



PRESIDENT'S MESSAGE

Greetings to my fellow soils enthusiasts!

For those of you who don't me, I'm Angela Bedard-Haughn and I am your CSSS President for 2021. As I write this, my newsfeed and my inbox are inundated with COVIDersary messages (I may even have drafted one or two myself...). It has been a long, strange year, but I do have hope for what will come in the rest of 2021. With vaccinations rolling out across the country (the other major theme in my newsfeed) and some early glimpses of the spring days to come, it's hard not to be at least a little bit optimistic. And even when I reflect on the past year, what I focus on is the incredible resilience and adaptability that we have seen in so many ways.

As a society, COVID certainly put a damper on our 2020 plans, forcing the postponement of our annual conference, the modification and/or cancellation of many field projects, and cancellation and/or transition of many of our conferences to virtual. But there was resilience there too, and unique opportunities created – taking conferences virtual made it that much easier for participants to engage from across the country and around the world and many events have seen comparable registration to previous years, if not even higher. With each conference, the technology has gotten a bit better and provided new and exciting ways for attendees to interact with both the speakers and with each other. Folks who couldn't afford to travel or who would normally have trouble getting visas were fully participating, forging new pathways for collaboration and in many ways, making our world just a bit smaller...

In a similar vein, our resilient, adaptable organizing committee for CSSS 2020 has pivoted and will be hosting our first virtual conference online in June 2021. While we are all disappointed to miss out on the chance to travel to PEI in June, I am so grateful to Judith and her team for their leadership and willingness to help us all gather virtually in this unconventional time. Please look for more details in this newsletter and online and be sure to submit an abstract – it's been a couple of years since we met so I'm sure we all have plenty of exciting progress to share. I look forward to connecting with many of you in that environment!

Whatever 2021 holds, my untraditional wish for all of you is this:

May your field season be fruitful
May your laboratories be open
May your conferences be stimulating
And may the sun always shine on the
most photogenic side of your soil pit.

Angela Bedard-Haughn
CSSS President



Photo credit: Daniel Saurette



CSSS Council

President

Angela K. Bedard-Haughn
University of Saskatchewan
Ph: 306-966-4050
angela.bedard-haughn@usask.ca

Past President

Nathan Basiliko
Laurentian University
Ph: 705-675-1151 ext. 4150
Email: nbasiliko@laurentian.ca

President-Elect

Asim Biswas
University of Guelph
Ph: 519 824-4120 ext. 54249
biswas@uoguelph.ca

Secretary

Lee-Ann Nelson
Terralogix Solutions Inc.
Ph: 780 461-7726 ext. 232
baumanL15@gmail.com

Treasurer

J. Diane Knight
University of Saskatchewan
Ph: 306 966-2703
diane.knight@usask.ca

Eastern Councillor

Louis-Pierre Comeau
Agriculture and Agri-Food Canada
Ph: 506-460-4464
louis-pierre.comeau@canada.ca

Western Councillor

Richard Farrell
University of Saskatchewan
Ph: 306-966-2772
r.farrell@usask.ca

Graduate Student Representative

Erika Young
Memorial University of Newfoundland
ehyoung@grenfell.mun.ca

Editor In Chief CJSS

M. Anne Naeth
Department of Renewable Resources
University of Alberta
Ph: 780 492-9539
Email: anne.naeth@ualberta.ca

2021 CSSS Virtual Meeting

The Canadian Society of Soil Science annual meeting will be held virtually from June 6th to June 10th, 2021.

<http://www.csss2021.ca/>

Abstract submission from March 1st until March 30th, 2021

Registration from March 17th until May 24th, 2021

\$175 non-members

\$125 members

\$50 students

Anyone who has paid for the 2020 CSSS meeting that was cancelled and has not received the reimbursement, please notify Judith Nyiraneza (Judith.nyiraneza@canada.ca).

Additional important dates:

- Presenters will be notified by April 15th, 2021
- Final agenda ready by May 6th, 2021
- Award applications/nominations are now open <https://csss.ca/awards-criteria>

Nominations to serve on various International Union of Soil Science (IUSS) positions

Dear Soil Science Colleagues,

Please see below for the call for nominations to serve on various IUSS positions. Canada tends to be underrepresented on the IUSS, so if there are any of the positions that pique your interest, please send your nomination info to Nancy Zubriski (nzubriski@gmail.com) no later than April 15, 2021. We will compile the nomination info and submit to the appropriate division by the April 30 deadline.

