

# THE SOILED PROFILE



## NEWSLETTER DEPARTMENT OF SOIL SCIENCE UNIVERSITY OF MANITOBA “bringing you the latest dirt”



UNIVERSITY  
OF MANITOBA

For general inquiries or if you have material to include in the newsletter:

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Past issues of the Soiled Profile are on our  
webpage: [umanitoba.ca/afs/soil\\_science/](http://umanitoba.ca/afs/soil_science/)

**7 April 2017**

### Upcoming:

Monday, Apr 10, 8:30 a.m., Room 375 Ellis Building – The Monday Technician meeting will move to its summer schedule of 8:30 a.m.

Tuesday, May 2, Room 346 Ellis Building – Department of Soil Science Spring Orientation

### Department Staff Away:

Brian Amiro	Apr 24-28
Paul Bullock	Apr 10-23
Martha Blouw	Apr 4-22

### News:

*Don't Forget to Register for Summer Term*

Master's students: Register for [Master's Thesis - 1536 - GRAD 7000 - A01](#). If you've registered for Re-registration in the past, register for that again too - [Master's Re-registration - 1538 - GRAD 7020 - A01](#).

Ph.D. students: Register for [Doctoral Thesis - 1541 - GRAD 8000 - A01](#). If you've registered for Re-registration in the past, register for that again too - [Doctoral Re-registration - 1543 - GRAD 8020 - A01](#).

*Grad students, you can contact Bev Godard ([Bev.Godard@umanitoba.ca](mailto:Bev.Godard@umanitoba.ca)) for help until Martha returns.*

*Paper of the week:*

Fernando, D.M., Tun, N.M., Poole, J., Patidar, R., **Li, R., Mi, R., Amarawansha, G.**, Dilantha R., Khafipour, E., **Farenhorst, A.**, Kumar. A. (2016). Identification of antibiotic resistance genes in source and drinking water samples from a First Nation Community in Canada. *Applied and Environmental Microbiology*, 82 (15):4767-4775.

## Opportunities:

### ICAN-WISE Scholarship Program 2017 - NSERC CWSE Prairies

The purpose of the ICAN-WISE Scholarship is to facilitate women mentee-mentor academic research collaborations in natural sciences and engineering fields. This is an initiative of Dr. Annemieke Farenhorst, Prairie NSERC Chair for Women in Science and Engineering. Six ICAN-WISE scholarships will be available in 2017, worth \$6000 each, which are to be awarded to students that are enrolled in undergraduate programs in one of the following Prairie universities (2 awards per province):

- Manitoba (U of Manitoba, U of Winnipeg, Brandon U, University College of the North);
- Saskatchewan (U of Saskatchewan, U of Regina, First Nations University of Canada); and
- Alberta (U of Calgary, U of Alberta, MacEwan University, U of Lethbridge, Mount Royal University).

The \$6,000 scholarship is the student's stipend while working with their mentor on a research project in the summer of 2017. The application can be accessed on our website ([click here](#)). If you are a female undergraduate student registered at any of the universities listed above, please proceed and complete step 1 to 3 on the application form. Submit your application by **April 24, 2017**, midnight to [Lena.Yusim@umanitoba.ca](mailto:Lena.Yusim@umanitoba.ca).

### Graduate Student Awards Currently Available

there are several Graduate student awards currently open for competition with deadline **April 21, 2017**.

All of the application forms and eligibility criteria can be found on the Faculty Awards Database:

<https://agawards.agric.umanitoba.ca/index.php/admin/award>.

- 2017-2018 MZTRA Soil Conservation Fellowship (approximately \$25,000 will be available)\*
- 2017-2018 James Gordon Fletcher Graduate Fellowship in Agricultural and Food Sciences (approximately \$20,000 will be available)\*
- 2017-2018 Orval G. Caldwell and H. Ruth Gardner Caldwell Fellowship in Sustainable Ag/Agroecology (approximately \$13,000 will be available)\*
- 2017-2018 Syngenta Graduate Scholarship (approximately \$12,500 will be available)\*
- 2017-2018 Robert J. Parker Graduate Fellowship in Animal Science (approximately \$10,000 will be available)\*
- 2017-2018 Katharine M.S. Middleton Scholarship (approximately \$3,900 will be available)\*
- 2017-2018 John Dueck Graduate Entrance Scholarship (approximately \$2,500 MSc./\$3,700 PhD will be available)\*
- Holmfridur Kristjansson Graduate Award in Nutrition (1 award of \$6,100)
- Sydney L. Morantz Scholarship for Research In Poultry Science (variable - \$3,375)

\*Please be advised that for the 2017-2018 awards, the amounts listed are estimates based on previous years. The actual amounts will be provided from the Financial Aid and Awards office. Each of these awards have different eligibility criteria, so you are encouraged to read about each award to see if you qualify. All qualified candidates are encouraged to apply! The Faculty Awards Committee will meet in May to select winners for each award. Contact Marisol Soto at [agawards@umanitoba.ca](mailto:agawards@umanitoba.ca) for more information.

