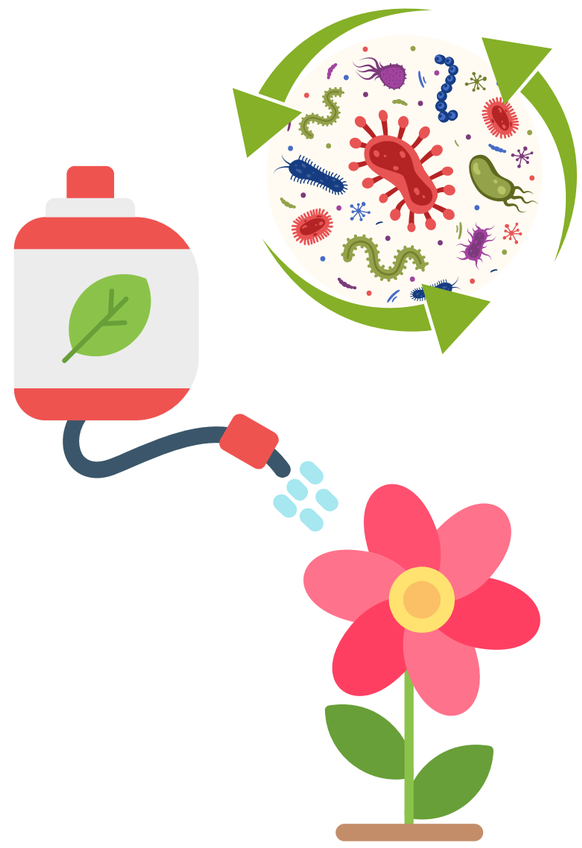
MICROBIOLOGY - PHYTOPATHOLOGY - BIOCONTROL

To reduce food waste and greenhouse gas emissions, Montreal researchers and entrepreneurs are turning to circular economy to boost the local agri-food sector. Inspired by natural ecosystems, they are using agri-food by-products to grow mushrooms, rear edible insects and produce on-site compost.

The microorganisms present in these agroecosystems directly influence their efficiency, the production of GHGs, and the way in which the fertilizing materials generated improve soil and crop health. By setting up a living laboratory, we will use "omics" technologies to characterize the main microbial consortia present and monitor their interactions throughout the food upcycling chain.

Joan Laur's team (laur.bio) is looking for a **Master's student** to lead a research project aimed at determining the suppressive potential associated with the microbiota of by-products (fertilizers) generated by urban agricultural bioreactors.



The project will be based on the isolation of beneficial microorganisms in a context of global warming (drought, heat), direct use of aqueous foliar amendments and isolation of biocontrol agents.

The selected candidate will join a large interdisciplinary project and a dynamic team. He or she will have access to a group of committed researchers, over twenty partners working in the field, training and networking opportunities, and an idyllic working environment at the Montréal Botanical Garden.

CONDITIONS

- Admission to Université de Montréal's Department of Biological Sciences under the supervision of Joan Laur
- Funding for 2 years for M.Sc. students ($18.5 k/year) and 4 years for PhD students ($23 k/year),
- Project start date: January 2024
- All applications will be considered. Previous experience in microbiology, biotechnology, molecular biology and/or biochemistry is an asset.

To apply, send your curriculum vitae, transcript, cover letter and reference details to:

Joan Laur
Botanist, Associate professor
joan.laur@umontreal.ca

Vanessa Grenier
Project manager
vanessa.grenier@umontreal.ca

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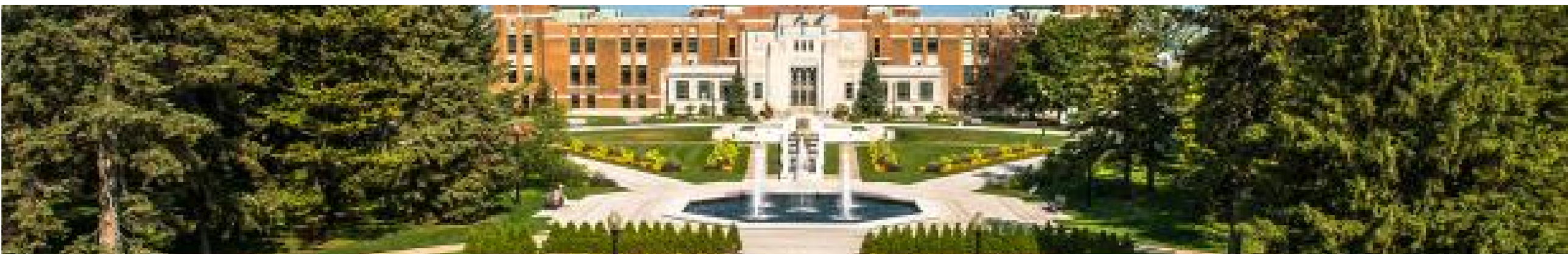

APPLIED MOLECULAR BIOLOGY

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Joan Laur's team (laur.bio) is looking for a **PhD student** to lead a research project focused on **developing a molecular tool for the detection of pathogens and genes linked to GHG production**.

