

## Minutes of the BC Environmental Articulation Committee May 8 – 9, 2019

### Attendance

Anna Tikina	BCCAT (by teleconference)
Trisha Jarrett	Camosun College
Cheryl Schreader	Capilano University
Ken Shaw	Coastal Mountain College
David Dick	College of the Rockies
Nathalie Vigouroux-Cailbot	Douglas College
Andrew Egan	Langara College
Susan Burns	MAEST (by teleconference)
Todd Redding	Okanagan College environment and geography
Rick Federley	Okanagan College WET program
Robert Macrae	Selkirk College, host and committee chair
Rena Vandenbos	Selkirk College
Brendan Wilson	Selkirk College and Chair of the School of Environment and Geomatics
Tom Pypker	Thompson Rivers University
Geraldine Jordan	Trinity Western University
Ed Hornibrook	UBC Okanagan
Tara Ivanochko	UBC Vancouver
Scott Emmons	University of Northern British Columbia
Michelle Rhodes	University of the Fraser Valley

**Location:** Selkirk College, 301 Frank Beinder way, Castlegar, BC V1N 4L3 and at the Selkirk College Silverking Campus on May 8, and on a field trip to the Nelson Hydro Upper Bonnington Hydro electric power plant and Brilliant Cultural Centre for lunch on May 9

**Minutes:** recorded by Robert M. Macrae

From 10:00 am to noon on May 8 there was a pre-meeting campus tour led by Robert Macrae and Brendan Wilson, both faculty of the Selkirk College School of Environment and Geomatics (SEG). The tour included computer lab B15, a general purpose and GIS computer lab used by School of Environment and Geomatics students. Samples of student GIS projects were on display. We visited G10, a biology lab where IEPT Applied Microbiology (IEP 266) labs are taught. Equipment and samples of equipment, mushrooms and lichens were on display. Notes on how students can cultivate oyster mushrooms were provided. We visited B12, one of Selkirk College's recently renovated chemistry labs where IEP 280 and IEP 281 (Environmental Chemistry and Water and Air Pollution Chemistry labs are taught). A lab demonstrating the collection of carbon dioxide from air using an impingement tube and back titration was on display. Copies of the method were available. We continued to the ARIC – Applied Research and Innovation Centre at the Castlegar Airport. A brief tour, presentation of the research, and teaching activities at ARIC were presented by Ian Parfitt.

### Welcome, and Call to Order

The business meeting began on Wednesday May 8 at 1:00 pm. BC EAC members were welcomed by host and BC EAC Chair Robert Macrae of the Selkirk College School of Environment and Geomatics, Rhys Andrews, Selkirk College Vice President Academic, and Tiffany Snaubaert, Dean of the School of Environment and Geomatics. There was an acknowledgement that the meeting was being held on unceded Indigenous territory.

There was a call to order. Attendance was recorded, minutes from the previous meeting were discussed (minutes are circulated in advance electronically, approved in advance of the annual general meeting, and posted on the BCCAT web site).

There was a discussion of the agenda, call for new business, and approval of the agenda as amended.

The chair advised:

- Susan Purdy sent regrets from the TRU biological and environmental sciences programs
- Marnie Branfireum and Jeremy Venditti sent regrets from SFU
- Georgie Harrison sent regrets from NIC
- Matt Dodd from RRU sent regrets
- Mike Rutherford from UNBC sent regrets and an institutional report posted on the shared drive.
- Olga Petrov from BCIT sent regrets
- Mike McPhee from the Douglas College Department of Geography and the Environment sent a report and his regrets. During the BC EAC meeting, he will be on a field trip to Iceland.
- Stefanie Duff from VIU may be on a leave. The BC EAC chair was unable to reach anyone at VIU regarding participation at the 2019 BC EAC AGM.
- Susan Burns of the BC Ministry of Advanced Education and Skills Training has assumed some of the duties of Linda Kaivanto and subsequently Tim Ewanchuk. Susan will participate in the meeting by teleconference.

