

# 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:

Lynda Closson  
University of Manitoba  
Room 362 Ellis Bldg  
Winnipeg, MB R3T 2N2

Phone: 204 474-8153, Fax: 204 474-7642  
Email: [lynda.closson@umanitoba.ca](mailto:lynda.closson@umanitoba.ca)  
Past issues of the Soiled Profile are now on our  
webpage: [umanitoba.ca/afs/soil science/](http://umanitoba.ca/afs/soil%20science/)

**16 December 2016**

### Upcoming:

Tuesday, Dec 20, 12:00 noon, Room 346 Ellis Building – Department of Soil Science annual holiday potluck.

The sign-up sheet in the main office is filling up with excellent dishes. Please sign up if you have not already done so. An invitation was sent to retirees and alumni. Please check with Lynda if there is someone that should be on the invitation list.

December 23, 2016 – January 2, 2017 – University closed.

Wednesday, Jan 11, 12:30 p.m., Room 346 Ellis Building – Department of Soil Science seminar.

Melody Caron, M.Sc. student. “Integration of sediment fingerprinting techniques and comparison of the accuracy of colour coefficients as tracers.”

Wednesday, Jan 18, 3:30 p.m., Room 130 Agriculture Building – Faculty seminar. Dr. Brian Amiro, Department of Soil Science.

Wednesday, Jan 25, 12:30 p.m., Room 346 Ellis Building – Two Department of Soil Science seminars.

Justice Zhanda, M.Sc. student. “Modeling phenological development of corn: Do Corn Heat Units work in the Prairies.”

Matthew Wood, M.Sc. student. “A comparison of Enhanced Efficiency Nitrogen Fertilizers and Products to Reduce Nitrous Oxide Emissions in Manitoba.”

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

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

Matthew Wood, M.Sc. student. “Simulation of greenhouse gas fluxes from perennial forage grasses and annual crops using the DNDC model.”

## Department Staff Away:

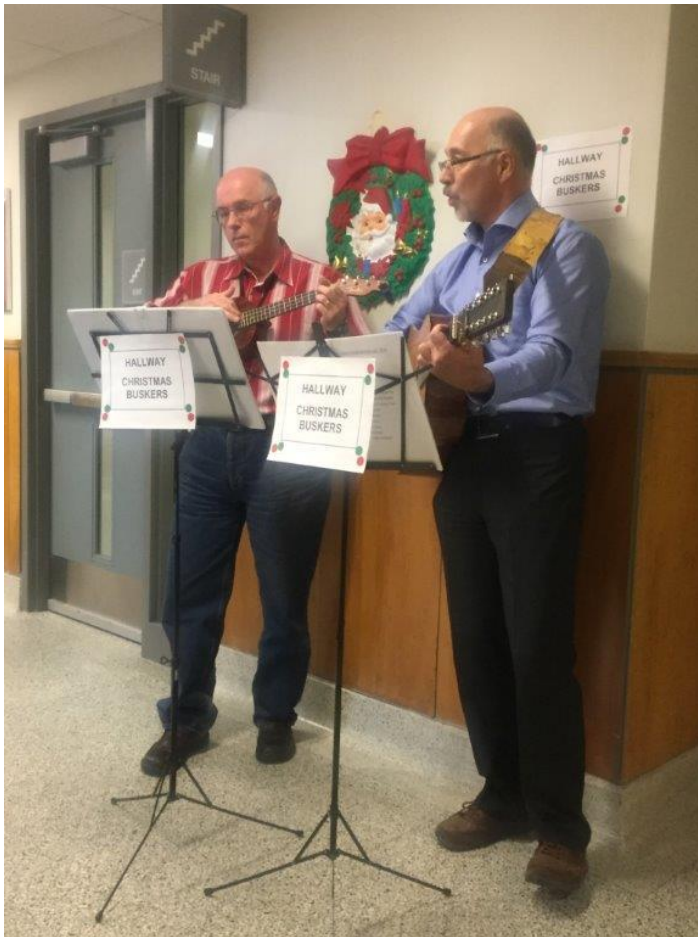
Brian Amiro                      Dec 10 – 16 (San Francisco)  
Mario Tenuta                     Dec 12–16 (San Francisco), Dec 22 (Saskatoon)

Jennifer's last work day is today (December 16). She will be back again on January 9.

## News:

### *Dean's Holiday Party Buskers*

Soil Science duo Rob Ellis (ukulele) and Paul Bullock (guitar) serenaded patrons of the Dean's Holiday party on Monday afternoon in the Agriculture Building. After a few songs, they were joined by Phil Veldhuis (violin) to create an impromptu string trio.



(Thanks to Jennifer and Tim for taking photos.)

