

CSSS Soil Education Committee Meeting

Held at the Canadian Society of Soil Science Annual Meeting, Montreal, QC on July 8, 2015

In Attendance: Craig Nichol, Angela Bedard-Haughn, Nathan Basiliko, Elyn Humphreys, David Burton, Dan Pennock, Tom Yates, Katie Neufeld, Jacynthe Masse, Amanda Diochon, Brandon Heung, Mehdi Sharifi, Brian Amiro, Genevieve Noyce, Michael Carson, Adam Gorgolewski, Autumn Watkinson, Jessica Arteage, Emily Smenderovac, Ken van Rees, Lyndsey Andronak, Margaret Schmidt, Carolyn Wilson, Tim Moore, Darshani Kumaragamage, David Kreosch, Gordon Price, Asim Biswan, Maja Krzic

Meeting Agenda

- 1) Update on Soil 4 Youth Program – Maja Krzic
- 2) International Year of Soils – Maja Krzic
- 3) Envirothon – Paul Hazlett
- 4) Survey of Canadian Undergraduate Soil Science Courses – Amanda Diochon
- 5) Open Floor Discussion

DISCUSSION

Update on the Soil4Youth Program (Maja Krzic)

- Soil 4 Youth program continued its collaboration with provincial science teachers associations and Envirothon (see below for details)
- In Sep 2014, Soil 4 Youth team applied for NSERC PromoScience funding to expand the Soil 4 Youth program, but was not successful. It appears that PromoScience funding is currently favouring projects geared towards under-represented youth, such as girls and first nations. In 2014, about 70% of projects that received funding were focused on these groups
- This year's PromoScience deadline for proposals is September 15th 2015

We are considering to put forward a new proposal, either this or next year, focusing one of these target groups. Hence, if you are interested to be on the team, pls email Carolyn Wilson (carolynnewilson@gmail.com) or Maja Krzic (maja.krzic@ubc.ca)

2015 International Year of Soils (Maja Krzic)

- There is a petition to Google (initiated by the SSSA) to have a Google Doodle on Dec 5, World Soils Day
- At the meeting, Maja circulated a letter for signatures. She sent the letter to Google on behalf of the CSSS Education Committee
- Individuals can also contact Google at proposals@google.com to ask Google to create a Google Doodle for World Soil Day (Dec 5, 2015). Personalize why YOU think soil deserves it's very own special doodle.

Update on Envirothon (Paul Hazlett)

- Envirothon is an annual academic competition for high school students held in the US and Canada on a regional, state, and bi-national level. The competition tests students on following subjects: (1) aquatic ecology, (2) forestry, (3) soils and land-use, (4) wildlife, and (5) annually-changing subtopic on relevant environmental issues.
- How can we get involved?
 - At the provincial level – find out Envirothon coordinators, and let them know you're interested (e.g. Ontario: Ontario Forests (<http://www.forestsontario.ca/envirothon/index.php>), Manitoba: <http://www.thinktrees.org/envirothon.aspx>, Envirothon BC <http://www.envirothonbc.com/>)
- In 2016, the Envirothon championship will be held at Trent University, Peterborough, July 24-29, 2016. The 2016 Current Issue will be ***Invasive Species: A Challenge to the Environment, Economy and Society***. The 2016 competition is organized by the Forests Ontario (www.ontarioenvirothon.on.ca/index.php/2016competition).
 - CSSS will sponsor a station at the 2016 Envirothon championship, which will entitle us (in addition to having CSSS logo on the championships banners, program, t-shirts, website) to develop 1-2 lesson plans, 1 activity sheet, and 1 fact sheet.

CSSS members interested to participate in development of this material should contact Maja Krzic (maja.krzic@ubc.ca).

If you are interested in volunteering at the 2016 North American Envirothon Competition in Peterborough pls contact Paul Hazlett (Paul.Hazlett@NRCan-RNCan.gc.ca) or Jessica Kaknevicus, Education Programs Manager, Forests Ontario (jkaknevicus@forestsontario.ca)

Survey of Canadian Undergraduate Soil Science Courses (Amanda Diochon)

- During last year, a working group led by Amanda Diochon, has surveyed Canadian universities and colleges that offer Soil Science courses
 - Results: 78 universities and 21 colleges have departments/units that offer soil science courses
 - 47% of universities and 34% of colleges offer at least one course
 - Most of these are in BC, Alberta, Ontario and Quebec, while there are fewer post secondary institutions that offer soil science courses in the eastern provinces
 - This geographic distribution is mirrored in K-12 courses teaching about soils
- Inventory of Soil Science Courses
 - 156 courses at undergrad level (with 'soil' in the title)
 - 57 intro, 99 upper level/advanced
 - 54% in Ontario and Quebec
 - 52 courses at colleges; 29 intro, 23 applied/advanced
 - Most in Alberta and Ontario
- Survey of departments
 - Our survey was modelled after the SSSA survey carried out in late 2000s
 - Sent to the departments/programs that offer Soil Science courses
 - ~60% response rate (pretty good!)