### Cam Brown Scholarship for National and International Study

This \$3,000 scholarship is open to a full-time student enrolled in an undergraduate program (degree or diploma) of the Faculty of Agricultural and Food Sciences at the University of Manitoba. Deadline to apply is **April 28**. More information or to apply: [click here](#).

## **Agricultural Meteorology Technologist, Food Development Centre, Winnipeg**

Term to March 31, 2018, with annual renewal

Salary: \$45,579 - \$54,177 per annum

Closing Date: **April 17, 2017**

The Food Development Centre (FDC) is seeking qualified individuals for the position of Agricultural Meteorology Technologist to provide technical support to the Manitoba Agriculture Ag-Weather Program. FDC is a Special Operating Agency of the Government of Manitoba.

Qualifications: B.Sc. or two year diploma in Electronic, Computer or Instrumentation Engineering Technology or suitable combination of education and experience. Knowledge and understanding of weather collection equipment, field programs, micro processors, basic programming and proven experience in communication with the public are essential. Database and computer networking experience would be an asset. Ability to troubleshoot wired and wireless communications, demonstrated ability to work independently with minimal supervision, and well developed organizational skills to effectively manage multiple priorities and deadlines desired. Applicants must have a valid driver's license and the ability to travel throughout southern Manitoba. The ability to climb heights of 10m, lift 37kg and extensive travel are essential.

Duties: The incumbent will assist in the construction and maintenance of the Ag-Weather Program with the primary task of constructing and maintaining weather collection equipment within the communication network throughout Manitoba. Secondary duties will include assisting in the operation of the program's data servers and applications.

Apply in Writing to: Karen Templeton, Food Development Centre, 810 Phillips Street, Portage la Prairie, MB R1N 3J9, Fax: (204) 239-3180, Email: [karen.templeton@gov.mb.ca](mailto:karen.templeton@gov.mb.ca).

## **Executive Director, Manitoba Canola Growers Association, Winnipeg, MB**

The Manitoba Canola Growers Association (MCGA), based in Winnipeg, is a provincial commodity association representing approximately 8,500 farmers who grow and market canola and its products. Its mission is to maximize net income for canola farmers through sustainable production, with a strategic focus on research, market development, and member relations. Seeking an energetic and dedicated professional, with a collaborative approach to leadership and significant communication and general management skills.

Applications must be received by **April 24th, 2017**. Apply, with resume, to email: [patti.mckenzie@scottwolfe.ca](mailto:patti.mckenzie@scottwolfe.ca), Scott Wolfe Management Inc., 5315 Portage Avenue, Headingley, Manitoba, Canada R4H 1J9. [Download job posting](#)

## **MacSon Professorship in Agronomy for Eastern and Northern Ontario, Plant Agriculture, Ontario Agricultural College, University of Guelph**

Full-time, tenure track, Assistant Professor Position, specializing in Eastern and Northern Ontario Agronomy.

Deadline: **May 30, 2017**. ([More information](#))

**Ph.D. Opportunity, Department of Plant, Food and Environmental Sciences, Faculty of Agriculture, Dalhousie University, Truro, Nova Scotia**

Topic: Soil organic carbon storage and deficit as influenced by soil type and depth and farm management regime.

Supervisor: Dr. Derek Lynch (<https://www.dal.ca/faculty/agriculture.html>)

Project Description: Maintenance of soil organic carbon (SOC) is critical to both climate change mitigation and adaptation, and soil health. The maintenance of SOC levels is particularly critical in the often shallow and sloped agricultural soils of Atlantic Canada where past practices have resulted in a decline in SOC levels, representing a significant limitation to the productivity and sustainability of these soils. Through utilization of long-term research trials and on-farm sites, and across soil types characteristic of the region, the research will examine the potential for SOC storage in both surface and sub-surface soil as influenced by management regime. Through SOC fractionation, C isotopic and other techniques, the research will provide a critical examination of models for prediction of SOC storage capacity, while elucidating the influence of inherent and dynamic soil properties on active SOC pools linked to soil health. On a subset of farm sites, varying in intensity of management and forage utilization, SOC status and dynamics will be linked to testing and validation of existing decision support models characterizing whole-farm level C dynamics. Applicants should hold a Master's degree with a strong background in natural or agricultural sciences. Expertise in agriculture, plant and soil science is desired.