This is your chance to become involved in the International Union of Soil Sciences (IUSS) and shape its future in the years 2022 to 2026. The IUSS is the global union of soil scientists, and has participation from some 130 countries involving some 50 000 soil scientists. The IUSS Mission is to promote the scientific and life-sustaining importance of soil to humankind, and to support and enhance the discipline of soil science globally. The scientific activities of the IUSS are organized by the Divisions, Commissions and Working Groups.

We are seeking nominations for all Division and Commission positions except Division vice-chairs.

For more information see

<https://www.iuss.org/>

2021 CSSS Awards

Do you know an outstanding soil scientist worthy of recognition for their contribution to CSSS or society at large? Or maybe you are a student needing conference travel funds? For these opportunities and more, check out the CSSS Awards at <https://csss.ca/awards-criteria/>.

CSSS is now accepting applications and nominations for the 2020 CSSS awards. More information is available on the [CSSS website awards page](#).

CSSS Fellow Award: This is awarded to CSSS members with a distinguished record of accomplishment in Soil Science and service to the Society. Nomination deadline March 31, 2021.

CSSS Honorary Membership Award: This is awarded to non-members who have rendered valuable or special service to soil science. Application deadline March 31, 2021.

CSSS Soils Science for Society Award: This is awarded to a member or non-member who has made a contribution towards promoting soil science to the general public. Application deadline March 31, 2021.

CSSS-CJSS Student Travel Awards for International Soil Science Meetings: The Canadian Society of Soil Science (CSSS) and the Canadian Journal of Soil Science (CJSS) are pleased to jointly sponsor two annual awards to provide travel funds for student members of CSSS to attend international soil science meetings. Applications will be reviewed three times per year, or until all available funds have been allocated. Award confirmation will be made at the end of each review period: March 31st, June 30th, and September 30th 2021. If no applications have been received by the September deadline, applications will be evaluated in the order that they are received for the remainder of the calendar year.

CSSS Pedology Travel Awards: This award is for CSSS members to participate in international meetings and workshops, specifically those related to Pedology, so as to secure our international presence and the future of our expertise in this area of soil science. Applications will be reviewed three times per year, or until all available funds have been allocated. Award confirmation will be made at the end of each review period: March 31st, June 30th, and September 30th, 2021. If no applications have been received by the September deadline, applications will be evaluated in the order that they are received for the remainder of the calendar year.

C.F. Bentley Award (Oral Presentation) and Presidents Award (Poster Presentations) will be administered during the conference.

Note: Student Travel to CSSS Annual Meeting Award has been cancelled due to the nature of the conference.

CSSS Bid Committee for the 24th WCSS

The Bid Committee has given formal notification, to the IUSS, of our intention to submit a bid, for the 24th World Congress of Soil Science, during the upcoming 22nd WCSS in Glasgow next year. Our bid proposes that the 24th WCSS be held during July of 2030 in Toronto, with the opportunity to organize tours in the various regions of Canada. The committee has now begun working on the bid document, with subcommittees focused on: scientific theme & geographic arguments; international soil judging contest; pre-, in- & post-congress tours; innovative ideas for the congress program; community engagement & legacy; web presence; as well as sponsorship opportunities & promoting the bid. Anyone interested in participating on the development of our bid is invited to send an email to 24wcss@gmail.com, indicating their subcommittee preferences, as well as suggestions or questions.

Richard J Heck (Chair) & Jacynthe Masse (Vice-Chair)

CSSS Social Media

The CSSS social media continues to start conversations about soil science and support a Canadian community of experts and enthusiasts. The highest engagement rates come from Twitter, which just surpassed 850 followers, with campaigns balancing fun engagement, such as #MemeMonday, and an academic focus, such as promotion of the Canadian Journal of Soil Science.

Read the latest article from CSSS's Grounded in Soils blog on the importance of Streptomyces and soil microbes on antimicrobial research, written by recent McMaster University Master's graduate Emma Mulholland. Follow the Grounded in Soils blog for upcoming articles on science art, land reclamation, and the importance of Canadian Science Publishing and open access journals.

