

Postdoctoral Researcher – Microbiology

(Version française plus bas)

Postdoctoral Position in Microbiology and Drug Discovery

As the world went through COVID-19, we saw how unprepared we are to face new pandemics, in part because it takes years to develop novel drugs. In fact, no new classes of antibiotics have been introduced on the market for decades, leaving us in a highly vulnerable position against the current rise of antimicrobial resistance (AMR) in bacterial pathogens. New approaches leveraging high-content data and **artificial intelligence (AI)** promise to greatly accelerate discovery and development of novel antibacterial drugs and better equip us in the fight against AMR.

We seek a highly motivated postdoctoral researcher to join the Pandemic-Stop-AI antimicrobial discovery project led by Yves Brun's lab at the University of Montréal (UdeM). Working with a multidisciplinary team of scientists, you will design and implement high-content screens to explore bacterial responses to genetic and drug interventions, perform artificial intelligence-driven analysis and drug prediction, and determine the mode of action of new antimicrobial compounds. Preference will be given to candidates with experience in microbiology, large-scale screening, and antibiotic research. You should possess strong communication skills, as you will coordinate data analysis and interpretation with collaborating researchers in artificial intelligence.

This project offers experience with lab automation, high-content data collection, and AI-driven analysis. This is your opportunity to help define how we collect and work with "Big Data" in biology, while contributing directly to our capacity to fight back against AMR now and into the future.

Responsibilities

As a postdoc, you will:

- Develop, conduct, and analyze high-content screens of chemical and genetic libraries
- Collaborate with interdisciplinary teams to generate and validate AI predictions
- Characterize the mechanism of action of identified antibacterial compounds
- Contribute to high-impact publications and present findings at leading conferences in microbiology and drug discovery

Qualifications

We are seeking a highly motivated individual with:

- A PhD in the biological sciences
- Expertise in microbiology and molecular genetics

- Excellent written communication and oral presentation skills

Preferred but not required:

- Experience in antibiotic discovery and characterization
- Expertise in fluorescence microscopy, transcriptomics, and metabolomics
- Some programming background

Strong candidates who may not meet all requirements are still encouraged to apply; please explain how your experience is well suited to the position.

What We Offer

- A stimulating and innovative research environment at UdeM
- Close collaboration with researchers in biology, chemistry, and computational science at the **Institute for Research in Immunology and Cancer (IRIC)**, **Mila – Quebec AI Institute**, and **Université Laval**
- Opportunities to contribute to impactful research at the interface of drug discovery, molecular biology, and AI
- Mentorship and professional development tailored to career growth in academia or industry
- \$38,000-\$62,000 per year

How to Apply

Send the following documents to ML.Antibiotics@gmail.com:

- A cover letter describing your research experience, interests, career goals and 1-2 relevant papers
- Your CV, including a list of publications
- Contact information for three references

Application deadline: Applications will be reviewed on a rolling basis until the position is filled.

Starting date: Between May and September 2025.