## Opportunities:

### **Technician 5 - 4R NITROGEN AGRONOMIST, Department of Soil Science, University of Manitoba**

Key Responsibilities:

- Plan, establish, manage and monitor 4R nitrogen fertilizer trials throughout agricultural Manitoba, in response to dynamic environmental conditions such as weather, crop and pest conditions as they occur.
- Develop and implement sample collection, preparation, storage and analyses protocols for soil and plant samples.

- Work with other Soil Science staff and staff of crop diversification centres, industry research staff and crop consultants to implement the systems and protocols.
- Develop and manage a dataset for soil and plant data. Prepare statistical analyses, tables, graphs and figures.
- Write research reports, peer-reviewed manuscripts and extension publications.
- Recruit, hire, train and supervise summer students.
- Coordinate field and lab activities among researchers and students working at field experiment plots and labs.
- Communicate relevant decisions, activities, opportunities, and challenges to scientists, staff and industry through tours, extension meetings, field tours and social media (e.g. Twitter) on behalf of the Soil Ecology Laboratory.
- Perform other related duties as assigned or required.

Qualifications:

- Minimum Education required is a Master of Science degree in Agronomy, Soil Science or other relevant discipline with substantial depth in soil, crop and nutrient management is required.
- Prairie Certified Crop Advisor preferred.
- Two years of directly related experience is required.
- Experience in experimental design, designing and implementing field crop research protocols, project management, statistical analyses, and writing of research reports, is required.
- Substantial experience in agricultural and field operations required, including intensive production and protection of crops is required.
- Experience in supervising staff and publishing peer-reviewed manuscripts is preferred.
- Experience in recruiting, hiring, training, and supervising the work of staff and students is required.
- An acceptable equivalent combination of education and experience may be considered.

Estimated Weekly Hours 35; Salary (Hourly) \$25.84 - \$34.42; Salary (Annual) \$47,028.80 - \$62,644.40

**Application deadline: 2017-01-23**; Proposed Start Date: 2017-02-01. More info: [click here](#).

This position is under the supervision of Dr. Mario Tenuta, Soil Ecology Lab. For inquiries please contact Dr. Tenuta at [Mario.Tenuta@umanitoba.ca](mailto:Mario.Tenuta@umanitoba.ca).

**Sessional Instructor, 2<sup>nd</sup> Year Hydrology, Department of Environment and Geography, University of Manitoba**

The Department of Environment and Geography is currently seeking a sessional instructor to teach GEOG 2310 (Introduction to Process Hydrology) in the Winter 2017 term. There are currently 29 students (maximum of 30) enrolled. Course PowerPoints and assignments are available for a sessional instructor to utilize in their teaching. If you are interested in this teaching opportunity, please contact Janna Wilson ([janna.wilson@umanitoba.ca](mailto:janna.wilson@umanitoba.ca)).

## Mitacs Elevate 2-Year Postdoctoral Funding

Mitacs Elevate ( [click here](#) ) is now accepting applications for two-year postdoctoral funding:

- \$55,000 annual award (plus \$7,500 per year non-cash value in training)
- Exclusive, customized professional development training
- Long-term collaborative research project with a non-academic partner

Deadlines:

- Letter of intent and Conflict of Interest declaration: **January 25, 2017**, at 5 p.m. PST
  - Letters of intent are not required to submit applications
- Pre-review of draft applications: February 8, 2017, at 5 p.m. PST
- Application: February 22, 2017, at 1 p.m. PST
- Results announced: June 2017
- Projects must start by September 5, 2017, after the proposal is approved AND Mitacs has received the partner funds, as per Mitacs Policy.

For questions or more information, please contact [elevate@mitacs.ca](mailto:elevate@mitacs.ca).

## Landscape Horticulture, Tenure track faculty position, Department of Plants, Soils and Climate, Utah State University, Logan, UT

The position is landscape horticulture with an emphasis in water conservation. A person is sought who will combine horticulture, plant physiology, and plant ecology to increase understanding of the effects of drought on perennial landscape plants and develop best management practices that ensure both water conservation and quality landscaping. The position will be filled at the Assistant Professor level with a role assignment of 65% research, 30% teaching, and 5% service. It is expected that the candidate will collaborate widely within the departmental disciplines. In addition, this position will be affiliated with the Center for Water Efficient Landscaping, a legislatively created center of research and extension programs with dedicated operating funds and graduate research assistantships. Utah State University is in Logan, Utah, and offers the amenities of a small college town while being only 90 minutes north of Salt Lake City and the highly-urbanized Wasatch Front. The campus is minutes away from unmatched outdoor recreation opportunities and within a day's drive of several spectacular national parks. Further information may be found at <http://jobs.usu.edu/>.

Although application review will begin on **January 1, 2017**, applications will be accepted afterwards and the review will continue until the position is filled.