Follow us on social media:

[Twitter @CSSS_Soils](#)

[Facebook @CSSS.Soils](#)

[LinkedIn](#)

What else would you like to see promoted on our social media? Send your ideas or feedback to samantha.anne.fowler@gmail.com

A Tribute - Dr. Morris Schnitzer, Agriculture and Agri-Food



Dr. Morris Schnitzer

Dr Schnitzer was a soil chemist who was a pioneer in the study of soil organic matter. His contributions to this field are unparalleled, with his main contributions centering on the analytical methods of extracting, characterizing and modelling humic substances. Many feel he is the grandfather of humic substance study; his publication record includes over 350 refereed articles and many books. He was born to a Jewish family in Germany and fled the Nazis throughout the war. This odyssey has been detailed in his autobiography. He settled in Montreal where he studied soil chemistry and pioneered the early use of gas chromatography, mass spectrometry and NMR to study soil organic matter. For example, in the 1960s, he started a long-term investigation on the oxidative degradation of humic substances and whole soils using very early forms of gas chromatography and mass spectrometry. Never afraid of controversy, he also pioneered the use of pyrolysis mass spectrometry which led to his assertion of the prevalence of N-containing structures in soil organic matter. Dr Schnitzer obtained his B.Sc. with first class honors in 1951, M.Sc in 1952, and Ph.D. in 1955, all from McGill University in Soil Chemistry. Dr. Schnitzer was the winner of The Wolf Prize in Chemistry in 1995. He is a fellow of the Canadian Society of Soil Science, Soil Science Society of America, American Society of Agronomy, and Royal Society of Canada.

Advances In Soil Survey & Classification In Canada

Over the past decade, Canada has experienced transformations in the area of soil survey. This was mainly due to the emergence of remote sensing technologies, proximal soil sensors, big data analytics, spatial modelling, and machine learning. By leveraging these technologies, Canadian soil surveyors have been better equipped to provide vital soil information necessary to facilitate sustainable soil management practices in agricultural and forested systems and across multiple spatial scales. This special issue will address two important themes in soil survey: renewal of the Canadian System of Soil Classification; and application of predictive digital soil mapping techniques on Canadian landscapes.

This special issue will be structured on 15-20 manuscripts that we anticipate will be submitted. Theme 1 manuscripts may include research related to soil taxonomy in Canada, and proposals for additions or changes to the Canadian System of Soil Classification. Theme 2 manuscripts may include research related to the application of technologies and spatial modelling techniques to generate predictive soil maps.

Anticipated submission deadline is September 2021.

Guest Editors

Brandon Heung
Assistant Professor
Dalhousie University
brandon.heung@dal.ca

Angela Bedard-Haughn
Dean and Professor
University of Saskatchewan
angela.bedard-haughn@usask.ca

Daniel Saurette
Land Resource Specialist
Ontario Ministry of Agri-Food and Rural Affairs
daniel.saurette@ontario.ca

Chuck Bulmer
Research Scientist
British Columbia Ministry of Forests, Lands, Natural Resource Operations, and Rural
Development
chuck.bulmer@gov.bc.ca

Job Postings



Dalhousie University full-time tenure stream faculty position

The Department of Plant, Food, and Environmental Sciences (PFES) in the Dalhousie University Faculty of Agriculture invites applications from qualified candidates for a full-time, tenure stream faculty position in Agronomy at the Assistant Professor rank.

The full posting is available at the link below.

<http://dal.peopleadmin.ca/postings/5158>

Golder has three soil and terrain postings that are active and accepting CVs.

Below are the links where individuals can apply.

Soil Technician: <https://golder.taleo.net/careersection/globalcareersection/jobdetail.ftl?job=21000737&tz=GMT-05%3A00&tzname=America%2FToronto>

Soil Scientist: <https://golder.taleo.net/careersection/globalcareersection/jobdetail.ftl?job=21000741&tz=GMT-07%3A00&tzname=America%2FEdmonton>

Terrain Scientist: <https://golder.taleo.net/careersection/globalcareersection/jobdetail.ftl?job=21000754&tz=GMT-07%3A00&tzname=America%2FEdmonton>

