



Minutes of the CSSS Soil Education Committee Meeting, June 11, 2018

2018 CSSS Annual Meeting, Niagara Falls, ON

Meeting Agenda

- 1) Overview of activities since our 2017 meeting in Peterborough, ON:
 - a) 2017 survey of Canadian Introduction to soil science courses – Maja Krzic
 - b) 2018 survey of soil professionals and managers – Tom Yates
 - 2) Soils e-textbook – Fran Walley & Richard Farrell
 - 3) Soil education session for 2019 CSSS conference in Saskatoon, SK – Tom Yates
 - a) Theme – culture and community in honour of late Mr. Terry Tollefson
 - b) Theme ideas for future sessions, after the 2019 CSSS conference
 - c) Ways to encourage abstract submissions
 - 4) Next activities of Education Committee (e.g., survey of current undergraduate students & recent graduates) – Amanda Diochon
 - 5) Other
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DISCUSSION

12:55 PM EST Maja opened the meeting and welcomed everyone. She briefly reviewed the history and activities of the group. Approximately 30 members were present. There was a sign-in sheet circulated.

1) Overview of activities since our 2017 meeting in Peterborough, ON (Maja Krzic)

In 2017, a working group of our committee surveyed the Canadian Introduction to Soil Science courses. The main findings were presented in the General Soil Science session at this year's Annual Conference and in the following paper:

Krzic, M., T. Yates, A. Diochon, M. Swalow, N. Basiliko, and M. Pare. 2018. Introductory soils courses: a frontier of soil science education in Canada. *Canadian Journal of Soil Science* 98:343-356.

<https://doi.org/10.1139/cjss-2018-0006>



In 2018, Tom Yates struck a working group to survey professionals and managers who recruit, supervise, or work directly with soil science professionals, with a goal to gather feedback regarding the application of soil science knowledge and field skills in the areas of agriculture, environment, forestry, and/or resource management. These findings will also help to guide the development of the curriculum for the field course that will be delivered at the University of Saskatchewan in 2019. Key findings will be prepared for publication in the Canadian Journal of Soil Science.

2) Canadian e-textbook for Introduction to Soil Science course (Fran Walley & Richard Farrell)

Dan Pennock initiated the idea of the Canadian e-textbook at the meeting in Montreal in 2015 and he was also at today's meeting. The main textbook used in our introductory courses is Brady and Weil's Nature and Properties of Soils, an American textbook which is great but expensive and solely focused on the US. There is therefore a need to a free or inexpensive e-textbook that can be used to deliver Canadian introductory soil science courses. BC Ministry of Higher Education is currently promoting e-textbooks through BCcampus funding for open textbooks (<https://bccampus.ca/open-education/>). Craig Nichol was recently a reviewer for a chapter of an open e-textbook for a first year physical geology course and would be a good resource.

Fran encouraged everyone to take photos that could be used in the textbook to support Canadian content. She presented/previewed several tables of contents from books that are being used in soil science courses currently for discussion on the chapters that should be/could be included in an introductory soil science textbook. She suggested forming a working group that could review these tables of contents to identify the outline of the e-textbook. Fran highlighted the importance of getting started soon, with a proposed a target completion date of 2020. The steps identified are:

1. Form a working group to finalize chapter topics, coordinate submissions and reviews
2. Determine how the book will be published,
3. Develop guidelines for chapter authors (do this early in the process),
4. Identify authors/co-authors of chapters (solicit proposals?),
5. Develop timelines for chapter submissions.



Fran suggested hiring someone to help format all the submissions into Wordpress for publication. She also mentioned that Dan Pennock had suggested highlighting the work of Canadian soil scientists.

Mario Tenuta asked if we could form a partnership with CSP and the CJSS to be able to use publications from the journal in the textbook. Mario also suggested highlighting the provincial soils in the book.

Fran would like interested people to email her to let her know how she would like to be involved.

Adam Gillespie mentioned that this would be a good fit/support for OMAFRA's soil strategy because there is a real need for training materials to support education/training of professionals who need to assess and advise producers/industry.

Brian Amiro suggested getting an idea of core competency and skill sets required by professionals and to use that to inform what is included in the textbook. This could be done by consulting with the Provincial agencies/groups/institutes. Paul Smith seconded this idea.

Core committee membership and decisions on what will be included are key. Maja suggested having a short paragraph/communication that could be distributed to membership to encourage participation.

Mario also suggested a possible companion lab manual. This idea was well received. Maja also mentioned that the Kansas State University has recently published an online lab manual for introductory courses (see *Moorberg, C.J., and D.A. Crouse. 2017. An open-source laboratory manual for introductory, undergraduate soil science courses. Natural Science Education 46:170013, doi:10.4195/nse2017.06.0013*). We could link up with this and perhaps add to this. Deanne N mentioned also including field demonstrations, which was also well received.

Fran and Rich will prepare a communication for membership and also directly target people.

3) Soil education session for 2019 CSSS conference in Saskatoon, SK (Tom Yates)

The meeting next year at Univ. of Saskatchewan coincides with the 100th anniversary of their soil science department. To honour the memory of late Terry Tollefson (Univ. of Saskatchewan) a soil science education session will be organized at next year's CSSS annual meeting in Saskatoon. The session will



focus on culture and community, which was where Terry was particularly active. He was very involved in Indigenous education and developed a certificate program that is now a diploma. Tom is asking people to think about courses/outreach activities that involve communities and Indigenous communities in particular and to either share those courses/activities in the session next year and/or encourage others to do so.

Maja also mentioned that when we are planning for soils education sessions we typically brainstorm for a theme and encouraged members to think about ideas for the session. Angela suggested keeping things broad (e.g. science communication, core competencies, soft skills) and that the audience can extend beyond students and include the general public, etc.

4. Next activities of the CSSS Education Committee

Amanda summarized the overview of the next project. The next proposed project is to survey students at six-eight universities across Canada on their experience in introductory soil science courses with the goal of improving best practices for delivery. This builds off the first two projects/manuscripts and work that Tom Yates is currently leading on surveying the soil science professionals.

5. Other

Brian Amiro has a project at the University of Manitoba identifying core competencies. In accredited programs there are core competencies that have been identified, but these often do not exist beyond a list of courses for other programs. Over the next 12 months Brian is identifying core competencies in his Faculty and welcomed submissions of known lists of competencies. Identifying core competencies could help with recognition of equivalencies across the country.

Meeting adjourned 13:47 EST.