

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 now on our
webpage: umanitoba.ca/afs/soil_science/

3 February 2017

Upcoming:

Wednesday, Feb 15, 12:30 p.m., Room 346 Ellis Building – Two conference-length Department of Soil Science seminars.

Masoud Goharrokhi, Ph.D. student. “Assessing some of the issues associated with the time-integrated fine sediment sampler (TIFSS).”

Mayowa Adelekun, Ph.D. student. “Simulation of greenhouse gas fluxes from perennial forage grasses and annual crops using the DNDC model.”

Wednesday, Mar 1, 12:30 p.m., Room 346 Ellis Building – Department of Soil Science, Seminar Series, Marla Riekman, Soil Specialist, Manitoba Agriculture. “TBA”

Wednesday, Mar 15, 12:30 p.m., Room 346 Ellis Building – Department of Soil Science, Seminar Series, Dr. Timi Ojo, Agricultural Meteorology Specialist, Manitoba Agriculture. “Understanding Scale Issues in Soil Moisture Monitoring”

Department Staff Away:

Paul Bullock Feb 21-22 (Ottawa), Apr 10-24 (vacation)

Terri Ramm Feb 6-9 (vacation) **(Note: dates have changed from last week’s newsletter)**

News:

Fire Alarm Follow-up

The Ellis Building Fire Alarm sounded approximately 11:00 a.m. on February 1. The reason for why the alarm was activated is currently not known but it was not triggered by a fire. Thanks to everyone for a prompt response and evacuation of the building.

The Fire Department was concerned about the state of the cooking equipment in the snack room. Rob Ellis has cleaned it up for now. However, the microwaves, toaster oven and regular toaster need to keep free of food deposits as they are a potential fire and smoke source. Please keep them clean.

Steam Plant Shutdown

The yearly steam distribution shutdown at the Fort Garry campus is proposed as follows:

Shutdown: Sunday, June 4, 2017, 18:00 hours Startup: Wednesday, June 14, 2017, 12:00 noon

The shutdown is essential for annual maintenance requirements. During this time, domestic hot water will be available where electric hot water stand-by heaters are available. Air conditioning and building ventilation will continue to operate during the shutdown. Steam at 30 psig will be available again by **Thursday, June 15, 2017 at 8:00 hours**. If you have questions or concerns about the proposed schedule, please feel free to contact Greg Kwok, Manager Chief Power Engineer, Physical Plant.

Paper of the week:

Diochon, A., N. Basiliko, M. Krzic, T.T. Yates, E. Olson, J. Masse, **B. Amiro**, and **D. Kumaragamage**. 2016. Profiling undergraduate soil science education in Canada: Status and projected trends. Canadian Journal of Soil Science. On-line version available.

This week's "Paper of the Week" is also the **Editor's Choice** in the Canadian Journal of Soil Science (<http://www.nrcresearchpress.com/journal/cjss>). Congratulations to all the co-authors!

Opportunities:

Agronomy Research Technician, Department of Plant Science, University of Manitoba

The Applied Soybean and Pulse Research program led by Kristen Podolsky MacMillan, P.Ag. in the Department of Plant Science at the University of Manitoba is hiring an Agronomy Research Technician (Position Number 23435). For a complete list of applicant requirements and position responsibilities please see the detailed position description posted on the Employment Opportunities section of the Human Resources website for the University of Manitoba. Applications will be accepted until **February 10, 2017**.

The field agronomy research technician will be responsible for executing and managing small plot agronomy research trials related to soybean and pulse production throughout Manitoba. This position will be based out of Winnipeg, MB or Carman, MB. This is a 5-year grant funded position. The ideal candidate will have a BSc or MSc in an agriculture related discipline, experience with agronomic research and experimental design, experience with small plot agricultural equipment and experience with soybean and pulse crop agronomy.

For more information or to apply, [click here](#).

Research Agronomist, National Sunflower Association of Canada, Carman, Manitoba

Job Description:

The successful candidate will lead the sunflower research portfolio and production activities under the guidance of the Executive Director to implement NSAC's strategic plan. Key job areas and responsibilities include trial management and supporting activities related to NSAC's Confection Sunflower Variety Development Initiative and variety performance trials. In addition, the Research Agronomist will provide agronomic and crop production support through several communication outlets directed to producer members and industry representatives.

Education and Experience:

University or college degree or diploma or 3 to 4 years of experience with a strong background in agronomy. Knowledge of agronomy research design and field work, and statistical analysis, is an asset, as well as being proficient in Microsoft Suite. Applicants must be eligible for registration or are registered members with the Manitoba Institute of Agrologists.