### **Institutional Reports**

Institutional reports were presented as listed below. BC EAC members submitted reports in advance which were posted onto a shared online drive. Contact the chair for access to the drive. Themes that emerged during the meeting were: (1) GIS courses, programs, and fit within the Geography – Environmental spectrum; (2) creation and co-ordination of environmental field schools across the province situated in different ecosystems further to discussion from the 2017 and 2018 BC EAC meetings focusing on the value of experiential education; (4) faculty driven outreach initiatives to increase recruitment of domestic students, and (4) the development of green chemistry and environmental science lab curriculum.

1. Trisha Jarrett reported from the Camosun College Environmental Technology program. Her report is posted on the shared drive. The Camosun program has an enrolment target of 36 and experiences a high completion rate although current enrolment is low. The program offers a unique combination of university level and applied courses, several field studies courses, and a co-op and internship option. It has articulation agreements with TRU, RRU and UVic.

2. Ken Shaw reported from Coast Mountain College. His report is on the shared drive. Coast Mountain College, formerly Northwest Community College, has changed its name and is now rebranding to become “the college of choice for experiential place-based learning.” CMC has invested in training programs for faculty to develop stronger experiential teaching skills. The Applied Coastal Ecology (ACE) program has had an increase in enrolment primarily from international students from the Punjab. Domestic enrolment remains static. The ACE program will be undergoing a program review. ACE has established a number of relationships with community partners, and a boat to improve field activities. ACE has articulation agreements with UNBC and RRU. ACE is interested in participating in the development of provincial environmental field schools.
3. Susan Burns, Director of Technology, Arts and Science reported by teleconference from the BC Ministry of Advanced Education and Skills Training (MAEST). Her report is posted on the shared drive. There has been restructuring within MAEST. CleanBC has become a priority for the BC government. This aligns with post-secondary environmental programs. MAEST would like to see a “refresh” of programming related to CleanBC to accelerate this priority. There may be funding for curriculum development and new equipment to support programming related to CleanBC objectives over the next two to three years. Curriculum funding of this type has been limited over the past decade. Be prepared for calls for proposals in response to improving CleanBC labour market needs which may be professional upgrading rather than new skills training and Clean Tech.
4. David Dick reported from College of the Rockies. His report is posted on the shared drive. CotR and Selkirk College will each receive three million dollars from the Columbia Basin Trust (CBT) over the next three years to improve student experience. CotR is building a new 96 bed residence and has an increase in enrolment in its university arts and science programs. David was involved with outreach activities to increase domestic student enrolment at CotR. The outreach to local high schools appears to have been successful and has led CotR to update an existing Associate of Science degree in Environmental science. CotR hosted speakers from UNBC and the United Nation University on environmental DNA (eDNA) and water and climate security. David discussed chemistry course options for that program.
5. Cheryl Schreader reported from Capilano University. Her report is posted on the shared drive. Although Capilano does not offer an “environmental” program, it offers environmental courses through Geography and Biology. These environmental courses are popular and Capilano is considering a BA in environmental studies and an environmental field school. Capilano offers a non-credit speaker series called EarthWorks that is open to the community and has been exceptionally well received.
6. Anna Tikina from BCCAT reported by teleconference. Copies of the documents she discussed are on the shared drive. Anna requested BC EAC members ensure the courses pending articulation are articulated. There is a contact person at each BC post-secondary institution who oversees articulation so the procedure is to submit a course outline to the institutional contact person (ICP) with a request to seek articulation. The Joint Articulation Meeting (JAM) will be held in the lower mainland on November 1, 2019. Notably, BC EAC Committee member, Dr. Michelle Rhodes of the University of the Fraser Valley completed a BCCAT supported articulation project, *Issues and Challenges in Interdisciplinary Course and Program Transfer in BC* in January, 2019. Her report is posted on the BCCAT website.

