

THE BRITISH COLUMBIA COMMITTEE ON THE
UNDERGRADUATE PROGRAM IN MATHEMATICS AND STATISTICS
BCCUPMS

MINUTES OF THE 100th MEETING, May 17-18, 2022

held at University of British Columbia, Vancouver campus (in-person and online)

TUESDAY, May 17, 2022

1. Welcome and Opening Remarks

Ian Affleck (Chair) welcomed the in person and online participants to the 100th meeting. Made a territorial acknowledgement of the land situated on the traditional, ancestral and unceded territory of the Musqueam people. Also, it was agreed that online voting was to occur virtually by raising “hand” in ZOOM where not raising a hand signifies a “yes” vote.

1.1 Welcome from the Host Institution – Meigan Aronson, UBC Vancouver Dean of Science

Welcomed the articulation members and acknowledged the 100th milestone meeting and the important work they do.

Plenary Session #1

2. Adoption of Agenda

The chair shared the screen to view the agenda.

Motion: That the agenda for the 100th meeting be approved with the amendment of adding item *Flexible Pre-Major Survey* into the section “Matters Arising”. M – Justin G. S-Eugene B.

Approved.

3. Approval of Minutes of 99th Meeting held by Zoom, May 11 & 13, 2021

Motion: That the minutes of the 99th meeting be approved with the amendment of moving 1st sentence in section 12.2 to section 7.2.

Approved.

4. Announcements

4.1 Introduction of Representatives

Chair scrolled down ZOOM participants list and invited individuals to introduce themselves. Round table in-person members also introduced themselves.

4.2 Notice of election.

Notice of elections: at this meeting, elections for the Chair and Stats Subcommittee Chair of the BCcupms will be held. These have two-year terms. Formation of a Nominating Committee for math was formed (Natasha Davidson-Douglas College and Susan Feldberg-TRU).

4.3 Conferences

- Justin Gray (SFU); **Changing the Culture**, sponsored by PIMS (free registration). Shorter conference this year. <https://www.pims.math.ca/educational/changing-culture>

- Susan Oesterle (Douglas College); Canadian Mathematics Education Study Group, May 27-29. www.cmesg.org

- Bruce Dunham (UBC-V); **Statistical Society of Canada (online)**

Monday, May 30, 2022 to Friday, June 3, 2022

Registration end date: Wednesday May 25, 2022 at 11:59 PM PDT

<https://ssc.ca/en/meetings/annual/2022-annual-meeting>

- Ian Affleck (UFV); **Canadian Undergrad Math Conference CUMC**,

<https://cumc.math.ca/2021/> Aug 19-22. <https://www.maa.org/meetings/mathfest>

- **CMS**, June 3-6, <https://summer22.cms.math.ca/>

- Melania Alvarez (UBC); **Indigenous Math Symposium**

<https://indigenous.mathnetwork.educ.ubc.ca/symposiums/2022-symposium/>

- Changing the Culture Conference

<https://www.pims.math.ca/educational/changing-culture>

- Ian Afleck (UFV) 2022 Turtle Island Indigenous Science Conference (in person -

pending public health restrictions). June 14 – 16, 2022. University of Manitoba,

Fort Garry Campus – [https://news.umanitoba.ca/2022-turtle-island-indigenous-](https://news.umanitoba.ca/2022-turtle-island-indigenous-science-conference/)

[science-conference/](https://news.umanitoba.ca/2022-turtle-island-indigenous-science-conference/)

- Gaitri Yapa (UBC) 2022 SALTISE CONFERENCE. <https://www.saltise.ca/saltise-conference/>

- Gaitri Yapa (UBC). Online Speaker Series: Teaching & Learning in Science through the Lens of Indigeneity, Equity, Diversity and Inclusion. Monday, June 6, 2022 | 12:30pm-2:00pm

Igniting the Sparkle Circle Sharing: Teaching mathematics with Indigenous perspectives, practices, and pedagogies: What are we learning
<https://payment-educ.sites.olt.ubc.ca/indigenous-math-symposium-2022/>

2022 SALTISE CONFERENCE (hybrid)

The 2022 Conference will be in a blended format: in-person and online, June 2-3, 2022
THEME | Collaborative Dialogues: The Role of Active Learning in Today's Educational Realities

<https://www.saltise.ca/saltise-conference/>

15 minute break

Plenary Session #2

5. Reports

5.1 Ministry report was not received.

5.2 BCCAT-Mike Winsemann (Director, Transfer & Technology) (In person)

Highlights of the presentation were:

- BCCAT's mandate which is to encourage institutions to develop policies and practices regarding the transferability of post-secondary credit and to facilitate the development of credit transfer arrangements through oversight of articulation committees.
- Most meetings continue to be held online, with 1/3 opting for F2F or hybrid
- Return to travel has raised questions about who pays for travel
- Position of both AEST and BCCAT that the cost for travel to attend articulation committee meetings is built into the base operating funds of the institution
- Continuing to monitor the situation
- BC Transfer Guide Updates include expansions:
 - o Over 70,000 non-BC and International Equivalencies added
 - o Adult Basic Education Search Interface
 - o English as Additional Language Search Interface
 - o Re-design of the BC Transfer Guide
- Major Q1 release will see the creation of a departmental interface for faculty evaluators. This will provide insight into performance, pending requests, and agreements that are overdue for review.