Competencies:

- Knowledge of the sunflower crop highly preferred; training is available.
- Demonstrated knowledge of: crop production/cultural practices; research trial experience and statistical analysis.
- Demonstrated skills in: educating and influencing producers; conflict resolution and handling objections; using computer hardware software/intranet to generate reports; collecting, interpreting & communicating trial results into reports.
- Demonstrated ability to: build/maintain strong relationships with growers, key industry/market influencers, work effectively within a board of directors; lead and influence projects and coach board of directors in developing defined research objectives/goals; communicate the importance and progress of the Confection Sunflower Variety Development Initiative; get results by taking initiative, overcoming obstacles & finding creative solutions.
- The successful applicant should be able to work independently with minimum supervision and operate within budget; work in and adapt to a rapidly changing business environment. Flexible work hours can be negotiated depending on the weekly and seasonal workload for the right candidate.

Send applications to: darcelle.graham@canadasunflower.com. Apply by **February 15, 2017**.

Indigenous Scholar, Assistant Professor, Faculty of Agricultural and Food Sciences, Univ. of Manitoba

The Faculty of Agricultural and Food Sciences, University of Manitoba invites applications from Indigenous (e.g., First Nations, Métis, Inuit) Scholars for a tenure-track position at the rank of Assistant Professor, commencing July 1, 2017, or as soon as possible thereafter, in one of the following broad disciplines: Agricultural Business/Economics; Food/Nutritional Sciences; or Agricultural Production/Ecology. Identification of a specific Department (Agribusiness and Agricultural Economics, Animal Science, Biosystems Engineering, Entomology, Food Science, Human Nutritional Sciences, Plant Science, Soil Science) will be based on the area of specialty of the successful candidate. The position will be weighted at approximately 45% teaching, 40% research and 15% service/outreach. Qualified applicants must possess: a Ph.D. in a relevant discipline; a record of independent research as demonstrated by scholarly publications; the potential for developing an active externally-funded research program including supervision of graduate students; demonstrated ability or potential for excellence in undergraduate and graduate teaching; and excellent oral and written communication skills. The successful candidate will be required to teach undergraduate and graduate courses in their area of expertise with inclusion of Indigenous perspectives and approaches. We also envisage that the Scholar will work closely with other instructors to help include Indigenous knowledge and perspectives for all students. The Faculty of Agricultural and Food Sciences is one of the most research-intensive Faculties at the University of Manitoba, and the Indigenous Scholar will be responsible for developing an independent research program funded through a variety of mechanisms that includes training graduate students. Our expectation is that the research and outreach programs will focus on safe, healthy, just, sustainable food systems for Indigenous Canadians and the broader population. The Scholar will also be expected to contribute to larger interdisciplinary efforts.

All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority. Applicants must, at application, declare that he/she self-identifies as an Indigenous (First

Nations, Métis or Inuit) Canadian. Applications, including a curriculum vitae, short statement of teaching philosophy and research interests, the names and addresses (including phone and e-mail addresses) of three referees, and Indigenous Canadian self-declaration verification should be sent (preferably by email) to: Dr. Brian Amiro, Chair, Indigenous Scholar Search Committee, Department of Soil Science, Faculty of Agricultural and Food Sciences, University of Manitoba, Winnipeg, Manitoba, R3T 2N2 Canada. (204) 228-3374; FAX: (204) 474-7642, e-mail: brian.amiro@umanitoba.ca

Closing date for applications is February 27, 2017. The review of applications will continue until the position is filled. Application materials, including letters of reference, will be handled in accordance with the protection of privacy provisions of “The Freedom of Information and Protection of Privacy” (Manitoba). Please note that curriculum vitae may be provided to participating members of the search process.

M.Sc. Opportunity, Department of Soil Science, University of Manitoba
Quantification of Weather Impacts on Wheat Gluten Strength

Co-supervisors: Dr. Paul Bullock and Dr. Harry Sapirstein

Project Description: This project examines physical and biochemical factors underlying CWRS wheat processing quality for breadmaking, primarily gluten strength, as a function of genotype (G), the crop growing environment (E) and G x E interactions. Wheat and other crops grown in the Prairie provinces typically experience an enormous range of weather conditions every year. The wheat plant responds to a complex set of soil, water, climate, and pests during its growth cycle. The spatial and temporal variability in growing conditions creates the potential for a very wide range in breadmaking quality of CWRS wheat. This is a major concern for wheat customers, who require a reliable source of wheat of consistent and expected quality, from shipment to shipment, and from year to year. The research focus is to determine if certain CWRS varieties have an intrinsic level of gluten strength below acceptable levels when exposed to variations in weather and biotic pressures across western Canada. This will build on earlier research and establish links between wheat gluten protein fractions, technological quality parameters related to gluten strength, wheat grade (and degrading factors) and patterns of weather variation during specified periods of crop development. The long term goal is to solidify and enhance the value of the CWRS wheat class in world markets by developing a thorough understanding of genotype and environment influences on gluten strength for breadmaking. Better information on the factors causing CWRS wheat quality to vary will benefit producers and the value chain in general. The proposed research includes the collaboration of virtually all spring wheat breeders in western Canada which underscores the importance of this project.

