



# Canadian Society of Soil Science

Société Canadienne de la  
science du sol

## 2021 AWARDS PROGRAM



**June 7<sup>th</sup> - 10<sup>th</sup>, 2021**  
**Virtual**

**2021 Canadian Society of Soil Science Annual Meeting**  
**BUILDING BRIDGES AND CONNECTING SOIL PROPERTIES**





## **2021 Canadian Society of Soil Science Council**

President:	Angela Bedard-Haughn
Past President:	Nathan Basiliko
President-Elect:	Asim Biswas
Secretary:	Lee-Ann Nelson
Treasurer:	Diane Knight
Western Councillor	Richard Farrell
Eastern Councillor:	Louis-Pierre Comeau
Student Representative:	Erika Young
CJSS Editor-in-Chief:	Anne Naeth

### **2021 CSSS Awards Committee**

Asim Biswas (Chair), Nathan Basiliko, Maja Krzic

## **2020 Canadian Society of Soil Science Council**

President:	Nathan Basiliko
Past President:	Fran Walley
President-Elect:	Angela Bedard-Haughn
Secretary:	Amanda Diochon
Treasurer:	Edith Olson
Western Councillor	Richard Farrell
Eastern Councillor:	Louis-Pierre Comeau
Student Representative:	Gazali Issah
CJSS Editor-in-Chief:	Anne Naeth

### **2020 CSSS Awards Committee**

Angela Bedard-Haughn (Chair), Fran Walley, Joann Whalen





## Honorary Life Members

1978 Dr. J.W.T. Spinks

1987 Honourable H.O. Sparrow



## Soil Science for Society Award

2008 Dr. Jim Robertson

2009 Dr. Art Bomke

Dr. Don Flaten

Dr. Jean Caron

2012 Dr. Maja Krzic

2013 Dr. Jeff Schoenau







## CANADIAN SOCIETY OF SOIL SCIENCE FELLOWS

1962	Dr. W.A. DeLong Prof F.F. Morwick	1990	Dr. C.R. De Kimpe Dr. R.L. Halstead Dr. C.A. Rowles
1963	Prof. J.H. Ellis Dr. D.J. Laird Mr. H.C. Moss Dr. J.D. Newton	1992	Dr. D.F. Acton Dr. J. Dumanski
1964	Dr. E.S. Archibald Dr. A. Leahey Dr. P.C. Stobbe	1993	Dr. W.W. Pettapiece
1965	Mr. W.E. Bowser Mr. C.C. Kelley	1994	Dr. E. de Jong Dr. M.D. Webber
1967	Mr. W. Odymsky	1995	Dr. E.G. Beauchamp Dr. W.B. McGill
1971	Dr. V. Ignatieff Dr. M. Schnitzer Dr. D.A. Rennie	1996	Dr. D.W. Anderson Dr. J.A. Toogood
1973	Dr. C.F. Bentley Mr. W.E. Johnson	1997	Dr. G.M. Coen
1974	Dr. K.F. Neilsen Dr. R.C. Turner	1998	Dr. M.A. Arshad Dr. M. Nyborg Dr. G.R. Webster
1976	Mr. J.S. Clayton Dr. E.A. Paul	1999	Dr. M.R. Carter Dr. R.G. Kachanoski Mr. Y.P. Kalra Dr. A.R. Mermut
1977	Dr. J.A. McKeague Dr. A.J. MacLean Dr. L.B. MacLeod Dr. B.P. Warkentin	2000	Dr. D.S. Chanasyk
1978	Dr. U.C. Gupta Dr. D.W. Hoffman	2001	Dr. B.D. Kay
1979	Dr. R.J. St-Arnaud	2002	Dr. R. R. Simard
1980	Dr. S. Pawluk	2004	Dr. L. Lavkulich
1981	Mr. R.W. Baril Dr. R.J. Soper	2005	Dr. W.D. Reynolds Dr. H.H. Janzen
1982	Dr. J.D. Beaton Dr. D.E. Elrick Dr. M.H. Miller	2006	Dr. E. Gregorich
1983	Dr. D.C. MacKay	2007	Dr. M. A. Naeth
1984	Dr. J.A. Robertson	2008	Dr. C.M. Preston Dr. D.A. Angers
1985	Dr. P.M. Huang	2010	Dr. D.J. Pennock Dr. F.J. Larney
1986	Dr. H. Kodama	2011	Dr. C.A. Grant Dr. J. Caron
1987	Dr. J.W. B. Stewart	2013	Dr. C. F. Drury
1988	Dr. C.A. Campbell Dr. G.C. Racz Dr. G.C. Topp	2015	Dr. N. Ziadi
1989	Dr. J.F. Dormaar Dr. A.F. Mackenzie Dr. P.J. Rennie	2016	Dr. D. Lobb
		2017	Dr. Gerry Neilsen Dr. Barbara Cade-Menun
		2018	Dr. Scott Chang
		2019	Dr. Joann Whalen
		2020	Dr. David Burton



