Time and Date: Wednesdays 10:00-12:00 (Oct 15-Dec 4) 2025, see schedule below

Course Instructor(s): John Brumell, Jun Liu

Instructor Contact Information (email): john.brumell@sickkids.ca; jun.liu@utoronto.ca

Learning Objectives

This course will focus on recent advances in the study of bacterial pathogens and the mechanisms by which they cause disease. Specifically, we will examine the virulence factors used by pathogens to infect their host, to subvert host innate and adaptive immune defenses and transmit to new cells and new hosts. The course will consist of presentations and discussion of publications (selected by students). The course grade will be based on presentations, participation in discussions, a written NSERC-style grant proposal.

Learning Outcomes:

Students will learn new knowledge/concepts in the field of host-pathogen interactions and become familiar with state-of-the-art technology. Critical thinking and scientific writing skills will also be developed.

Marking Scheme:

Presentation	30%
Research proposal	50%
Class participation	20%

Each student will give a seminar presentation on a selected publication, including the background introduction of the research field, the objective of the study, the methodology and experimental design, the major findings and discussion. The presentation will be evaluated by the course instructors and other students.

Each student will write an NSERC-style research proposal based on the selected publication. The proposal will be evaluated by the course instructors.

If you anticipate missing a class you must let the instructor know in advance, given the weight on participation and the fact that there are only six classes. Providing that you had a legitimate reason for missing the class, you will be provided with an assignment based on the reading for that week that you can use to make up for the lost class.

Course Dates, Times and Locations:

- Intro to class meeting: Wednesday October 15, 10:00-12:00, MaRS Room 1623
- Wednesday October 22, 10:00-12:00, MaRS room 1623
- Wednesday October 29, 10:00-12:00, MaRS room 1623
- Wednesday November 5, 10:00-12:00, MaRS room 1623
- Wednesday November 12, 10:00-12:00, MaRS room 1623
- Wednesday November 19, 10:00-12:00, MaRS room 1623

- Wednesday November 26, 10:00-12:00, MaRS room 1623
- Thursday December 4, 10:00-12:00, MaRS room 1623

Enrollment: maximum 12 students

Prerequisite: Students must be in Year 2 or higher.