Two Ph.D. Positions with Agriculture and Agri-Food Canada

Two Ph.D. positions are immediately available at the Quebec Research and Development Centre (QRDC) of Agriculture and Agri-Food Canada (AAFC) in collaboration with Université Laval or McGill University or INRS ETE (Quebec, QC). Both positions are part of the living lab initiative projects funded by AAFC. More specifically, one Ph.D. student will focus on “Precise nitrogen management under potato production in Prince Edward Island (PEI)”. Different techniques/methods will be used to study soil nitrogen, including remote and proximal plant and soil sensing systems and geostatistics. Field work will be conducted in PEI and laboratory work will be conducted in QRDC. The second Ph.D. student will focus on “Impact of interseeding cover crops under cornsoy bean rotation on productivity and soil health”. Field work will take place on the Lac St-Pierre region and laboratory work (plant analyses, soil chemical-physical and biological analyses) will take place at QRDC. Both students will be awarded an annual stipend of \$25,000/year for three years. Applicants must hold a M.Sc. degree in soil science or in a related field and be eligible to a Ph.D. program in Soil and Environment at Université Laval, McGill University or INRS ETE (Québec, QC).

To apply, 1) please send a CV, a letter of interest and two letters of recommendation to Dr. Noura Ziadi (noura.ziadi@canada.ca) or Dr. Athyna Cambouris (athyna.cambouris@canada.ca) and 2) apply online at : <https://emploisfp-psjobs.cfp-psc.gc.ca/psrs-srfp/applicant/page1800?toggleLanguage=en&poster=1565897>

Job Postings (Con't.)

University of Alberta - Graduate Student Positions

Project Title: Soil health benefits and nutrient management of perennial forages in crop rotations in western Canada.

Degree Opportunities: PhD (1) and MSc (2).

Project Leads: Dr. Edward Bork, Professor and Mattheis Chair, Rangeland Ecology & Management, University of Alberta. Dr. Miles Dyck, Associate Professor of Soil Science, Department of Renewable Resources, University of Alberta. Dr. Sylvie Quideau, Professor of Soil Science, Department of Renewable Resources, University of Alberta.

Timelines: Preferred start date of May 1, 2021, though positions will remain open until filled.

Project Description: We are seeking graduate students to work on projects focusing on:

- quantifying the long-term agronomic outputs from different crop rotations, including those with varying contributions (2/5 yr, 3/8 yr, continuous) from perennial forages;
- assessing the environmental impacts of different rotations (including specific contributions of perennial forage) on carbon storage, C-capture efficiency, and soil health;
- quantifying the agronomic and soil health benefits of coordinated nitrogen and sulfur fertilization in various rotations.

Position Requirements: All individuals applying should have:

- Strong academic background and interest in conducting advanced studies in agronomy, soil biogeochemistry and/or soil physics. Students should have a min GPA > 3.3.
- Excellent communication skills, both verbal and written.
- An ability to work closely with others in a team environment, as well as develop and undertake innovative scientific approaches.
- Possess strong organizational skills, problem-solving ability.
- Willingness to engage in problem solving, data analysis, and thesis development.
- Ability to work in the field for extended periods.
- A valid graduated (non-probationary) drivers' license and a clean driving record.

Annual Stipend: Approximately Cdn \$24,000, according to the UofA graduate students collective agreement

How to Apply: Interested candidates should send a copy of transcripts, CV, and a statement of research experience and interests (1 page limit), with the names of three references, to: Dr. Miles Dyck, Department of Renewable Resources, University of Alberta – mdyck@ualberta.ca

Websites: <https://apps.ualberta.ca/directory/person/ebork>, <https://apps.ualberta.ca/directory/person/mdyck>, <https://www.ualberta.ca/renewable-resources/research/environmental-soil-science/soilsylviequideau.html>

Internal financial auditor for the CSSS needed

CSSS is in need of a second internal auditor for the CSSS financial statements. Our by-laws indicate that the financial statements are to be audited by two CSSS members. Auditing involves checking that income and expenses are accurately recorded. The Treasurer will supply all of the documentation, along with instructions as to what needs to be done. The audit takes place in May and needs to be complete a week before the Annual General Meeting in June. Please consider volunteering for this important role. If you are interested send your expression of interest to Nancy Zubriski at nzubriski@gmail.com.