## 2021 Canadian Society of Soil Science Fellows

**Dr. Don Flaten** (Retired Professor at the University of Manitoba) has been a member of the CSSS since 1978 and has continually been generous to the society with his time and talents. Don's contributions to the CSSS include service as Treasurer (2003-2008), Chair of the local arrangements committee for the 2013 Annual Meeting Conference in Winnipeg, authoring 18 papers in CJSS, more than 37 manuscript reviews for CJSS, and the 2009 recipient of the CSSS Soil Science for Society Award.



Don cultivated his interest in agronomy while growing up and contributing to the family farm near Weyburn, Saskatchewan. He received his B.S.A. (1978), Agronomy Major, with Great Distinction from the University of Saskatchewan, and Ph.D. (1989) in Soil Science from the University of Manitoba. Between these academic milestones, Don was a District Agriculturist (1978-1980) in Alberta and the Provincial Soil Specialist (1984-1987) in Saskatchewan. Don has worked in and/or visited many of the rural municipalities in the Prairies throughout his career. Students are often pleasantly surprised that he knows their family farm and also that of their relatives.

Dr. Flaten is nationally and internationally recognized for his research in soil fertility processes, especially phosphorus dynamics in Prairie soils and production systems. Don has also been recognized for his career contributions as a Fellow of the American Agronomy Society. Don is known for his unparalleled commitment to teaching excellence and student success with every student at the Diploma, Degree and Graduate level in Manitoba since 1998, learning soil fertility from him. This dedication and care to students is recognized with 12 major teaching awards. His service to the University of Manitoba has included being the Director of the School of Agriculture (1987-1999), Associate Dean in the Faculty of Agricultural and Food Sciences (1990-1994), Chair of the National Centre for Livestock and the Environment (2008-2012), Chair (2012-2019) and Student Advisor (2014-2019) of the Agronomy Major Degree Program. Dr. Flaten continues to be frequently sought for his insightful, sound, and practical advice in soil fertility to farmers and industry on the Prairies. His contributions to extension have been recognized in eight major outreach awards.







**Dr. Newton Z. Lupwayi** is a Research Scientist with Agriculture and Agri-Food Canada with more than 25-yr of service, first at the Beaverlodge Research Farm and currently at the Lethbridge Research and Development Centre in Alberta. Dr. Lupwayi has a B.Sc. in Agricultural Science from the University of Malawi and received his M.Sc. in Soil Chemistry and Fertility from the University of Aberdeen in Scotland before obtaining a Ph.D. in Soil Microbiology from Lincoln University, New Zealand.

A member of CSSS for more than 20 years, Dr. Lupwayi has made significant contributions to soil science in Canada. He is widely known nationally and internationally

for his leading research on soil microbial community composition, diversity, and functioning in agroecosystems. Particularly, he evaluates the environmental sustainability of crop nutrition and crop protection strategies by observing the impacts of agricultural practices on the soil microbiome. His recent work on *"Profiles of wheat rhizobacterial communities in response to repeated glyphosate applications, crop rotation, and tillage"* was recognized with the 2021 Editor's Choice award from the Canadian Journal of Soil Science. Furthermore, Dr. Lupwayi is a renowned expert on nutrient release from organic soil amendments (including crop residues), biological nitrogen fixation, and endophytic bacteria.