7. Rick Federley reported from the Okanagan College Water Engineering Technology program. His report is on the shared drive. Rick is a chemist. Currently, the WET analytical chemistry course is the only WET course open to students not registered in the WET program. The WET program is seeking articulation agreements for its graduates into BSc Environmental Science programs. Rick is interested in working on a green chemistry curriculum project. The WET program is doing well in terms of enrolment, retention, career paths for its graduates, articulation agreements and international students.
8. Todd Redding reported from Okanagan College. Geography, Earth and Environmental Science Department. His report is posted in the shared drive. Enrolment has been good and is rising. Retention is >80%. OC has done some outreach work to increase domestic enrolment. Okanagan College Penticton is hosting the 2019 National Association of Geoscience Teachers (Pacific Northwest Section) Annual Conference June 25-27. Meeting information is available at:<https://nagt2019penticton.weebly.com/>. The chair will send a reminder closer to the conference date.
9. Geraldine Jordan reported from Trinity Western University (TWU). She submitted a revised report which is posted on the shared drive. Enrolment at TWU is rising. New residences and a business instructional building are being built. Enrolment in the Geography and Environment (GENV) Department is down slightly reflecting a change in the requirement for first year students to complete a lab course. The Geography program has gone under a review by both internal and external faculty. Findings are similar. A number of faculty and student research projects are in progress such as the production of a documentary of our outdoor field-based facilities for teaching and research at the Crow's Nest Ecological Research Area on Salt Spring Island, the TWU Ecological Study Area (ESA) on campus, and the Blaauw Ecoforest in the Township of Langley, BC.
10. Tara Ivanochko reported from UBC Vancouver. Her report is posted on the shared drive. The UBC Environmental Sciences specialization is administered through the Department of Earth, Ocean and Atmospheric Sciences. It involves two years of foundational science courses, an area of concentration, and "tools" courses. Transfer courses are most often accepted as "tools" and include courses such as GIS, field schools, modeling, field work, analytical chemistry, remote sensing, etc. at the discretion of the faculty reviewing the application for transfer. Otherwise, course transfer is on a course-by-course basis. UBC is undertaking a strategic review that will focus on inclusion, collaboration, and innovation. Much in the strategic plan aligns with environmental science curriculum – creating vibrant, sustainable environments; ethical engagement and exchange of knowledge and resources for everyone's benefit.
11. Tom Pypker reported from the TRU Natural Resources Sciences program. His report is posted on the shared drive. The BNRS program allows graduates to apply for professional biologist, forester and agrologist designation. Enrolment in both the undergraduate and masters programs are strong at approximately 55 entering the undergraduate program and 34 graduating. Tom focused most on the Natural Resources Sciences MSc program. There are between 3 to 17 graduates annually from the masters program with approximately 50 students enrolled. Faculty members are active in research with NSERC and other peer-reviewed research grants. The BNRS has articulation agreements in place to receive students from other post-secondary programs including two-year diploma programs.