- Research Updates include:
 - Reverse Transfer h
<https://www.bccat.ca/pubs/Reports/ReverseTransfer2022.pdf>

 - Covid-19 and Transfer
<https://www.bccat.ca/pubs/reports/CovidandTransfer2021.pdf>

 - Pathway Partnerships with Indigenous Post-Secondary Institutions
<https://www.bccat.ca/pubs/reports/PathwaysPartnerships2021.pdf>

 - Exploring Students' Motivations for Credit Accumulation
<https://www.bccat.ca/pubs/reports/StudentMotivations2021.pdf>

- Joint Annual Meeting 2021
399 registrants (most ever). Presentations focused on Academic Integrity, Indigenous Fluency Degree, Technology Roadmap, Reverse Transfer, Impact of Covid-19 on transfer practices. All sessions available at BCCAT YouTube JAM 2021 playlist

- JAM 2022 will be hybrid on Nov 3 –4, 2022 allowing for both F2F (Vancouver) and online attendance.
- BCCAT Spring Updates
<https://www.bccat.ca/pubs/Resources/ACUpdate202204.pdf>
BCCAT Transfer Awards
 - Recognition program for individuals or groups who have demonstrated exemplary leadership in the BC post-secondary system
 - Award categories for Leadership, Rising Star, and Lifetime Achievement. Deadline for nominations is August 31, 2022
 - <https://www.bccat.ca/about/awards>

- Upcoming Projects
 - Course Definition Guidelines for inclusion in the BC Transfer Guide
 - Currently reviewing which courses should be included in the BC Transfer Guide
 - Over the years, the definition of what constitutes “university transfer” has evolved, and this has raised the question of whether the current practice meets the needs of mobile students
 - Several surveys have been sent out to the articulation community, along with registrars and academic leaders

- Are there areas within your discipline that are not currently included in articulation practices that you feel should be included?

Ian A. (UFV). Suggested the possibility of separate funding for Math and Statistics.

Q. Eugene B. (Langara College). Inquired if BCCAT can notify directly the articulation representatives.

A. Mike W. (BCCAT) replied that this is not possible as BCCAT does not know the current Math representative for each institution as the reps change all the time.

Q. Ian A. Inquired how cross-listed courses can have an issue as they can sometimes be treated differently across departments.

A. Mike W. (BCCAT). Acknowledged that this is an issue, and some times he checks for transferability with other departments.

5.3 BCcampus – Clint Lalonde, Project Manager, Open Homework Systems (OHS) (online)

Main highlights from Clint Lalonde's presentation (online)

- OHS Goals and Deliverables

- Replace high use, high-cost commercial homework systems used within the BC post-secondary system with open-source alternatives.
- Develop discipline champions and communities who can further steward the open-source options once the project ends
- Inform and educate system about financial costs of homework systems on students.

- WebWork is a mainstream OHS for STEM courses and H5P for non-STEM courses.

- Two WebWork institutional grants were awarded to Vancouver Community College and Thompson River University.

- Additional STEM Projects

- Organic Chemistry Workbook of 240 questions using ChemSketch (OSS) Resources (VIU)
- Set of 90 WebWork questions (BCIT)

- Set of PrairieLearn questions to align with open book UBC mat textbooks CLP-1 and CLP-2 (UBC)
 - Set of PrairieLearn questions to support physics curriculum (UBC-O)
 - H5P projects from various institutions.
- 30 million dollars in student savings, 5860 open textbook adoptions, 200 open textbook projects. 396 open textbooks; 172 in Math & Stats.
 -
 - Open Textbook Adoption Finder
https://docs.google.com/spreadsheets/d/1PiYkQQOgTTrI77J9-sO9HkqdX7c5BtEL_A5F9Yc3Wk/edit#gid=0
 - Course Materials for Educators can be found at collection.bccampus.ca

Q. Natasha D. (Douglas College). Do students have the same access to the websites?

A. Clint L. Students do not have access to the assessment materials.

Q. Susan Chen (Camosun). Is WebWorK OHS connected with the open textbook?

A. Clint L. This is a typical question and currently there is no direct connection between the two.

Susan C. (Camosun). Suggested if there could be any funding to do this connection.

5.4 PIMS – David Leeming (online)

The Pacific Institute for the Mathematical Sciences (PIMS) has allocated funding for Colleges and Universities in British Columbia and Alberta that do not have PIMS Membership under another category. Ivar Ekeland, former Director of PIMS established the PIMS Education Associates Program in 2008. Former PIMS Director Alejandro Adem was a great supporter of PIMS initiatives in math outreach and is responsible for the current model for the PIMS Education Associates.