Throughout his distinguished career, Dr. Lupwayi has been actively involved in CSSS Council as Secretary (2006-08) and then as Editor (2015-16), and Editor-in-Chief (2017-18) of the Canadian Journal of Soil Science. On many occasions, he has judged student oral and poster presentations as CSSS Annual Meetings. He has provided research training to many summer and cooperative education students over the years and supervised two post-doctoral fellows working on soil microbiology. In addition, he was active in the provincial Alberta Soil Science Workshop Organizing Committee for 4 years and was the Chair for its 50th Anniversary Workshop in 2013. Dr. Lupwayi did an exemplary job of leading the organization of a memorable and exciting meeting that celebrated half a century of advances in soil science.





Dr. Lupwayi is a prolific researcher of international stature who produces award-winning, highly cited papers that advance our knowledge of soil biological health in innovative agricultural systems. He has been recognized on three occasions with “Best Paper” awards from the Canadian Journal of Plant Science. In addition to his leadership at the helm of the Canadian Journal of Soil Science, he is a long-time Editorial Board member of the top-ranked international journal Agriculture, Ecosystems & Environment, and was a 4-yr Associate Editor for Agronomy Journal. With the surge in interest in soil health in recent years, Dr. Lupwayi has become a highly sought-after speaker for farmer conferences and workshops in Alberta, and across the Prairie provinces. He effectively communicates the complexity of soil ecosystems to a general audience, and as such serves as a ‘soil ambassador’ to the community at large.



**Dr. Jim Miller** is currently an Honorary Research Scientist with Agriculture & Agri-Food Canada (AAFC) at the Lethbridge Research & Development Centre, Lethbridge, AB. Prior to his retirement in March 2020, he was a Senior Research Scientist in Water Quality with AAFC. He earned B.Sc. and M.Sc. degrees from the University of Saskatchewan, and a Ph.D. in Soil Science from the University of Alberta (1989).

Jim has been an active member of CSSS since 1985 (37 years). He served as Western Councillor and supervised the CSSS website (2006–07), sourcing and uploading photographs of past CSSS Fellow awardees. He actively supports the CSSS Annual Meetings, presenting many orals

and posters over the years, while also judging student competitions. Jim is an ardent champion of the *Canadian Journal of Soil Science* publishing 45 papers in the journal since 1985, an incredible 40 of them as first author, which is a record in the journal's history.

Jim has achieved a significant and lasting career legacy since joining AAFC in 1991. He is internationally recognized for his innovation and impact in agri-environmental research, focusing on soil and water quality, soil productivity and biodiversity, and manure and fertilizer beneficial management practices. His goals always strived to reduce environmental threats from excess nutrients, pathogens or pesticides. Jim's early research demonstrated the benefits of no-till, which further encouraged its adoption on the Canadian prairies. The field







experiment he established in 1998 on optimum rates of stockpiled and composted beef feedlot manure for irrigated cropping is ongoing some 23 years later and has generated many valuable research papers and conference presentations.

A career highlight for Jim was his 9 years at the helm of the Alberta watershed of the national Watershed Evaluation of Beneficial Management Practices (WEBs) project (2004–13). Under his guidance, this multi-agency project assessed the impact of streambank fencing, off-stream livestock watering, perennial land cover, manure management, and riparian buffer strips, on water quality in the Lower Little Bow watershed. The WEBs project garnered a national and international reputation for cutting-edge watershed-scale research. It's success led to its integrated template, bringing researchers and farmers together, being embraced by AAFC's new Living Labs Initiative.

Jim has an exemplary publication record, with 113 peer-reviewed papers, and a *h*-index of 23. His top-cited paper has 125 citations. In the last 4 years (2017–20), his productivity has been outstanding, with 28 papers, an exceptional 24 of them as first author. Jim's door is always open to colleagues, students, and visitors. He has co-supervised MSc and PhD students, and a post-doctoral fellow at the University of Alberta.

