

**CHEMISTRY 2021 ARTICULATION MEETING (by videoconference)
BRITISH COLUMBIA COUNCIL ON ADMISSIONS AND TRANSFER**

Meeting Host: Shirley Lew

Chair and Secretary: Todd Stuckless

Committee Liaison: Margaret Heldman

BCCAT Representative: Mike Winsemann

School Representatives:

Institution	Name	Institution	Name
Alexander College	Miriam Grob	Northern Lights College	Cindy Broberg
BC Institute of Technology	Jimmy Lowe	Okanagan College	Leonard Lermer
	Jennifer Wolf	Selkirk College	Allyson Perrott
Camosun College	Neil Meanwell	Thompson Rivers University	Bruno Cinel
Capilano University	Mark Vaughan	Simon Fraser University	Evon Khor
Coast Mountain College	Reto Riesen	Trinity Western University	Paul Brown
	Van Nguyen		Miriam Buschhaus
College of New Caledonia	Lyndia Susag	UBC – Okanagan	Tamara Freeman
Columbia College	Joanna de Witt	UBC – Vancouver	Andrew MacFarlane
	Taraneh Lajevardi		Vishakha Monga
	Hema Giesbrecht		Jay Wickenden
College of the Rockies	David Dick	University of Northern BC	Todd Whitcombe
Douglas College	Paul O'Connor	University of Victoria	Violeta Iosub
Fraser Intl College	James Zhou	Vancouver Community College	Diem-Ly Van
Kwantlen Polytechnic	Patrick Duffy	Vancouver Island University	Duane Friesen
Langara College	Yanguo Yang	Yukon University	Ernie Prokopchuk
North Island College	Sherrie Wang		

1. Call to Order

9:05 am, Meeting Chair Todd Stuckless

2. Welcome – Shirley Lew, Vancouver Community College, Dean of Arts and Sciences

- Dean Lew opened the meeting with acknowledgement of the unceded territorial rights of the Musqueam, Squamish and Tsleil-Waututh nations, and gratitude for their hosting of VCC on traditional lands.
- She thanks the chemistry faculty and staff of VCC, and of all our schools, for their extra efforts to provide laboratory education during the pandemic.

3. Presentation by BCCAT Chemistry SLP: Margaret Heldman

- Margaret reinforces the importance of the Province's covid vaccination program for our return to the post-secondary workplace.
- Gives assurance that the provincial Senior Academic Administrators Forum is actively working on learning continuity for the Fall. Points out that different programs in different locations might have very different concerns in respect to that return. The learning continuity committee includes representation from a variety of schools, also student unions, and indigenous representation.
- Link supplied to [post-secondary study during covid 19](#)
- IE students will all be eligible to receive vaccine.
- Link supplied to BC [return to campus primer](#)
- Margaret asks the committee to consider on-line education in a broader context than the pandemic response.
- She is also working on our behalf as a member of the new pan-Canadian Consortium on credit transfers between schools in different provinces.

4. Presentation by BCCAT representative: Mike Winsemann

- Link supplied to [BCCAT Spring Update](#)
- BCCAT has been active lately with development of micro-credentials
- The transfer guide now includes transfers between provinces and countries!
- Expresses concern that many transfer agreements within BC have more than 10 years old since their prior articulation, including 100's of within chemistry alone, and that even 5 year old agreements may warrant reconfirmation in some subjects. BCCAT may start sending out prompts to schools.

- In discussion, it's pointed out by the committee that mode of delivery of lectures is considered as not needing articulation. It's not clear to the meeting chair whether exam weight and invigilation are independent of articulation.
- Mike invites committee members to attend the PCCAT on-line conference June 17
- BCCAT feels the 2020 Joint Annual meeting held on-line was a success, and it will be on-line again November 2021, and with open attendance for all interested committee members.
- Mentions that some articulation committees may have in-person meetings as early as Fall 2021.

Institutional Reports are located on the BCCAT Chemistry Articulation Committee Moodle

5. Institutional Reporting and Roundtable Discussions (9:55 am)

University of British Columbia - Vancouver

- Jay Wickenden gives rundown on UBC-V lab procedures over the 20/21 academic year. In particular, in Spring semester gen chem 1 labs were virtual, gen chem 2 labs were a hybrid of virtual and on-campus. The 2nd year organic labs were run on-campus, at half capacity, with five f2f labs on alternating weeks. Over the summer, on-campus laboratory sessions will be run as bootcamps with 2.5 days of lab work per section, so that students missing labs in the previous Fall, including 2nd year analytical, can catch up.
- No plans at this point to reinstate f2f engineering chemistry labs.
- Andrew MacFarlane notes that UBC's intention is to return to the chem121/chem123 lab structure that was in place before the pandemic, as soon as practical. Bruno Cinel asks if gen chem 1 courses with virtual labs will still transfer. Andrew responds that UBC's intention is that while those transfers are accepted for now, that will not be on-going, and will be reviewed as public health considerations diminish. Sherrie Wang asks about minimum number of wet lab hours needed to have a hybrid transfer. Andrew says UBC will need to set up that policy for the future.
- There is discussion within the committee regarding engineering chemistry, and the acceptance of gen chem 1 in its place. Members state their plans to carry on with regular labs for the engineering chemistry course. Todd Whitcombe suggests the engineering course as a future meeting topic.

Simon Fraser University – Evon Khor

- SFU made no changes in the articulation of its 1st year courses, having previously introduced gen chem with separate lab and lecture courses. They have introduced new 2nd year analytical and organic courses that have similarly separated lecture and lab courses.
- Are offering lab courses as bootcamp sessions during the Summer term, with 5 labs over 6 weeks, to make up for lab courses having been cancelled.
- Will also offer gen chem 1 sections with only virtual labs in the Summer term. Hope to have regular on-campus gen chem 1 labs for the Fall, though lecture courses may be on-line.
- Patrick Duffy asks if Summer SFU chem courses will have on-campus final exams. Is told they won't.

