

M.Sc. and Ph.D. Positions -- Molecular Parasitology/Biochemistry

We have positions for either M.Sc. or Ph.D. candidates who are interested in the study of molecular biology, biochemistry and molecular parasitology.

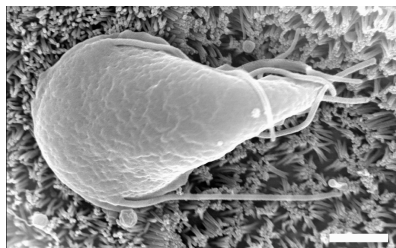
The research in our laboratory studies the biology of the waterborne parasite, *Giardia intestinalis*, by using molecular and biochemical approaches. This protist is found in freshwater lakes and streams, and it infects humans, domestic animals, and wildlife. Although giardiasis occurs worldwide, this disease is especially problematic in less-developed countries where diarrhea kills about 2.2 million people each year, with most cases involving children less than 5 years of age. Drugs currently available to treat *Giardia* are highly toxic especially to developing fetuses in pregnant women. The major problem in finding an effective and non-toxic drug for treatment is that *Giardia* and humans are both eukaryotes and thus, share many biological pathways. Consequently, any drug that would affect *Giardia*'s health would also affect the health of humans. One approach to developing a drug that would only affect *Giardia* would be to look for biological targets that are unique to this parasite. At present, we are focusing on regulators of the *Giardia* cell cycle, heme-binding proteins, and the identification and characterization of *Giardia* transcription factors. More information about our lab, projects and current students can be found on our website <<http://www.jyee.ca>>.

Techniques utilized in our research include: cell culturing in a biosafety cabinet, gene cloning, gel shift assays, qPCR, immunoblotting (Western blots), immunofluorescent microscopy, flow cytometry, recombinant protein purification, and UV-vis spectroscopy.

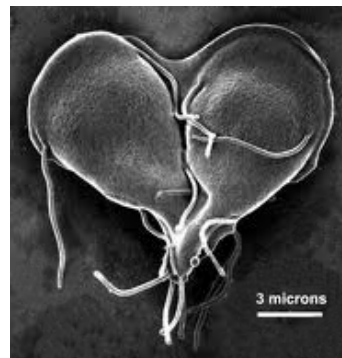
The ideal student would have completed and obtained high academic standing in the following courses: Molecular Biology, Biochemistry, Microbiology (or Parasitology) and Genetics. It would be helpful if the student has some experience working in a research laboratory outside of their courses such as the completion of an undergraduate research thesis project. The student should have good analytical, numeracy and problem-solving skills. Most importantly, the student must be enthusiastic and willing to learn.

Full financial support is offered for qualified applicants.

Interested applicants should submit a cover letter that includes a brief summary of your research experience/interests/goals, CV, unofficial transcripts, and names of 2 academic references to Dr. Janet Yee (jyee@trentu.ca).



SEM micrograph of a *Giardia* trophozoite attached to the microvilli of the intestinal tract of an infected host.



***Giardia* undergoing binary fission.**