12. Nathalie Vigouroux-Caillbot reported from the Douglas College Earth and Environmental Sciences program. Her report is posted on the shared drive. The Douglas Earth and Environmental Science programs are well subscribed. Douglas has a unique credit system. Three credit courses at most universities and college count as five credits at Douglas and associate degree programs are limited to 60 "Douglas" credits. There has been recent curriculum development in the lab component of the EAES 1207 (Intro to Environmental Science). There is interest in articulation into environmental science programs and potentially into an Advanced Diploma in GIS or BGIS program. The Douglas College Institute of Urban Ecology is an example of an outreach program that delivers environmental workshops to local youth in Vancouver area schools. It engages volunteers to participate in environmental monitoring.
13. Ed Hornibrook reported from UBC Okanagan. His report is posted on the shared drive. Enrolment within the Department of Earth, Environmental and Geographic Sciences is steady at approximately 150 undergraduate students and 25 graduate students. The Department is developing a minor in GIS and has created a new third year field course. The Department has received one million dollars in endowments to create four undergraduate scholarships. The Department has undergone external review and will respond over the coming year. Ed is overseeing the development of a new program, a Bachelor in Sustainability within the Department of Earth, Environmental and Geographic Sciences. UBC-O is looking at a track for students transferring from two year diploma programs and associate degree programs and anticipates scholarships for transferring students.
14. Michelle Rhodes reported from the University of the Fraser Valley. Her report is posted on the shared drive. A lot has happened at UFV. There are now two new degree credentials in Environmental Studies – one in environmental studies and the other in natural sciences. This has been a lengthy process. UFV is seeking articulation agreements for these programs. The Geography Department is now housed in the Faculty of Science, there is a centre for field-based and experiential education, creation of a Food and Agricultural Institute, partnerships with the Mission Community Forest and First Nations, collaboration with CityStudios, and recreation of the Shakespearean Gardens at the new Canada Education Park Campus that once existed at the Chilliwack campus.
15. Scott Emmons reported from UNBC. His report is posted on the shared drive. Scott's report is a paper on the proposed new Department of Geography BSc in Geospatial science program at UNBC. Scott walked us through the proposal, discussing the mix of courses, the software, and collaboration with external partners. The issue of saturation for GIS training was discussed. Presently, there is no other GIS program in northern BC. Further, the market study indicates that there will be increasing demand for GIS graduates across the province. Scott's report and the ensuing discussion suggest more time is needed to discuss and understand post-secondary GIS education.
16. Andrew Egan reported from Langara College. His report is posted on the shared drive. Andrew has replaced Katina Erdos as program co-ordinator. International student enrolment has risen while domestic student enrolment has declined at Langara. Permission has been obtained to continue to offer field schools at the Parks Canada Pacific Rim Park, to fly drones and map vegetation for a GIS exercise. Langara uses grants to purchase camping gear for students so they can participate in field schools. Funding obtained through donations has been used to build a new, stand-alone, GIS lab. The lab uses open-source software. Drew sees GIS evolving for social science applications. The relationship with CityStudio in Vancouver continues as an opportunity for student projects.
17. Brendan Wilson reported from Selkirk College. There is a Selkirk College report posted on the shared drive. Selkirk is interested in renewing course articulation agreements that have expired. In addition, the Selkirk College School of Environment and Geomatics now offers a BGIS degree program and is seeking transfer students from associate degree programs in environmental science

and geography and environmental technology diploma programs. Selkirk College is also interested in participating in an environmental field school program.

## **Other events and Field Trip**

On Wednesday May 8, after the business meeting, members attended the keynote address delivered by Eva Schindler, of BC FLNR at a Columbia Mountains Institute of Applied Ecology conference in Nelson, BC. Dinner followed at the Hume Hotel. On Thursday May 9, the business meeting concluded followed with a field trip to tour the Nelson Hydro Upper Bonnington power plant. Lunch was a traditional Doukhobor meal at the Brilliant Cultural Centre. Discussion ensued regarding the meeting and plans for next year's meeting.

The consensus was to post institutional reports on a shared drive for members to read and to focus on a small number of topics. Suggested topics are:

- GIS
- Environmental field schools representative of different provincial ecosystems and hosted by different BC EAC member institutions
- other

The chair will circulate an online poll to solicit other topics.

## **Post meeting comments**

After reviewing the draft minutes, David Dick provided two comments that belong in the “other” category above. David’s comments are, “I’ll also re-read Michelle’s report posted at BCCAT regarding transfer in the environmental programs. I think I’d like to see two things discussed at next year’s meeting. (1) Are people willing to post (or share) their syllabi for environmental studies and environmental science courses so we can see what we’re teaching, and (2) would it be possible or desirable to develop a common core of courses (as is being done in Engineering, see <https://www.bccat.ca/pubs/engineering-common-core-final-report-with-amendments-nov-13-2018-v113>) so students could take their first year in environmental science and use block transfer to enter second year environmental sciences at receiving institutions.”

## **Next Meeting**

Next year’s BC EAC meeting will be hosted by UBC Okanagan. The chair will circulate an online poll to determine the preferred meeting date after determining the dates of the FPSE AGM, CCUEN AGM, and the Geography and the Biology articulation committee meetings. One day will be dedicated to a business meeting and the second for field trips. The business meeting will follow a revised format as discussed previously.

Thank you for your participation

## **Meeting Adjourned**

Adjournment: The BC EAC concluded on Thursday May 9, 2019 3:30 pm.