Jim resides in Lethbridge, and is active in the local volunteer community, including the University of Lethbridge Senate. He plays classical guitar, mandolin, and Irish flutes and whistles. He enjoys listening to music, reading, golf, fly-fishing, going to the gym, and attending live music and sporting events.

**Dr. Bingcheng Si** obtained his B.Sc. and M.Sc. in China, and in 1998 he earned his Ph.D. from the University of Guelph. He started his academic career at the University of Saskatchewan as Assistant Professor in 2000 and was promoted to Associate Professor in 2005 and Professor in 2009.

Dr. Si is recognized internationally for his contributions to soil physics and ecohydrology. Dr. Si is especially known for characterizing soil spatial variability at the landscape scale, unraveling the “hidden” ecohydrological function of deep soil, and revealing the “unseen” eco-pedological impact of minor textural contrasts in a soil profile. He developed the theoretical relationship between water-conducting soil macroporosity and infiltration







rates. His research on soil thermal properties and their interactions with other soil properties and processes has improved the performance of land surface models. He pioneered quantification of ecohydrological processes in deep soil, the results of which are incorporated into the crop rotation planning by farmers and reforestation policies and practises in Canada and China. He has created a sub-field of soil science: quantifying scale-specific variability in the landscape to unravel the complex interaction of underlying soil processes. His findings on the impact of minor textural contrasts across a soil profile have been utilized by industries operating in Canada's oil sands to improve biodiversity and in-turn the success of post- mining reforestation, saving these companies millions of dollars.

Dr. Si is a popular and supportive supervisor, a mentor, and an extraordinary teacher to his students. Dr. Si is dedicated to student success and to 'soil'. Soil physics is often viewed as an intimidating subject. He makes his teaching approachable to many students through inclusion of conceptual models, lab experiences and field trips, photos and videos, in-class discussions and critical analysis of facts, myths, and misconceptions in soil science. Dr. Si has developed graduate courses based on current developments in soil science, such as a course in spatial statistics, and ecohydrology. Additionally, he has developed a joint-training program between China Scholarship Council and University of Saskatchewan. Dr. Si has trained a new generation of soil scientists who carry his legacy and expand their research programs in different corners of the world, advocating for Canadian soil science education. 15 of his PhDs and PDFs have secured positions in Canada, China, Japan, and New Zealand.

Dr. Si has been an Associate Editor for the Canadian Journal of Soil Science, and an editor for their special issues. He has co-authored publications sponsored by the CSSS and has contributed more than 20 papers to the Canadian Journal of Soil Science. Dr. Si has also served as an editor and associate editor for several international journals.



**Dr. Fran Walley** was first hired into a joint Assistant Professor/Extension Specialist position in the Department of Soil Science at the University of Saskatchewan. Fran began her academic career at the time when the adoption of pulse crops was underway in the Canadian Prairies. As a novel crop there was a need to research many aspects of pulse agronomy at both scientific and practical levels, and this was the main focus of Fran's early research career.

A second major emphasis of Dr. Walley's research career was her more fundamental research on





nitrogen and carbon compounds in soil using synchrotron-based techniques at the Canadian Light Source (CLS). During construction of the CLS, Dr. Walley saw the great potential of the CLS in soil science and trained herself as a synchrotron scientist. This ability to see the potential of novel techniques and approaches is a hallmark of Dr. Walley's leadership throughout her career.

A third and continuing thread to Dr. Walley's research career is a concern about the sustainability of current cropping practices on life in the soil, specifically the microbial community.

Fran's contributions to Canadian soil science are noteworthy and her research has made a lasting impact on our knowledge of soils and agronomy but her contributions to soil science extend far beyond this. A major current contribution is her role as co-editor (with Dr. Maja Krzic) of the forthcoming Introductory Soil Science E-textbook for Canadian students. This project began during Dr. Walley's time as president of the CSSS and came from her long experience as an instructor at the first- and second-year level in soil science at U. of Saskatchewan. Although many instructors prefer teaching at upper-year levels, Dr. Walley believes strongly in the importance of introductory teaching and has been a superb teacher of introductory courses.