Currently, there are thirteen Associates in BC and four in Alberta. We would welcome more Associates – and would encourage anyone interested to contact me. There is no annual fee. The Education Associate agreement with PIMS remains until one party terminates.

The Covid pandemic has meant that there were no draws on the PIMS Education Associates funding last year. Therefore, I did not request Reports from our PIMS

Associates this year, although I know many of you were involved in Math outreach with contests in schools, etc. so I will request Reports next spring. It is important to include the number of students involved in your activities.

This year there has already been three requests for funding, with more expected. I would just like to mention one example of the impact of the PIMS Associates funding this year. Mount Royal University (Calgary) Math department organizes the Calgary Elementary School Math Contest (CESMC). They are requesting PIMS support this year as there were 3200 students writing the contest.

Suzanne Feldman reports that, in BC, 550 students wrote the preliminary round and 180 students participated in the final round of the BC Secondary School Math Contest.

If your institution is a PIMS Education Associate and you are considering a funding request, please contact Davis Leeming and he can help you with reimbursement of eligible expenses up to \$500.

5.5 Adult Basic Education – Costa Karavas (VCC) (In person)

Main highlights from Costa's presentation

1. Adult Basic Education (ABE) working groups function as articulation committees and exist for a number of disciplines. Each working group reports to the Adult Basic Education Steering Articulation Committee. Working group chairs attend the meetings of both their working group and the steering committee each year.

- The ABE Steering committee articulates courses in various subjects and levels against well-defined learning outcomes contained within the ABE Articulation Handbook. This handbook is published each year by the Ministry of Advanced Education and Skills Training and is available on the BCCAT website.

2. Adult Basic Education Articulation Handbook in the BC Transfer Guide

In 2021 BCCAT completed a project whereby the ABE articulation handbook was moved into a proper database to enable for a searchable guide in the BC Transfer Guide (now available at <https://www.bctransferguide.ca/transfer-options/adult-basic-education>). This included course equivalencies from 2020 onward. Currently, BCCAT is collecting from the various articulation groups updates to course listings in 2022.

3. ABE Math Articulation 2022

The ABE Math articulation committee meets once a year. In 2022, the meeting was held in March 3-4 via ZOOM.

- ABE institutions brought forward courses that needed to be re-articulated.
- Krista Lambert, project manager, ABE/Health Zero Textbook Cost Programs, BCCampus presented new online math textbooks (openstax).
- Discussion of online delivery, assessment and testing software.

5.6 Changing the Culture Conference (Friday, May 20, 2022). Justin Gray

This year it will be a shorter conference. - Changing the Culture Conference
<https://www.pims.math.ca/educational/changing-culture>

Break for Lunch at 12:15 pm.

Keynote Address

Leo Neufeld and David Leeming gave a comprehensive presentation of the historical evolution of the BCCUPMS committee in tribute to the 100th annual meeting. Reference to past members and committee issues were presented, and the important work the committee has and is currently doing with respect to articulation and student mobility.

Break

Plenary Session #3

6. Matters Arising from 99th Meeting

6.1 Justin Gray's Flexible pre-major Survey

BCCAT will not maintain the Flexible pre-major info on its website. BCCUPMS will take this on. Hence the survey with goal to list info so students will have a way of getting informed on which institutions are offering Flexible Pre-majors in math.

Ian: Last call for institutions to participate in the survey. All the info will be synthesized into a master word file. Ian will ask BCCAT if they can host this information or will be put on the BCCUPMS website.

7 Institutional Reports(highlights) Part 1

Institutions in alphabetical order outlined highlights from their reports.

Break

Plenary Session #4

8 Institutional Reports(highlights) Part 2

Technical issues were encountered with virtual participants connection. Resolved within 10 minutes. No content was missed.

Greek Dinner 6:30 PM Nostos Taverna, 3162 W Broadway, Vancouver, BC V6K 2H3

BCCupms Meeting – Day 2 Wednesday, MAY 18, 2022.

The chair shared the agenda for Day 2, opening the meeting by welcoming the participants.

Plenary Session #5

9 Committee Business

9.1 Webmaster's Report

- Ian took after Leo Nuefeld who initially created. Ian gave a brief overview of the current BCCUPMS website. Members page has now only email (no telephone or address). Discussed about the website needs, what it has and what it lacks. Currently it is hosted locally, but could be as a Moodle website.
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- Brian (UBC-V) suggested perhaps PIMS can be the host entity.
- Mateen Shaikh(TRU-Statistics) suggested Wordpress as a host and domain name.
- Erfan Zahrai (CMC): Computing Science Articulation (BCCAT) uses Moodle to host their website.
- Jane Butterfield (UVIC) Moodle is “closed: requiring credentials username and password to enter and makes it less accessible for students and others who want to view the site.
- Eugene B (Langara) Agrees with Jane.