The tool developed will enable the producer to monitor various bioreactors directly at the farm. The aim is to monitor the emergence of pathogens and genetic markers involved in the release of GHGs in agri-food by-products and during bioprocessing.

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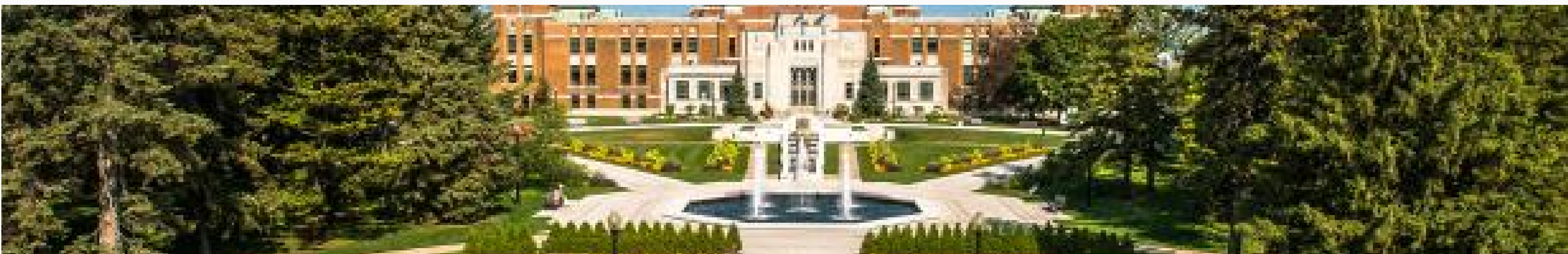

APPLIED ENVIRONMENTAL MICROBIOLOGY

To reduce food waste and greenhouse gas emissions, Montreal researchers and entrepreneurs are turning to circular economy to boost the local agri-food sector. Inspired by natural ecosystems, they are using agri-food by-products to grow mushrooms, rear edible insects and produce on-site compost.

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Joan Laur's team (laur.bio) is looking for a **Master's or PhD student** to lead a research project aimed at **improving edible mushroom production yields**.

Optimization principles will be based on characterizing and modulating the microbiota active during edible mushroom cultivation to increase substrate colonization and minimize pathogen occurrence and GHG emissions.

The selected candidate will join a large interdisciplinary project and a dynamic team. He or she will have access to a group of committed researchers, over twenty partners working in the field, training and networking opportunities, and an idyllic working environment at the Montréal Botanical Garden.

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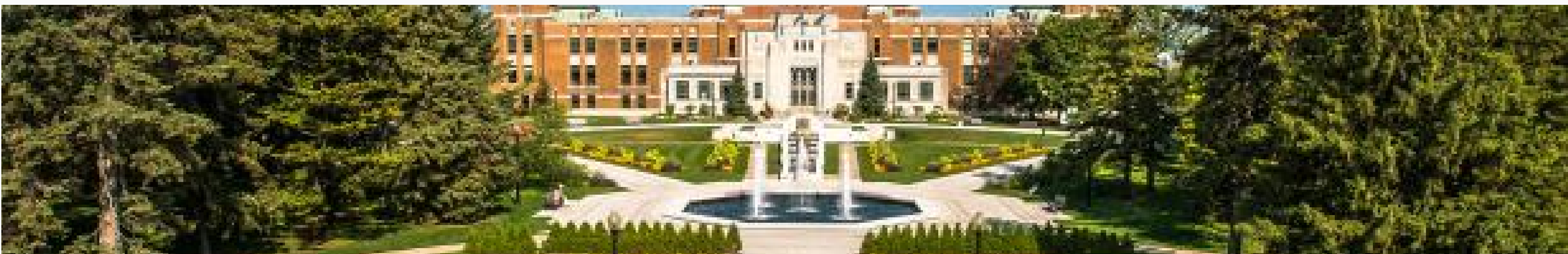

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Joan Laur's team (laur.bio) is looking for a **Master's or PhD student** to lead a research project aimed at **optimizing the transformation of organic matter during on-site composting.**

The optimization principles will be based on the characterization and modulation of the active microbiota during composting, to increase the yield and bioconversion of organic residues while reducing the production of greenhouse gases.

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