University of Victoria – Violeta Iosub

- All gen chem labs last year were virtual, using the Labster platform.
- Lectures were on line using Brightspace platform for exams.
- Much effort was spent towards academic integrity, by monitoring of IP addresses, randomizing and watermarking of exams, etc.

University of British Columbia Okanagan – Tamara Freeman

- Will run bootcamps early September to prepare students as needed for upper level courses. Might also increase the duration of the on-campus labs to 4 hours.
- Want to remain flexible for now with accepting virtual lab credits, but with intention to clamp down as the pandemic situation permits.

University of Northern British Columbia – Todd Whitcombe

- UNBC is currently accepting 1st year virtual labs for transfer, with no issue.
- Points out students are expressing preference for f2f labs.
- On-line courses at UNBC have had very high attrition. Similar experience is expressed by committee members

6. Round Table Discussion of reports:

- Outside of the lower mainland, colleges generally ran with fully f2f labs. NIC used hybrid f2f and virtual. Langara, Columbia and others, did run some 100% virtual gen chem 1 sections.
- Most colleges down-weighted their labs and final exams in grading, with more weight to tests and mid-terms. Todd Whitcombe points out labs have often traditionally been a way for students to boost their grade. Some members reply that their courses do have a mandatory requirement to pass the lecture component, not just overall.
- Miriam Grob asks about home labs. Bruno reinforces that that the TRU-online kits are not “kitchen chemistry”, they are expensive, and can’t be shipped overseas! Jimmy Lowe points out also the liability issue, and potential inequity in student access to an appropriate work space. Duane Friesen supports remote labs, points out new technologies, such as a smartphone’s capability as a working colorimeter.
- Committee acknowledges the burden facing lab courses next years, bringing last year’s high-school and first-year students up to speed. Bruno points out that on-line supplementation of f2f labs can help.
- Jennifer Wolfe raises the topic of f2f final exams, noting that TRU on-line have traditionally required f2f exams for on-line courses. Lyndia Susag notes that CNC held on-campus exams for their courses which had been moved on-line during the pandemic. Duane notes that VIU had f2f final exams for the Spring term
- Duane asks how GPA’s have changed with on-line instruction. The result at VIU for their f2f exams was generally poor, with a non-gaussian distribution. David Dick had similar experience at COTR, with f2f exams after on-line courses. Bruno notes that his on-line grades have shown a bimodal split. Other members note having a higher attrition even if that’s not apparent in the grades.
- Cindy Broberg reinforces the committee’s concern regarding invigilation. More discussion of invigilation techniques ensues, eg watermarking papers by making questions slightly different, video invigilation (with privacy and tech requirement concerns), student pledges, and even oral exams. There was discussion of CHEGG, and concerns that students could actually be vulnerable to data theft and even blackmail.
- Reto Riesen continues discussion regarding on-line labs for the Fall semester. Schools reliant on IE students, such as FIC, Columbia and Langara, note travel restriction uncertainties for the Fall.

Lunch .

7. Committee Business

- Todd Stuckless motions that the committee Chair position be regarded as a renewable 3-year fixed term. The motion passes by consensus. He notes that 2022 would be his 3rd year in the position, but that he intends to put himself forward as a candidate for a 2nd term. He points out that there are many committee members who would be well suited to Chair, and for whom it could serve as professional development or for resume building.
- The 2022 meeting is discussed. There is wide agreement to have a face-to-face meeting at COTR. But that we should investigate how to effectively enable remote participation.

8. Open Forum

- Discussion of post-pandemic online delivery, and institutional vs instructor vs student concerns. Committee members express a cautious approach. Finances are important, NIC had lay-offs. The Province's financial review is soon. Labs are expensive but safety, situational awareness and the myriad of hands-on-skills required for professional chemistry, are unlikely to be gained effectively by video. UBC notes that a Chemistry B.Sc program accreditation requires at least 400 chemistry lab hours (and 600 lecture hours).
- It's pointed out that schools are saving much money in printing costs, etc. Financials are important, NIC recently had lay-offs. The Province's financial review is soon. And of course office space is a critical issue Andrew points out that student housing is an important revenue stream for universities.
- It's noted that campus life, including living in residence but also just meeting new people, has been a very important part of many people's lives.
- It's asked whether live lectures will be recorded for hybrid delivery. And whether the instructor would maintain IP rights for recorded material (policies on this seem to vary between institutions).
- Concern is expressed regarding inequity in the student's access to computers and other devices, and the space and living arrangements needed for effective on-line participation.
- How best can we evaluate the relative effectiveness of on-line teaching?
- Evon suggests that student polling indicates that there is strong student demand for f2f learning. Paul points out that on-line content will likely continue to supplement f2f, eg pre-lab safety quizzes, instructor office hours, missed classes, etc.
- At Douglas, instructors are being asked to submit requests to move courses on-line to the VPA, with a long-form description of methods and benefits.

- It's noted that over the course of the pandemic, many final exams have become widely circulated. Extra work refreshing them will be needed in the years ahead.
- There is some discussion of the Open Stax textbook for gen chem, compared for example to Petrucci. There is general agreement that it needs supplementation with more advanced material, to meet the level of the BC curriculum.
- There is some discussion of student evaluations, where it's noted that several institutions in Canada, including SFU, have been moving away from SRI's. This after a York University case where it was found that student comments, and perhaps scoring, often had racist and sexist overtones!

9. Meeting Adjourned 2:30 pm