- Costa Karavas (VCC). Another issue that needs to be taken into account is the maintenance of the BCCUPMS website if perhaps the current chair is no longer webmaster of this website.
- Ian (UFV) suggested a committee is struck to explore all options of the BCCUPMS website, irrelevant if Ian will continue as webmaster or not. Call for a committee. The members of the BCCUPMS website committee are: Stephen Brown (Okanagan), Ben Vanderlei (UFV), Natasha Davidson (Douglas), Suzanne Feldberg (TRU), Asia Matthews (Quest), Michael Nyenhuis (KPU).

9.2 Report from Nominating Committee and Election(s)

Asked attendees to consider the position of chair.

Break

9.3 Location, Dates, Agenda items for 101st Meeting

- Ian A. (UFV): Tentative offer from Quest University as a hybrid meeting for May 16-17, 2023.

9.4 Proposed Dates and Location for 102nd Meeting

- Natasha Davidson (Douglas College): Douglas College was proposed for the 102th meeting in 2024.

9.5 List Updates

Email Ian Affleck and Jane Butterfield for any updates to the listserv.

Gaitri Y (UBC-V): Inquired to add P.L.O.M. (Paperless Open Marking).

Ian A (UFV): added as item 12.2

Break

Parallel Session #1

10. Math Break-out Discussion Part 1

10.1 What's new with (open) textbooks and online HW systems? –

-Eugene B. (Langara): Not a big fan of open textbooks. Instructors can provide their own exercises.

-Natasha D. (Douglas): Students incur many expenses, so open textbook provides a big help. The choice lies with the individual instructor on what assessment methodology they want to use in their course(s).

-Ben V. (UFV): Students can find older versions of textbooks online. Using Stewart for calculus. Using WebWork which has a vast number of practice exercises. It is a bit of work to go through the large amount of exercises that exist. There is the limitation of getting the exercise wrong if the final numerical answer does not match the correct one.

-Justin G. (SFU): Homework systems can be classified into three categories. 1) Publisher's homework system. They have put a lot of effort and resources to these and have large test banks. Can be quite expensive. 2) open-source systems. Free for students, large depositories. Limitation in integrating with learning management systems. 3) Subscription fee model. Low cost. An example is Mobius (\$25 + GST) per year, independent of number of courses. Error free, good number of exercises. Bolster is also another option.

-Ian A. (UFV): Students can use older versions of textbooks and use homework systems.

-Jane B. (UVIC): Gave a demo of WebWork. Few exercises provide feedback to the students, as they were coded as such. PrairieLearn provides a better interface than WebWork. Raised issues of long term support and security. Talked about Tophat and Mobius.

-Natasha M (VCC): Cost for students should always be a deciding factor for homework systems as many students work part-time and go to school and costly home-work systems constitute a barrier for them. H5P is a good system for relating concepts. Mobius is sometimes "buggy". Customer support is good but takes a long time to respond.

- Wayne B. (UBCO): Students are faced with paying for the homework system beyond their tuition. This may constitute an issue. Only the answers are provided and not the detailed solution. For MATH 101 used for completion marks. Challenge of assessments for large classes. Openstax had many errors. Some topics are not logically placed in some chapters.

-Ana C. (Columbia College): Homework systems are set at the department level. The cost for Precalculus is \$50.

-Erfan Z. (CMTc): Openstax is used for Precalculus and Calculus. Collaboration amongst students done with the use of third party app. Asked if institutions can collaborate on WebWork. It was noted to research the American Mathematical Association.

-Michael N (Kwantlen): Assisted in the setup of the WebWork server at Kwantlen. Familiar with setup and IT requirements. Looking to find suitable OER texts for all intro courses.

-Ian A. (UFV): In summary, the connection between open-textbooks and assessments is not definite. There is no current holistic solution and through this discussion, institutions can be informed and do further research and adopt what works best for their courses and institutions.

-Jane B. (UVIC): many e-texts are eliminating physical copies of their textbooks. Many times it is difficult to read the online e-texts.

-Natasha D. (Douglas): Agrees that reading online is difficult and can create cognitive issues to students.

-Deanna B. (Capilano): Capilano has a in-house print shop that can print copies and bind to create physical copies.

-Jane B.(Uvic): Always need to be careful on bookstore profits of open-source texts.

Lunch hosted by UBC.

10.2 What's new with Drop-in help centres / open labs?

-Justin G. (SFU): SFU has open help clusters of workshops (Calculus, Algebra/Discete/Precalc, Foundations/Math for Teachers). Separate spaces with office hours, TA's help students work together, get marked work back. There is a drop in the usage. Other help could be providing assistance to students, such as Chegg and Discord. They provide more flexibility as they are online. Experiment in Precalculus: students

signed up for regular “problem solving” clinic (for extra marks) randomly assigned groups to work on questions-would get feedback-only marked for attendance. TA’s would circulate, help if students were stuck. Still had drop-in hours, but reallocated space for some time period. Materials provided by instructor, extra challenging because of collaboration and support. Students felt it helped them identify where they needed help. It is an ongoing experiment on how they can increase the number of students working in groups and come more often. Thinking of expanding number of courses and scope.