CSSS New Student Representative Since January 1, 2021



Erika Young

Erika Young is a PhD student at Memorial University of Newfoundland and student researcher for Agriculture and Agri-Food Canada working under the supervision of Dr. Adrian Unc and Dr. Claudia Goyer where she studies underground food-web dynamics in predominantly boreal regions and in the Atlantic provinces of Canada. She is currently evaluating the use of free-living nematodes as biotic indicators of change in soil quality induced by land use change, management, and climate change in boreal systems. Erika completed a BSc in Environmental Science in 2016 and in 2017 attended training for the Identification of

terrestrial and freshwater nematodes at the Netherlands Institute of Ecology and Wageningen University and Research Centre in Wageningen, Netherlands. This training allowed her to complete a MSc in 2019 that assessed the variability of physicochemical parameters and nematode and microarthropod communities across land uses in podzols of Western Newfoundland and Central Labrador. Her research interests include cold-climate agriculture, sustainable agriculture, the impacts of land use change on soil systems, and all things nematology.

CSSS New Treasurer Since January 1, 2021



Dr. J. Diane Knight

Dr. J. Diane Knight is a professor in the Department of Soil Science at the University of Saskatchewan and Saskatchewan Ministry of Agriculture Strategic Research Chair in Soil Biological Processes. My research uses stable isotopes to investigate biological nitrogen fixation and nitrogen movement, turn-over and efficiency of use by crops in rotations. My M.Sc. and Ph.D. degrees are both in Plant Physiology and I have maintained the linkage between plants and soils in my academic career focusing on how crops interact to affect soil fertility and soil quality in crop rotations. I began my University studies with the goal of becoming a veterinarian and soon found myself far more interested in plants and soil than animals. I received my B.Sc. in Biology from the University of Calgary and my M.Sc. and Ph.D. from the University of Saskatchewan and completed a PDF at

the University of Minnesota under the tutelage of Drs. Deborah Allan and Carroll Vance. I have been a member of the CSSS for the past 15 years and served on the local organizing committee in both 2010 and 2019 when the CSSS annual meetings were held in Saskatoon. I am excited to give back to the Soil Science community by serving as the Society treasurer.

CSSS New Secretary Since January 1, 2021



Lee-Ann Nelson

Lee-Ann Nelson (M.Sc., P.Ag.) is a soil scientist in the private sector at North Wind Land Resources Inc. in Edmonton, Alberta where she works as a consultant to assist clients with the management of environmental liability through the completion of various site assessments and regulatory reports. I also complete post-reclamation soil audits in the Athabasca Oil Sands Region, and contributes to soil reclamation research initiatives in the Region in an effort to better understand various soil cover designs and their level of success in the reclaimed landscape. I completed my Bachelor and Master of Science (M.Sc.) degrees at the University of Northern British Columbia in the Natural Resources and Environmental Studies Department. My M.Sc. thesis was completed through the Hakai Institute under the supervision of Dr. Paul Sanborn and Dr. Barbara Cade-Menun, and was focused on soil genesis, organic phosphorous pools, and forest productivity along an aeolian Holocene chronosequence located on Calvert Island, British Columbia. Prior to pursuing my M.Sc., I performed reclamation research at Alberta Innovates-Technology Futures in Edmonton where she assisted with a variety of projects including the long-term ecological recovery monitoring of reclaimed well sites in Alberta, carbon monitoring in the

Karl C. Ivarson Soil Science Scholarship

In 2021, one (1) scholarship of \$2,000 will be offered to a graduate student studying soil science.

Candidates who meet the following eligibility criteria are welcome to apply:

- Candidates must hold Canadian citizenship or Permanent Resident status in Canada.
- Candidates must be registered full-time in a masters or doctorate program in the area of soil science (agriculture, agro-ecology, resource management, environment, geology or other related disciplines) at a recognized Canadian university. Note: A letter from the university confirming enrolment is required to be submitted in support of the application by the deadline, otherwise the application will be rejected.
- Candidates must be entering the second or subsequent years of graduate studies in soil science (agriculture, agro-ecology, resource management, environment, geology or other related disciplines).
- Previous recipients of this scholarship are not eligible for subsequent awards.

Detailed Application Guidelines and Forms available at

www.CFFAE.ca

Application Deadline: April 23, 2021



CANADIAN SOCIETY OF SOIL SCIENCE
SOCIÉTÉ CANADIENNE DE SCIENCE DU SOL

CSSS - Business Office

Contact: Nancy Zubriski
PO Box 637,
Pinawa, Manitoba, Canada,
R0E 1L0

Telephone: (204) 299-2327
Email: nzubriski@gmail.com
Website: www.csss.ca