



ses

school of environmental sciences

The Research Seminar Presentation by

Jessica Guezen

will be held on

Tuesday March 10th, 2020

At 14:45 pm

Alexander Hall 265

Title: Examining the functional response of insect pests and their host trees to climate change in forest ecosystems

Climate change is expected to disrupt many of the natural disturbance regimes that regulate ecosystem functions. Insects are currently a leading cause of damage to forest ecosystems globally; however, forest insect responses to climate change have proven difficult to predict, with inconsistent responses across species in similar functional roles. This research proposes to uncover how patterns of insect forest damage are linked to climate change by examining the functional traits of forest insects and their host trees. Relationships between traits that influence insect and tree functioning in forest ecosystems and that respond to changes in climate variables will be identified by combining information from previous studies on insect forest damage and climate change in forest ecosystems, and trait information from global databases and museum specimens. Using structural equation modelling, I hope to uncover whether additive, synergistic, or antagonistic relationships exist between traits and climate variables, and how they influence the amount of forest damage that is caused by insects. An index for forest vulnerability to insect damage under climate change will then be developed based on trait relationships and climate variables from models with the strongest support. The index will be tested on forested areas across biomes experiencing recent climate change. If the index can successfully predict vulnerability under recent climate changes, climate change projections will be used to predict a forest's future vulnerability to insect damage. This research would allow for informed decisions to be made regarding where and when actions should be taken to protect both the economically significant resources and large sources of biodiversity that are provided by forest ecosystems.

Everyone is welcome to attend

(This is a Research Proposal presentation by students in ENVS*6900)