Position Details: The M.Sc. position starts May 1, 2017. It is based in the Department of Soil Science and will focus on agrometereological factors related to gluten strength of wheat being grown in replicated field trials across the Prairies. The student will be co-supervised by Dr. Paul Bullock (Department of Soil Science) and Dr. Harry Sapirstein (Department of Food Science) and will work within a team of Research Associates, Technicians and other graduate students in both Soil Science and Food Science at the University of Manitoba. The student will also collaborate with Agriculture and Agri-Food Canada personnel at field study sites across the prairies. To apply, please send transcripts, resume and names of two references to: Dr. Paul Bullock, Department of Soil Science, University of Manitoba (Paul.Bullock@umanitoba.ca) by **March 1, 2017**. Applicants should hold a Bachelor’s degree with a strong background in natural or agricultural sciences. Expertise in agriculture, plant and soil science is desired. Annual MSc stipend: \$20,000 per year, for a maximum of two years. There are scholarship and teaching assistant opportunities to supplement the stipend above this base level.

M.Sc. and Ph.D. UMGF Awards, Department of Soil Science, University of Manitoba

New applicants and current M.Sc. and Ph.D. students are encouraged to apply for the 2017 Department of Soil Science University of Manitoba Graduate Fellowship Competition. The award value is \$14,000 per year for a maximum of 2 years for M.Sc. students; and \$18,000 per year for a maximum of 4 years for Ph.D. students. Note that students may only hold the award for the first 24 months of their M.Sc. program or 48 months for a Ph.D. program; students who are currently enrolled must have at least 12 months remaining in their program as of May 1, 2017; new students must become enrolled by January 2018. Students must have a minimum GPA of 3.75 (above B+) at a recognized university based on their last 60 credit hours or equivalent. All students regardless of citizenship are eligible to apply.

Students must submit the following electronically to Martha Blouw, Graduate Academic Advisor, Telephone: 204-474-8223; email: Martha.Blouw@umanitoba.ca, by **March 6, 2017**, 400pm:

- Official Transcript of grades from all university programs; University of Manitoba students request student histories from the Registrar's Office (free) to be sent directly to Martha Blouw, 226 Agriculture Building; Current students can provide copies of their original transcripts used for initial admission;
- Letter of Intent describing your educational goals, notional thesis topic area, the name of your thesis advisor, and the date when your program will start;
- A resumé indicating exceptional achievements and demonstration of leadership and experience;
- A 300- to 500-word description of your intended research.
- Letters of reference from two professional referees sent directly from the referee to Martha.Blouw@umanitoba.ca.

Assistant Professor, Environmental Soil Biogeochemistry, Department of Natural Resource Sciences, McGill University, QC

The Department of Natural Resource Sciences of McGill University invites outstanding scholars to submit applications for a tenure-track position in Environmental Soil Biogeochemistry at the Assistant Professor level. This is a full-time tenure track appointment with teaching, research and service responsibilities. The appointee will develop a strong, active, externally-funded research program involving undergraduate and graduate students. The appointee will teach courses at the undergraduate and graduate levels. Collaboration in research and teaching is encouraged with others in the Department, across the Faculty and the University. Service is expected to include demonstrated contributions to the university and scholarly communities, as well as outreach/engagement in the broader community.

Responsibilities: The successful candidate is expected to perform research on the physical, chemical and biological components and processes of soils that control the fluxes of water, contaminants, carbon, nutrients and greenhouse gases from ecosystems. The research program will address soil biogeochemistry in the context of natural and anthropogenic disturbances, such as sustainable agriculture, land use change, pollution from trace metals and persistent organic substances, spatial soil heterogeneity and global climate change. The selected applicant's record of performance must demonstrate achievement and evidence of outstanding research potential in the area of environmental soil biogeochemistry.

The successful candidate must demonstrate an ability and commitment to teaching excellence in agricultural and environmental sciences at the undergraduate and graduate levels. This position will complement the Department of Natural Resource Science's existing strengths in soil science, agriculture, applied ecology, ecotoxicology, forest and landscape ecology, wildlife and fisheries biology, entomology, microbiology, economics and natural resource policy. The successful candidate should have experience and interest in working with interdisciplinary groups.

Qualifications: The successful applicant will hold a Ph.D. in a relevant field, such as soil science, biogeoscience, applied physical chemistry, vadose zone hydrology, environmental sciences or environmental engineering.