- University: the main departments were Geography, Environmental Sciences, and Natural Resource Sciences. Courses enrolled students mainly from NRS, Environmental Sciences, Geography, and Crop Science
- College: similar trends to university, with enrollments steady or increasing
- Currently, working group is preparing a manuscript outlining findings of this survey. In addition, Amanda will also present key findings at the SSSA conference in November 2015 in Minneapolis, MN
- Craig Nichol: Do you have information to the mode of instruction – for example, if the course includes field/lab time?
- Amanda: looked into if there was a lab component, but this information of teaching style was not in the survey
- One thing to consider re. expansion of the existing data already collected is to ask course instructors about their teaching style.

Dan Pennock's Book Proposal

- There are lots of soil courses taught by folks who are not soil scientists
- Most use Brady and Weil's book (The Nature and Properties of Soils) in their intro courses
- This is a great book, but it is very expensive and also focused on the US – the soil classification and all examples are based on the US system
- There should be an intro to soil science textbook based on Canadian examples and classification system
- This should be an ebook, and free
- Maja mentioned that the BC Ministry of Higher Education is currently promoting ebooks, and BCcampus has funding for open textbooks (see <http://bccampus.ca/open-textbook-project/>)
- Craig Nichol: Recently was a reviewer for chapter of an open textbook for a first year geology course. For more info see <http://bccampus.ca/open-educational-resources-oer-teaching-resources-bccampus/>
- Dan Pennock has offered to coordinate the writing of the book
 - Needs a group on soil organic matter and microbiology

If you are interested to get involved and have input to the structure of the book, pls contact Dan Pennock (dan.pennock@usask.ca)

Open Floor Discussion

- Jacynthe Masse: We need to consider opportunities to offer summer school/training courses in pedology
- David Kroetsch: this is a great idea! At the University of Guelph, there is a grad diploma course (offered by David & Richard Heck) on field soil inventory. The course includes a field component and inclusion of a summer camp would be a great addition
- Maybe we could develop a summer field course that could rotate across the country (i.e., in the West one year, in the East the next). Maybe we could consider having two “permanent” stations (one in the West and one in the East.
- Michael Carson: There is a summer field course like this at Colorado State University

- Gordon Price: training is important, but how many students would there be per year? Would this be sustainable? What about a broader field camp with pedology as a key component and different land-uses? This course should not necessarily be just for students but also for other professionals seeking to upgrade their skills. We should set the structure up first – what are the skills that will be marketable? What skills are being used inappropriately?
- David Kroetsch: In support of Gordon’s suggestion - this way we could broaden the reach of pedology. For example, wetland ecologists are using elements of pedology without really understanding them
- Maja Krzic: in BC there is a 3-day provincial course (organized through the Pacific Regional Society of Soil Science); hence, maybe we could expand on that field course
- Jacynthe Masse: There’s a good station in Quebec and at Queen’s that could maybe be used.
- Maja Krzic: One thing that was not followed up on much this year was transferring credits across universities; but maybe we could have a 2-week field course that students could take as directed studies. In order for this to work, it would need to be administratively simple for students to enroll to and obtain credits. For example, in BC Paul Sanborn (UNBC) offers a pedology course with a 3-day field component, pre-recorder lectures (posted in Blackboard course management system) and discussion via phone conference. Graduate students from other universities can enroll (and obtain credits) for this course through the Western Deans Agreement.
- Do we have a national inventory of online courses (was this a part of the survey?)
 - Amanda Diochon: It was not part of last year’s survey, but we could ask a follow-up question

David Kroetsch (David.Kroetsch@AGR.GC.CA), Jacynthe Masse (jacynthe.masse@alumni.ubc.ca) and Gordon Price (gprice@Dal.Ca) are willing to explore opportunities of moving forward the initiative. Hence, if you are interested in getting involved pls get in touch with one of them.