Start Date: May, 2017 (preferred) or Sept. 2017

Stipend: \$24,000/year for three years. There are scholarship and teaching assistant opportunities to supplement the stipend above this base level.

Further information or to apply: Please contact Dr. Derek Lynch, Department of Plant, Food and Environmental Sciences, Faculty of Agriculture, Dalhousie University, PO Box 550, Truro, Nova Scotia B2N 5E3, Canada, E-mail: [Derek.lynch@dal.ca](mailto:Derek.lynch@dal.ca). To apply please send transcripts and a resume, statement of career goals, and contact information (addresses, email and phone numbers) of at least two references.

**Ph.D. Opportunity, Department of Renewable Resources, University of Alberta, Edmonton, AB**

Topic: Boreal soil carbon

Project: Boreal forest soils are the single largest terrestrial carbon storehouse in the world. Consequently, changes in boreal carbon stocks and fluxes could significantly affect the global carbon cycle. These northern, high-latitude soils are also highly susceptible to global warming, and in the coming century are expected to face large increases in average temperatures, altered freeze-thaw patterns, and transformative vegetation shifts. The carbon contained in boreal soils is a complex network of interconnected pools, the stability of which may be controlled by various mechanisms. As such, it has been challenging to predict the response of boreal soil carbon to environmental changes.

This Ph.D. project will aim to clarify how interactions between the soil geological material and vegetation may ultimately determine the response of boreal soil carbon to climatic changes. We will use a variety of methods, including NMR and stable isotope tracking, to evaluate the source and fate of boreal carbon in soil profiles under different environmental conditions.

Qualifications: Candidates must have a M.Sc. (or equivalent) in soil science, chemistry or a related environmental science discipline. Strong verbal and written communication skills are essential.

The project will include some field sampling. A Class 5 Driver license is required, and experience working in difficult and remote terrain will be an asset. This project will also involve substantial laboratory work where attention to detail is essential. Prior experience with analytical techniques used in environmental chemistry is preferred.

Students must commence their graduate study between September 2017 and May 2018.

The project is funded by NSERC. A yearly stipend of \$25,000 will be provided. In addition, the University of Alberta provides competitive recruitment awards between \$5,000 and \$10,000 for outstanding applicants. Graduates from a Canadian University with a GPA>3.5 on a 4.0 scale and international students with equivalent academic accomplishments usually receive an entrance award.

Interested candidates should e-mail their transcript, a detailed curriculum vitae, a cover letter that summarizes their qualifications and research goals, and the names and contact information of three references to Dr. Sylvie Quideau at [sylvie.quideau@ualberta.ca](mailto:sylvie.quideau@ualberta.ca).

## Events:

### **Project in Agroecology (AGEC 4550), Final Oral Presentations, Friday April 7, Ellis Building Room 344**

Seminars describe the Fourth-Year Thesis Projects of our Agroecology Students. Each talk is a maximum of 15 minutes (13 minute target), followed by a 5-minute question period. Pizza and Refreshments following the seminars. Note the schedule below may have slight changes depending on flow of each presentation.

Time	Topic	Speaker	Advisor
230pm	General Introduction		
235pm	Measurements of Evapotranspiration over Soybeans ( <i>Glycine max</i> ) in South Central Manitoba	Tony Britton	Dr. Brian Amiro (Soil Sci.)
255pm	Phosphorus Dynamics during Phytoremediation of Municipal Biosolids using a Wetland System	Morgan Hope	Dr. Francis Zvomuya (Soil Sci.)
315pm	Development of a Diagnostic Field Tool to Determine Nitrogen Sufficiency in Organically-Managed Soils	Jennifer Wiebe	Dr. Martin Entz (Plant Sci.)
335pm	Phosphorus Release from Municipal Biosolids under Simulated Flooding during Terrestrial Phytoremediation	Karine Ferguson	Dr. Francis Zvomuya (Soil Sci.)
355pm	The Reliability of the Rapitest: Soil Test Kit for Nitrogen and Phosphorus based on Laboratory Analysis	Torrie Eggie	Dr. Mario Tenuta (Soil Sci.)
415pm	The Influence of Polyculture on Seedling Yield during Primary Emergence	Seriki Muhammed Zul Gambari	Dr. Doug Cattani (Plant Sci.)
435pm	Wrap-up and refreshments		

**Everyone Welcome!**