

**Subject:** PhD position at Univ. of Alberta - tree resistance to insects and disease

The research programs of Nadir Erbilgin and James Cahill at the University of Alberta are seeking a motivated and collaborative PhD student to work on a project investigating the roles of soil fungal communities in modulating boreal forest resistance and resilience to biotic and abiotic disturbances.

This project seeks to expand our recent findings demonstrating the effects of mountain pine beetle outbreaks on below- and above-ground processes, including decline of mycorrhizal fungi and pine resistance following forest mortality in western Canada (New Phytol (2015) 208: 904-914; Plant & Soil (2015). 390: 29-47; PLOS One (2015) 10 (4): e0124691). The student will be co-supervised by these PIs, but other project collaborators will serve on the student's steering committee. While they will work beside three other graduate students under the larger project above, the selected student will investigate how soil fungal communities drive tree chemical resistance to insects and disease. This will entail metabolomic analyses of manipulated greenhouse-grown seedlings. Ideal candidates would have strong analytical chemistry skills especially liquid or gas chromatography experience as well as interest in at least one of the following disciplines: chemical ecology, fungal/microbial ecology, plant physiology, or plant-fungal interactions. Further, an excellent understanding of forest ecology is a plus.

Depending on applicant interest and qualifications, the project offers flexibility in designing a research project pursuing areas of personal interest while investigating the topic above. Proficiency in spoken and written English is required, and candidate selection will be based on academic achievements, reference letters, and previous research experience.

Strong verbal, written, and computational skills are essential. A standard University of Alberta Graduate Assistantship is available for the successful candidate.

The position is will begin Fall (September, 2016) term. Applicants must satisfy University of Alberta Department of Renewable Resources entrance requirements, available for review at:

<http://www.rr.ualberta.ca/GraduateProgram.aspx>.

Interested candidates are encouraged to email (1) an unofficial transcript (undergraduate and/or MSc, as appropriate), (2) curriculum vitae, (3) a brief personal statement describing research and career goals, and how this degree would achieve those goals, and (4) names and contact information for three references to Dr. Jonathan Cale, Department of Renewable Resources,

4-42 Earth Science Building, University of Alberta, Edmonton, Alberta T6E 2E3, Canada. Please submit application materials or information inquires to [Jacale@ualberta.ca](mailto:Jacale@ualberta.ca).

Additional information: Department of Renewable Resources – <http://www.rr.ualberta.ca/>