In addition to her classroom contributions Dr. Walley has also been a leader in administration at the department, college, and university levels. One noteworthy aspect of her time as department head was her championing of award nominations for her faculty colleagues and they received numerous colleges, university, and societal awards under her leadership. This raises the profile of the department and the discipline and ensures that soil science remains a well-respected member of the university and scientific community.

In her role as Associate Dean (Academic) she has been a strong advocate for Indigenous students and programming in the college and served on several university initiatives in this area. She introduced an innovative diploma program for Indigenous land managers and participates directly in this program as well.



## 2020 Canadian Society of Soil Science Fellow



**Dr. David Burton** has been named a Fellow of the Canadian Society of Soil Science for 2020. David is a Professor in the Department of Plant, Food, and Environmental Sciences in the Faculty of Agriculture of Dalhousie University.

David has been closely involved with the CSSS including service on the executive as Secretary (1995-1999) and as President-Elect, President, and Past-President in 2013-2015. He has also been active in the Canadian Journal of Soil Science as an associate editor (2009-2020) and more recently as co-editor for special editions.

Beyond these contributions anyone who has attended the annual meetings of the society also knows that David is highly always engaged with the work of the society and is passionate about its continuing success. David has always been a very friendly face at the annual meetings and has helped to make the society such an inclusive and welcoming organization.

Another very important aspect of his contribution to the society involves his leadership role in organizing the annual meetings of the society on three occasions (2000, 2005, and in the future in 2022). For most people, the huge amount of work around organizing a meeting leads to a private vow of "Never again!" so David's continuing contributions to our annual meetings are truly laudable.

Overall, David's publication record is very impressive, with 111 peer-reviewed papers and 11 book chapters. Many of his papers are widely cited: for example, he has ten papers with over 100 citations - a truly impressive number for soil science.

His fundamental research on N cycling and gaseous emissions of N has a special emphasis on processes that are active during winter - a question of obvious relevance in Canada and a very novel area of study when he began his career. His most-cited article is his ground-breaking 1994 article with Eric Beauchamp on the in-profile concentrations of N gases during freeze-thaw cycles. He has continued to build on this early contribution throughout his career, and over-winter emissions are now firmly established as a significant component of annual emissions in Canada.







David has also made major contributions to many industries and governmental panels, ensuring that the research work done by soil scientists in Canada informs decision making by the private and public sectors. On three occasions (2000, 2018, and 2019) David has made high-level presentations on the state of soil science in Canada to the Agriculture and Forestry Sub-committee of the Senate of Canada. He has participated in important federal committees such as the Canadian Agri-Food Research Council's Expert Committee on Greenhouse Gases and Carbon Sequestration and on federal panels on greenhouse gases and agriculture. More recently David has served on two major NSERC committees. The breadth of his contributions at this level are very impressive given the high level of research and teaching activity he has maintained through the years.

David has made a major impact on students through his undergraduate teaching and graduate student supervision throughout his career. He brings his passion for soil science to the classroom and the field and inspires students to consider soil science as a career.





## 2021 CSSS Pedology Travel Award

The CSSS Pedology Travel Award was established to recognize the importance of soil survey, classification and pedology to the development of Canada's natural resources. Maintaining and increasing our research and teaching capacity in soil pedology is seen as critical to meet contemporary societal challenges and actively engage in solving issues with regards to land use and resource development in Canada.

The CSSS Pedology Travel Support is open to regular members of CSSS wishing 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.

The CSSS Pedology Travel Award has a maximum value of \$4000 per year.

No applications for the 2021 CSSS Pedology Travel Award have been received to date.

## 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) jointly sponsor two awards annually to provide travel funds for student members of CSSS to attend international soil science meetings.

The Travel Award for International Soil Science Meetings allows student members to broaden the scope of their work and expand their relationships with soil science researchers outside of Canada. This is expected to build capacity and increase the engagement of students studying soil science at Canadian universities in the international soil science milieu.

Recipients of these awards are:

**2020:** Jessica Awrey (University of Guelph)  
Joanne Thiessen Martens (University of Manitoba)

**2021:** There have been no awardees to date for 2021





## **CSSS Student Travel Awards**

This award was established in 1991 to promote student attendance at the CSSS Annual Meetings and is available to any graduate student who is a CSSS member. The award is \$700 and a maximum of 12 travel grants are awarded each year.

