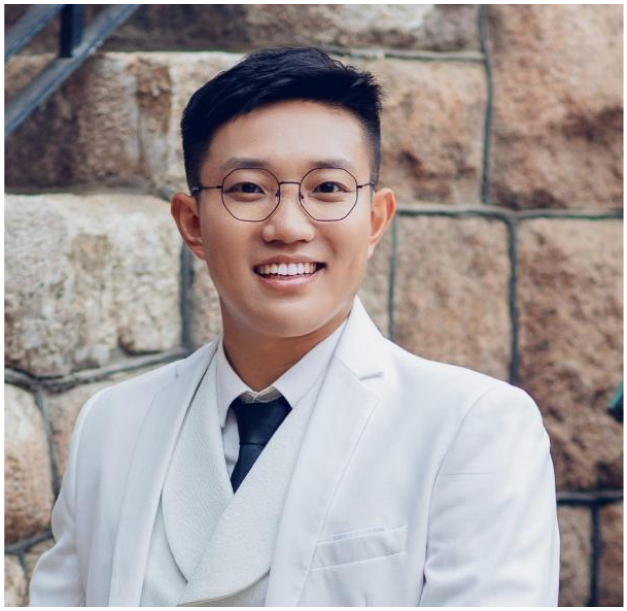
CONFÉRENCE



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Outpacing the host: climate-driven shifts in plant-associated microbes and insects

JEUDI, 3 SEPTEMBRE 2026 à 12h30

Pavillon Charles-Eugène-Marchand, salle Hydro-Québec (1210)

Abstract:

Plants interact with diverse organisms including pathogens, beneficial microbes and insect pests. Many of these organisms have short generation times and can respond rapidly to environmental change. As climate changes, their distributions and interactions may shift faster than long-lived plants, with consequences for plant fitness, species distributions and ecosystem function. In this talk, I will explore how these rapidly shifting biotic interactions can reshape plant responses to climate change. I will first present work on forest insects and pathogens across North America, showing that their responses to climate change are nonlinear and strongly dependent on historical climate context. These shifts in pest pressure can increase forest health risks and constrain the poleward range shifts of host trees. I will then broaden the focus to plant-associated microbiota, using phyllosphere bacteria as a model system. I show how microbial diversity, community composition and host specificity vary across broad geographic gradients. Finally, I will discuss emerging approaches for integrating large-scale microbial data with predictive models of host–microbe interactions under environmental change. Together, this work highlights the shifting biogeography of plant-associated microbes and insects as an important, but often overlooked, component of plant and ecosystem responses to climate change.

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