-Paul (Capilano): When students think it’s a study space (with help) it seems way more successful (more used) especially for engineering student groups. Staffed by faculty. Usage has increased and are back to a larger space.

-Natasha D. (Douglas): Math lab is funded by a fee (included with math tuition). Math tutorials are run by TA’s. They collect their marked work from math lab, so they come in person. ‘Field trips’ to the space encourages students to go to the Math lab. Mathematics for Teachers students use the Math lab more.

-Jane B. (UVIC): They have a fulltime coordinator from Learning and Teaching Centre, rest are TA’s. Most courses have dedicated tutorials/labs separate from the Help centre. There are two to three tutors available at a time. Encourage students to use a study space. If there is a question that will be collected and marked, tutors divert question to the professor. Have used Microsoft TEAMS for online. Have had lower requests than usual. For the Fall term, support will be in-person as it is more popular than online.

-Natasha D. (Douglas): Asked if UVIC all face-to face instruction?

-Jane B(UVIC): Yes.

-Justin G.(SFU): Asked if students used tablets for online help?

-Jane B (UVIC): Yes.

-Suzanne F (TRU): What OER for precalculus review?

-Jane B (UVIC): provided website link.

-Brian W. (UBC-V): Canvas post WebWorK self-guided.

-Ian A. (UFV): Kseniya Garaschuk from UFV provided a two-week catchup course.

-Ben V.(UFV): WebWorK Calculus Readiness test can help students identify weaknesses.

- Jane B (UVIC): Suggested idea of linking Pre-Calc resource with Help Centre.
- Ian A. (UFV): Orientation scavenger Hunt helped (with fun math puzzles) instructors give homework assignment questions.
- Ben V. (UFV): Dedicated space that is staffed by students, instructors volunteer office hours. Usage was down when it was split online/face-to-face. Would help to have old textbooks as resources.
- Ian A. (UFV): centers being near campus helps. Other resources-diagnostic test resources to help students prepare.
- Jane B (UVIC): Phrases on the website that help are: “Just in time review”, “Get ready for your courses”. Happy to share resources if they get in touch with her.
- Natasha D.(Douglas): Math labs never has tutorials, consistent times every day (some extended hours) students need schedule to stay. Students can borrow resources, texts, calculators, and laptops. Nicely decorated with posters.
- Jane B. (UVIC): Use fluorescent duct tape so books don’t “walk away”. Mentioned also how to help students use electronic books.
- Michael N (Kwantlen): Learning Centre is drop-in for help. The Math Assistance Centre (M.A.C.) for Precalculus and Algebra. Tried problem-solving questions instead of algebra, but instructors didn’t like it. M.A.C is expensive to run. They require lost of instructor time.

11. Stats Break-out Discussion Part 1

See Stats Subcommittee Meeting Agenda at www.bccupms.ca

Parallel Session #2

12. Math Break-out Discussion Part 2

12.1 Recruiting Calculus 1 students to Math programs

No time to discuss.

12.2 P.L.O.M. (paperless online marking)

Gaitri Y (UBC-V): Will send an email to Costa K. (Secretary) and Ian A. (Chair) to forward to the BCCUPMS members.

13. Stats Break-out Discussion Part 2

See Stats Subcommittee Meeting Agenda at www.bccupms.ca

Break

Plenary Session #6

14. New Business**14.1 Highlights from parallel sessions**

Costa K (VCC) summarized the Discussion on “What’s new with (open) textbooks and online HW systems?” See section 10.1 in this report.

Justin G. (SFU): Summarized the Discussion on “What’s new with Drop-in help centres / open labs?” See section 10.2 in this report.

Bruce D. (UBC-Statistics): key highlights of the Statistics subcommittee are:

- Statistics enrolment is marginally down.
- Increase in the number of students in data Science and Machine Learning.
- Modes of course offering were online, hybrid, f2f.
- For High school course Statistics 12, Bruce D. created resources.
- International Statistical Literacy Poster competition.
- Susan Chen (Camosun-Statistics): Students scored 10% higher in a online section compared to an equivalent face-to-face section.
- Research at UBC has shown that students do not necessarily learn better in face-to-face instruction.
- Bruce D.(UBC-V): Looking for a open source textbook for Engineering.
- WebWorK integration and R; interface new for WebWork. PraireLearn integrates with R. Very few resources. Will keep an eye on it.
- Bruce Dunham will continue as Chair of the BCCUPMS Statistics sub-committee.

Susan Chen (Camosun): Students many times do not have the opportunity to chose the mode of delivery. Blended or f2f is suitable for different types of students such as working parents, etc.

14.2 Online Final Exams

-Jane B. (UVIC): Online teaching/assessing requires expertise. We were forced to teach online due to the pandemic. This is not the same.