For more information about the Department and Faculty of Agricultural and Environmental Sciences, visit our web sites at: <http://www.mcgill.ca/nrs/department-natural-resource-sciences>; www.mcgill.ca/macdonald.

Applications should include a cover letter, a current curriculum vitae, a research statement that includes achievements and future plans, up to three publications in PDF format, a summary of teaching interests and experience, and letters from three professional references who can evaluate their candidacy for a tenure-track position. The position start date is August 1, 2017. Inquiries about this position may be sent to the Chair of the Department, Dr. Brian Driscoll, brian.driscoll@mcgill.ca. Review of applications will begin on **March 10, 2017** and will continue until the position is filled. PLEASE APPLY ONLINE AT: <https://academicjobsonline.org/ajo/jobs/8829>.

Mitacs, Canadian Science Policy Fellowship

The Canadian Science Policy Fellowship is now accepting applications from prospective fellows interested in undertaking a 12-month policy project with a host government department or agency. Applicants can apply to up to six approved projects in their area(s) of interest.

Eligible applicants must be:

- Faculty members at Canadian universities or PhD graduates
- Canadian citizens or permanent residents
- Able to negotiate a leave of absence from their university or employer, as applicable

The 2017 cohort of fellowships will begin in September 2017. Approved fellows receive remuneration from their hosts and professional development training and networking events facilitated by Mitacs.

Applications will be accepted until **March 14, 2017**, at 5 p.m. PDT. For more information, please visit the [Canadian Science Policy Fellowship](#) or contact policyfellowship@mitacs.ca.

International Graduate Student Scholarship (IGSS) for M.Sc. and Ph.D., University of Manitoba

If you are planning to transfer from a Master's to a PhD program, or to apply to a PhD program for the Summer 2017, Fall 2017 or Winter 2018 term, you are encouraged to apply and must apply by the **April 11th deadline** if you wish to be considered for the IGSS for the 2017 -2018 academic year. Even if you are unsure of what you will do, you are encouraged to submit an application. Late applications will not be considered. [Read more.](#)

M.Sc./Ph.D. Opportunities, Department of Renewable Resources, University of Alberta, Edmonton, AB Soil carbon-greenhouse gas emissions

Seeking students to fill 2-3 MSc/PhD positions for the following projects.

Project 1: Carbon cycling in agroforestry systems. We aim to understand the controls on carbon storage/sequestration and greenhouse gas emissions in agroforestry systems across different climatic regions in Alberta.

Project 2: Manure and compost management and effects on greenhouse gas and ammonia emissions and crop productivity.

Extensive field work will be involved. The projects offer considerable flexibility in designing research programs that investigate areas of personal interest (to the student) within the overall framework of the projects. The projects are in collaboration with Drs. Edward Bork, Cam Carlyle and Xiying Hao within the University of Alberta and with Agriculture and Agri-Food Canada (Lethbridge), a group of people with very strong research programs that the students will be interacting with.

Students with educational background/training/experience in biogeochemistry, ecology, soil science, global change biology, forestry or other related areas are encouraged to apply. Selection of students will be based on academic achievements, reference letters and if applicable previous research experience. Strong verbal, written, and analytical skills are essential. Having a valid driver's license and a good driving record would be an asset.

Salary ranges between CAN\$24,000 and \$25,000/year (from a combination of sources) plus graduate student benefits for a period of 2 (MSc) to 4 (PhD) years. It is preferable that successful candidates start their program in summer 2017 or start their laboratory and fieldwork in summer 2017 while applying to the graduate program at the U of A for the fall of 2017 or January 2018.

Interested candidates should e-mail their transcripts (scanned/unofficial), curriculum vitae, a letter describing their research experience and interests (2-page limit), recent TOEFL (minimum of 100 with each section >22 points), or IELTS scores (minimum of 7.0 with each section > 6.0) (those are minimum requirements of the project/lab. group), if appropriate, and the names and contact information of three references to: Dr. Scott Chang, Professor, Forest Soils and Nutrient Dynamics, Department of Renewable Resources, University of Alberta, Edmonton, Alberta, Canada T6G 2E3, Tel: (780) 492-6375; Fax: (780) 492-1767, Email: scott.chang@ualberta.ca.

Events:

2017 Joint Meeting of Canadian Geophysical Union (CGU) and Canadian Society of Agricultural and Forest Meteorology (CSAFM), May 28-31, 2017, Vancouver, BC

The call for abstracts for the joint meeting in Vancouver in May is now open. The official meeting website has details on abstract submission and proposed sessions: <http://cgu-ugc2017meeting.ca/>. The deadline for abstracts is **February 15**.