Due to postponement of the 2020 Annual Meeting, no Student Travel Awards were given in 2020.

Due to virtual nature of the 2021 conference, no Student Travel Awards were given in 2021.







## **President's Award for Poster Presentation**

This award was established in 1992 to foster excellence in student poster presentations as a means of disseminating research results at the CSSS Annual Meetings. The President's Award is: \$500 for the winner, \$300 for the first runner-up and \$200 for the second runner-up.

1<sup>st</sup> Place: TBA

2<sup>nd</sup> Place: TBA

3<sup>rd</sup> Place: TBA

## **C.F. Bentley for Oral Presentation**

This award was initiated in 1983 to encourage and recognize excellence in oral presentations by students at the CSSS Annual Meetings. It honours Dr. Fred Bentley who was CSSS President in 1956-57 and inducted as a CSSS Fellow in 1973. The award winner receives \$500, the first runner-up \$300, and the second runner-up \$200.

1<sup>st</sup> Place: TBA

2<sup>nd</sup> Place: TBA

3<sup>rd</sup> Place: TBA





## CSSS Student Book Awards

This award recognizes undergraduates at Canadian universities who demonstrate excellence in Soil Science. Candidates are nominated by their academic department.

### 2021:

#### Recipient

Maia Rothman  
Julia Martel  
Rosalie Boissonneault  
Emily Anne Reich  
Fernanda Diaz Osorio  
Joshua Weber  
Gabiella Penner  
Ms Helga Holler-Busch  
Joshua Leffers  
Tanzeel Sultan

#### Home University

McGill University  
Université du Québec à Chicoutimi  
Université Laval  
University of Alberta  
University of British Columbia  
University of Guelph  
University of Manitoba  
University of Northern British Columbia  
University of Saskatchewan  
University of Toronto Scarborough

### 2020:

#### Recipient

Hannah Friesen  
Kiah Leicht  
Jessica Thompson  
Ramanpreet Brar  
Marie Poulin-Ouellette  
Obianuju Nwadike  
Teal Randle  
Sarah Low  
Simon Corbeil  
Guillaume Vigneault  
Dalton Barraco

#### Home University

University of British Columbia  
University of Alberta  
University of Saskatchewan  
University of Manitoba  
McGill University  
University of Toronto  
University of Northern British Columbia  
University of Guelph  
Université Laval  
Université du Québec à Chicoutimi  
Dalhousie University





## 2021 CSSS Student Book Awards



**Maia Rothman**  
McGill University



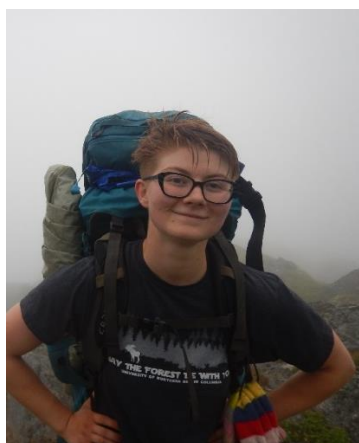
**Fernanda Diaz Osorio**  
University of British  
Columbia



**Joshua Weber**  
University of Guelph



**Tanzeel Sultan**  
University of Toronto  
Scarborough



**Helga Holler-Busch**  
University of Northern  
British Columbia



**Julia Martel**  
Université du Québec à  
Chicoutimi



**Emily Anne Reich**  
University of Alberta



**Rosalie Boissonneault**  
Laval University



**Joshua Leffers**  
University of Saskatchewan



**Gabriella Penner**  
University of Manitoba







## 2021 Annual Meeting Organizing Committee

Judith Nyiraneza, Chair  
Scott Anderson, co-chair & treasurer  
Tandra Fraser, Scientific program  
Louis-Pierre Comeau, Sponsorship  
Morgan McNeil, Sponsorship  
Kyra Stiles, Planning  
Amy Sangster, Planning



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# Thank You

See you all at Edmonton in 2022