-Iain Pardoe (TRU-OL): ProctorU. Generally, student feedback was positive. Due to COVID, all person exams were cancelled. Instructors wrote online assessments, but not proctored. Now, in person exams are back. Will be allowing designated centres for proctoring.

-Michael N (Kwantlen):For some courses there were online exams.

-Costa K (VCC): Online and hybrid courses had their final exams in-person.

-Jane B (UVIC): UVIC opposed ProctorU due to accessibility and privacy issues.

-Alex Blair (NIC):Students pay for proctoring and it is not part of their tuition.

-Iain Pardoe (TRU-OL): When course gets developed , the instructional designers focus on online methodology, There is focus on minimizing the percentage of the Final Exam and more assessments. Faculty can have a say. There is a positive experience of online proctoring systems; Examity and Honorlock.

-Krishna S. (Alexander College): 60% in person and 40% online. Administration prefers that all online courses require an online exam. Before COVID the exam weight was 50%. Now it is down to 30-35%. Going forward it most likely will be 40-50%. Administration prefers around 45%.

-Ian A. (UFV): Need a minimum percentage to pass the course.

-Natasha D. (Douglas): No single assessment can be more than 40%.

-Eugene B. (Langara): Online, non-proctored. Focus on creating cheat-proof final exams. Anticipation that online courses have online final exams.

-Deanna B. (Capilano): Final exam is the only in person exam. Midterm will also need to be an in-person exam.

-Brian W. (UBC-V): Asked if there are proctoring centres that can be setup worldwide.

Committee brings forward the names for elections for Chair. Only one name was brought forward: Deanna Baxter (Capilano U).

-Ian A. (UFV): Asked if there are any other nominations for Chair of BCCUPMS (three times). No other nominations. By acclamation Deanna Baxter is the next Chair of the BCCUPMS (2-year term). The members congratulated Deanna B.

-Suzanne F. (TRU) Extended a thank you greeting to the outgoing Chair Ian A. (UFV).

Motion to adjourn at 3:40 pm by Natasha D. (Douglas College).

Break

Meeting with High School Teachers

Madison Marquardt, of St John Brebeuf School in Abbotsford
Leeanne Bartel, of Highroad Academy in Chilliwack

-Justin G (SFU): Asked what the structure and offerings of the different streams of math courses in high schools is.

-Susan R. (BCAMT): The perception of teachers on the streams of math courses is influential. Most high school are not offering the new Grade 12 courses (History of Math, Geometry, Statistics) .

-Madison: The sentiment of teachers is that the Foundations stream is easier than the Precalculus stream. There are students that expressed interest in taking the History of Math course, but they do not have large student numbers to offer the course.

-Ian A (UFV); Post-secondary institutions kind of set the purpose of the streams.

-Susan R. (BCAMT): The BC Teachers Federation (BCTF) website can be a good resource for teachers <https://www.bctf.ca/>.

15. Reports

15.1 BCAMT (Susan Robinson, President of BCAMT and co-editor of Vector magazine)

Highlights of the presentation were:

- 1) Summit summer challenges of schools that do not have math leaders.
- 2) Assessments: are 1-1.5 hours sessions. Webinars on innovative ways of assessing-outcomes based assessments. No percentages and no letter grades.

- 3) Shift from content to competencies.
- 4) Indigenization of the curriculum. Articles in Journal VECTOR. Papers from Math Education programs.

-Ian A. (UFV): Asks what is looking different in “assessments”. If we learn what works and what doesn’t work, we can implement this knowledge for higher levels.

-Susan R. (BCAMT). One idea is not to give percentages on tests and give feedback. Students can have the opportunity to master the content.

-Natasha D. (Douglas):Asks if a student can stop an assessment if they feel they are not doing well, since a low mark can be damaging to the student’s moral and future learning.

-Suzanne F. (TRU): The focus should be on helping students’ improve and not on giving a lower grade.

-Madison (School teacher): We can be flexible on test dates. No fixed dates.

15.2 BC Secondary Schools math Contest – Suzanne Feldberg

Suzanne F. (TRU):

On May 6, 2022 the Final Round of the BC Secondary School Mathematics Contest was written at a number of provincial colleges and universities. Students who had performed well on an earlier Preliminary Round held within their own high schools were invited (together with a teacher sponsor) to attend the Final Round and spend a day at the local post- secondary institution with several activities involved.

Reporting institutions are:

Capilano University	(CapU)
Douglas College	(Douglas)
Coast Mountain College	(CMC)
Thompson Rivers University	(TRU)
University of the Fraser Valley	(UFV)

Altogether a total of 353 juniors and 205 seniors participated in the Preliminary round, with average scores of 23.84 for the juniors and 21.48 for the Seniors overall, (out of 60).

The table below gives a summary of the number of students and the top scores (out of a possible 100) on the Final Round at each institution that reported the Final Round.

