

# Postdoctoral Research Associate Position: Soil Microbial Ecology

A postdoctoral research associate position is available in the lab of Dr. Ed Gregorich, at the Ottawa Research & Development Centre, Agriculture & Agri-Food Canada (AAFC), located in Ottawa, Ontario. This position will work closely with other AAFC researchers including, Drs. David Overy (Ottawa), Bobbi Helgason (Saskatoon), and Henry Janzen (Lethbridge).

The research will focus on understanding the role of microbial by-products in the formation of stable soil organic matter (SOM) fractions. Decomposition of plant litter and SOM will be linked to microbial DNA profiling and their chemical biomarkers to characterize the microbial and biochemical processes that transform litter into recalcitrant SOM fractions. Studies will be conducted to evaluate the diversity and chemical complexity of decomposition products that affect soil microbial community structure, diversity, and function, which in turn influence rates of C accrual via microbial growth and the production and turnover of decomposition by-products. Our intent is to understand key parts of soil C cycling as influenced by plant litter decomposition and resulting changes on soil microbial diversity, affecting the health and productivity of soils.

The position will include some combination of the following activities:

- assisting with field work at research sites across Canada (Ontario, New Brunswick, Saskatchewan and Alberta)
- conducting and/or coordinating biogeochemical analyses, including  $^{13}\text{CO}_2$  stable isotope probing
- DNA and RNA extraction and sample preparation for targeted high throughput sequencing or metagenomics analyses
- mass spectrometry-based metabolomics experiments assessing microbial small molecular weight metabolites
- data analysis and manuscript preparation
- presentation of results at national and international scientific meetings.

In addition, the successful candidate will assist with lab organization and mentoring graduate and undergraduate students, and engage in a stimulating research environment created by multiple researchers working on coordinated aspects of the project. The successful candidate must have a Ph.D. with a research focus in soil microbiology, soil science, biogeochemistry, or a closely related field with preference given to those with experience in molecular methods. Preferred candidates will also possess the following attributes: A strong publication record from their Ph.D. (papers published, in press, or submitted); creativity, independence, and the desire to learn new things; excellent communication skills, both written and oral.

The position is renewable annually, contingent upon funding and/or job performance. A start date of August 1, 2018 is ideal, but alternative timelines will be considered and should be noted in the cover letter. All questions about the position and application materials should be submitted to: Ed Gregorich (ed.gregorich@agr.gc.ca).

Applications should consist of a single pdf file that includes:

- a brief cover letter (no more than 2-pages) that highlights past research accomplishments, how your previous experience will benefit this project and your future research goals
- a curriculum vitae
- names and contact information for three references.