MSc opportunity: 'Cyanobacterial antiviral discovery and characterisation'

The Environmental Virology and Ecology Research Group (i.e., ENVERG; https://uwaterloo.ca/environmental-virology-ecology-research-group/) led by Dr. Nissimov is recruiting a MSc student to investigate the potential for bioactive compounds from toxic cyanobacteria to act as antivirals.

Project Scope: The COVID-19 pandemic revealed an urgent need to develop therapeutics for emerging diseases. To that end, cyanobacteria have been shown previously to exhibit antiviral properties. However, the extent to which antiviral compounds from cyanobacteria can inhibit viruses that range in their genomic structure and composition (ssDNA, ssRNA and dsDNA), and a detailed characterization of the responsible chemistry, is lacking. Levering of access to hundreds of strains through the Canadian Phycological Culture Centre located at the University of Waterloo, this study will provide an interdisciplinary approach to characterise the chemistry that underpins these understudied microorganisms and accelerate our understanding of their antiviral potential.

Academic Environment: The student will join Dr. Nissimov's research group (ENVERG) in the Department of Biology (https://uwaterloo.ca/biology/graduate-studies) at the University of Waterloo and will conduct research in the laboratory using microbiological techniques and state of the art culturing facilities.

Funding: The current stipend for graduate students at the Department of Biology is $25,104/year. Additional details on funding breakdown and program requirements can be found in the Biology graduate handbook (https://uwaterloo.ca/biology/graduate-studies/biology-graduate-handbook). Eligible students are also encouraged to apply for external funding (NSERC, OGS, QEII) as this will be viewed favorably during the application process.

Essential Qualifications:

1. Successfully complete a thesis-based BSc in Biology, Biotechnology, Aquatic Sciences, or a related field, prior to the MSc proposed start date.
2. Have meaningful laboratory experience in microbiology and/or molecular biology, and an interest in limnology, algal biology/ecology, drug discovery, and/or environmental virology (e.g., taken classes and/or labs on these topics, or completed a relevant BSc thesis, or work experience in these areas). Prior experience with cultivating algae, cyanobacteria and their viruses will be looked upon favourably.
3. Have strong verbal and written communication skills.
4. Be able to work independently and collaboratively.
5. Be able to embrace challenges and not afraid to ask questions.
6. Be a self driven and motivated individual.

Starting Date: January 2023 (flexible)

Instructions: E-mail Dr. Nissimov (jnissimov@uwaterloo.ca) using the subject line "MSc Cyanobacterial Antivirals 2023" and include: **1)** Cover letter that outlines your research interests and how they align with the project, and how your experiences meet the stated essential qualifications; **2)** Curriculum vitae; **3)** Contract information of three references (must include name, affiliation and email address); and **4)** Unofficial transcripts. Review of applications will begin September 1st, 2022 and the posting will remain open until the position is filled. All qualified applicants are encouraged to apply; however, preference will be given to Canadian citizens and permanent residents.

The ENVERG strives to be an equitable, diverse, inclusive, collaborative, and stimulating research environment that supports and encourages each individual to cultivate their potential and attain their professional goals. We welcome applications from women, Indigenous, Black, and other under-represented individuals.