Institution	Final Round #		Top Three Scores		Averages	
	<i>Juniors</i>	<i>Seniors</i>	<i>Juniors</i>	<i>Seniors</i>	<i>Juniors</i>	<i>Seniors</i>
CapU	20	13	100, 94, 93	89, 83, 77	65.9	49
Douglas	13	14	72, 69, 69	100, 84, 62	55.4	54.1
CMC	12	5	42	45	29.1	34.8
TRU	18	22	67, 59, 55	79, 54, 49	32.4	35.4
UFV	41	21	88, 77, 71	62, 54, 51	38.55	33.43

TOTAL	104	75	100, 94,93	100, 89, 84	43.76	40.65
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The top reported Junior and Senior Preliminary scores were both 60 out of 60, with averages of 24 and 22.. Five schools reported a total of 353 junior and 205 senior participants in the preliminary round. Not all schools report Preliminary Round scores or participation numbers, so there is no way to know exactly how many students actually participated. A total of 179 students, from the five institutions reporting, participated in the Final Round this year. Participation in both rounds was lower this year because this was the first time the contest was held coming out of the COVID-19 pandemic, so some institutions and schools were wary of extra gatherings. We hope to increase the numbers next year!

This report, together with information on winners from the individual institutions, will be posted on the BCSSMC web site: <http://mathcontest.sites.tru.ca>.

For those planning for next year, the dates we are suggesting for the 2023 contest are:
 Preliminary Round: April 7, 2023
 Final Round: May 7, 2023

Drafts will be ready on an earlier schedule this year. We hope to have the first drafts ready before the end of the summer. All help is welcomed whether in the form of suggested problems, feedback, solutions and TeX typesetting! Please contact Suzanne Feldberg sfeldberg@tru.ca if you are interested.

The Math Contest website is <http://mathcontest.sites.tru.ca/>. On it you will find the most recent provincial summaries, and previous contest papers dating back to 1999.

15.3 Math Challengers

Math Challengers (MC) is a competition for Grade 8, 9 and Grade 10 students who love math and excel in doing it. This year about 970 students participated at the Regional level, which was more than a 20% increase over 2021. Grade 8 teams registered from 37 different schools, Grade 9, from 35 schools and Grade 10, from 35 schools. Students are also permitted to register as individual competitors.

Registration Data for Math Challengers Regional Competitions									
	Lower Mainland		Vancouver Island		Okanagan		Fraser Valley		Prince George
Grade 8	2021	2022	2021	2022	2021	2022	2021	2022	
Schools	14	23	6	5	-	1	7	8	-
Teams	27	41	21	21	-	1	20	18	-
Competitors	135	203	105	105	-	5	100	90	-
Grade 9									
Schools	16	24	4	2	1	1	6	8	-
Teams	32	37	7	9	1	3	8	8	-
Competitors	160	183	35	45	5	15	40	36	-
Grade 10									
Schools	17	23	3	2	1	1	4	9	-
Teams	27	34	5	9	1	3	8	11	-
Competitors	135	170	25	45	5	15	40	55	-

The delivery of the competition was kept the same as it had been done in 2021:

- No registration fees for schools or for teams
- Written stages were done in schools, not at a Regional site
- Coaches/volunteers were asked to mark the papers and send in the results
- The Face-Off Stage was open to all competitors and ran using a Zoom and Excel
- Competitors were not identified by name
- No actual Provincial Finals – Provincial recognition was extrapolated from Regionals

Plaques will again be awarded, rather than trophies, to top individuals and schools this year. Medals for Finalists, the top ten students in each pool, will be awarded, as will the PIMS Medal, recognizing the top student in each grade from a participating school on Vancouver Island.

What happens in 2023? The Math Challengers Society is expecting to return the competition to its in person format again next year. However, with the lessons learned during the pandemic, Math Challengers is planning to offer schools presently not in one of the Provincial Regions the opportunity to participate in a manner similar to that which was used Province-wide for the past two years. This would require a promotional campaign. So far, schools outside the Regions have not taken the initiative of registering in the annual competition. The challenge to you in, say Central or Northern Vancouver Island, Kamloops, Cranbrook, Creston or other localities, is to inform teachers in your area of the opportunity to run the competition right in their own school. More information is on the Math Challengers website.

Regions, besides the main competition site on the Lower Mainland, are Lower Vancouver Island, the Okanagan, the Fraser Valley and Prince George. Regional

organizers are Satoshi Tomoda (Okanagan), Ian Affleck (UFV) and Erin Beveridge (UNBC). Colleges and universities within a Region are ideal sites for hosting MC.

Leo encouraged for other regions also to participate in the contest. It is a fun event especially the “face-off”.

For information about MC: <http://mathchallengers.ca/>

15.4 Calculus Challenge Exam – Brian Wetton

Students can get credit for 1st term Calculus. Currently only UBC is running the Challenge Exam. The registration deadline for this year is June 1 and the exam is on June 15. The Challenge Exam can be held at UBC or at a high school with a teacher invigilating. Students get to decide if they want to use it for UBC MATH 100.

Questions are from the curriculum of Calculus 12 but a bit more challenging. There are many practice materials on the website http://outreach.math.ubc.ca/calc_challenge.html/tests/ The cost of the exam is \$100. Once the students are registered in University they cannot take the Challenge exam.