## Events:

### 60th Annual Manitoba Soil Science Society Meetings, Feb. 2-3, 2017, Holiday Inn – Winnipeg South

This years' theme is "Scaling up Research for Practical Applications". Abstracts for posters and presentations are due on **December 16, 2016 (that's today!)**. Both oral and poster presentations are welcome. Graduate student presentations are judged with awards for the best oral and poster presentations. Please see the Call For Papers below.

An 'anniversary committee' is busy planning events to celebrate 60 years of soils research and extension in Manitoba – stay tuned for details on the celebration and how to register!

## **European Funding Opportunities Workshop**

A workshop on European Funding Opportunities for faculty members will be held on January 6, 2017 at the St. John's Cross Commons Room (Rm 108):

1:30 to 2:30 Information Session on EU Funding including Erasmus+ (teaching and student exchange), Jean Monnet (teaching and research), Horizon 2020 and leveraging Tri-Council Partnership grants.

2:30 to 3:30 Networking Event – Using a “speed-dating” format, faculty members will have the opportunity to introduce themselves, connect with others interested in the region, and explore potential collaborations.

Please **RSVP by December 20th** to [Niki.Biebrick@umanitoba.ca](mailto:Niki.Biebrick@umanitoba.ca), indicating attendance for the Info Session and/or the Networking Event. For further information, please contact: Anna Polonyi, International Partnership Officer, International Centre, [Anna.Polonyi@umanitoba.ca](mailto:Anna.Polonyi@umanitoba.ca), 204-474-6835

# CALL FOR PAPERS

## 60<sup>th</sup> Annual Manitoba Soil Science Society Meetings

<b>Contact Information</b>	
<b>Name</b>	
<b>Affiliation</b>	
<b>Address</b>	
<b>Phone</b>	
<b>Email</b>	
<b>Graduate Student (Yes or No)</b>	

\*Please note that we will be using e-mail as the primary means of contact.  
If you do not have access to email, please indicate your preferred means of contact:

Type of Presentation Preferred:
<input type="checkbox"/> Oral Presentation
<input type="checkbox"/> Poster Presentation
Title:
<b>Note that a LCD projector and laptop computer will be available for oral presentations. Please contact us if any other equipment is needed.</b>

Please submit the above information including your abstract as a .doc or .docx file by December 16<sup>th</sup>, 2016 to:

Email: [msss@umanitoba.ca](mailto:msss@umanitoba.ca)

Fax: 204-474-7642 (Attention: MSSS)

Or Mail: MSSS, c/o Department of Soil Science, 362 Ellis Bldg, University of Manitoba,  
Winnipeg, MB, R3T 2N2

For more information contact:

Marla Riekman

Email: [Marla.Riekman@gov.mb.ca](mailto:Marla.Riekman@gov.mb.ca)

## **SAMPLE ABSTRACT**

### **Nitrogen Uptake by Barley Grown in Chernozemic Soils Amended with Anaerobically Digested Manure**

Waraidzo Chiyoka<sup>1,2\*</sup>, Francis Zvomuya<sup>1</sup> and Xiyong Hao<sup>2</sup>

<sup>1</sup>*Department of Soil Science, University of Manitoba, Winnipeg, Manitoba, Canada.*

<sup>2</sup>*Agriculture and Agri-Food Canada, Lethbridge Research Centre, 5403 1<sup>st</sup> Ave. S., Lethbridge, Alberta, Canada*

Anaerobically digested manure (ADM) is a nutrient rich substrate co-generated during biogas production from anaerobic digestion of livestock manure. Currently, the separated solid fraction of ADM (SS) is commonly applied to cropland at rates equivalent to those for raw manure. We hypothesize that biophysicochemical changes occurring during anaerobic digestion may result in a digested product with a different N supplying power. We tested this using five, 6-wk cycles of forage barley (*Hordeum Vulgare L.*) grown in a Dark Brown and a Black Chernozem amended with raw beef cattle (*Bos taurus*) feedlot manure, SS, pelletized SS (PSS) and synthetic fertilizer (urea + monoammonium phosphate, UMP). Amendments were applied at rates calculated to supply 400 and 800 mg total N kg<sup>-1</sup> soil, with a control included for comparison. At each harvest, plant roots and shoots were harvested separately and analyzed for total N. Amendment-derived N content of total biomass was highest for UMP and manure, and lowest for PSS at both rates. The difference between manure and SS was higher at the higher amendment rate, while both PSS rates depressed N uptake relative to non-amended soils. Amendment-derived N also increased with increasing rate for all amendments except PSS. We conclude that anaerobic digestion does not alter N availability and uptake from beef cattle manure while pelletization of the solid fraction of digested manure can cause N immobilization and depress plant N uptake.