16. Open Discussion

-Ian A. (UFV): A concern is students who are not well prepared.

-Jane B (UVIC): Self-guided materials are helpful. Students in general find a challenge when taking 1st year Calculus. Workshops are helpful for studying for math exams.

-Bruce D(UBC-V Statistics) : The faculty of Arts have the new high school Grade 12 courses in lieu of Precalculus 11, which can be counted as credits. Many resources on <https://statspace.elearning.ubc.ca/> Will be teaching Statistics at Centennial High school in Coquitlam.

-Bruce D(UBC-V Statistics) : The faculty of Arts have the new high school Grade 12 courses in lieu of Precalculus 11, which can be counted as credits. Many resources on <https://statspace.elearning.ubc.ca/> Taught Statistics at Centennial High school in Coquitlam last year.

-Susan R. (BCAMT): The BC Teachers Federation (BCTF) website can be a good resource for teachers <https://www.bctf.ca/>.

Reception at 5:30 pm at UBC-V

Attendee List

Institution	Last name	First name
Acsenda School of Management		
Alexander College	Subedi	Krishna
BC Institute of Technology	Jolfae	Simin
	Merchant	Sandi
Camosun College	Montgomery	Patrick
	Chen	Susan
Capilano University	Baxter	Deanna
	Ottaway	Paul
Coast Mountain College	Zahrai	Erfan
College of New Caledonia	Wall	Tracy
College of the Rockies	Hyde	Andrea
Columbia College	Culibrk	Ana
Corpus Christi College	Maghzian	Hamid
Coquitlam College	Belchev	Gera
	Pai	Scott
Douglas College	Davidson	Natasha
	Oesterle	Susan
Fairleigh Dickinson University		
Fraser International College		
Kwantlen Polytechnic University	Nyenhuis	Michael
	Macleod	Colin
Langara College	Belchev	Eugene
	Grubisic	Maja
	Tamas	Csilla
Lasalle College	Casarini	Marcel
North Island College		
Northern Lights College	Cui	Hongbin
Okanagan College	Brown	Stephen
	Hurtubise	Claude
Pacific Institute for the Mathematical Sciences	Leeming	David
Quest University	Matthews	Asia
Selkirk College	Henderson	Doug
Simon Fraser University	Gray	Justin

	Perera	Harsha
Thompson Rivers University	Feldberg	Suzanne
	Pardoe	Iain
	Shaikh	Mateen
Trinity Western University	Pimentel	Sam
University of BC Okanagan	Broughton	Wayne
University of BC Vancouver	Alvarez	Melania
	Dunham	Bruce
	Wetton	Brian
	Yapa	Gaitri
University Canada West	Le	Nam
University of the Fraser Valley	Affleck	Ian
	Vanderlai	Ben
University of Northern BC		
University of Victoria	Butterfield	Jane
Vancouver Community College	Karavas	Costa
	Mandryk	Natasha
Vancouver Island University	Bigelow	David
Yorkville University		
Undetermined/Retired	Neufeld	Leo

A dark blue vertical bar runs down the left side of the page. A blue arrow-shaped graphic points to the right from the bar, containing the date 6/1/2022.

6/1/2022

Institutional Reports 2022

Prepared for the British Columbia
Committee on the Undergraduate
Program in Mathematics and
Statistics (BCCUPMS)

A series of thin, curved lines in shades of blue and grey originate from the bottom left and sweep upwards and to the right, creating a sense of movement and depth.

Ian Affleck
BCCUPMS CHAIR, 2018-2022

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- **College of the Rockies**
- **Nicola Valley Institute of Technology**
- **Pearson College**
- **Royal Roads University**
- **University of Northern British Columbia**
- **Vancouver Island University**
- **Yorkville University**
- **Yukon University**

This document will be updated and re-posted periodically to capture further submissions.

Alexander College

Representative providing this report: [Krishna Subedi](#)

Email address of representative providing this report: k.subedi@alexandercollege.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

In 2021, Barbara Moon, Ph.D. (formerly AC's long-standing Dean of Arts and Sciences) became Provost and Steve Roe, Ph.D. (formerly of Northern Lights College) became Dean of Arts and Sciences.

We also hired one sessional instructor this term (Spring 2022) in the Math and Statistics department.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Most subject area disciplines increased the number of course offerings over the past year, with a few exceptions. Enrolment in Economics (ECON), English for Academic Purposes (EAP), and Mathematics (MATH) has been steadily and rather sharply declining due to changing enrolment demographics over the past 5 years.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

Number of new courses have been developed and articulated over the past year in other departments and subject areas including the following two new courses in Mathematics and Statistics.

- 1) MATH 123 (Mathematics for Everyday Life)- this course is primarily intended for non-science (liberal arts) students.
- 2) STAT 270 (Introduction to Probability and Statistics)- this is a calculus-based introductory statistics course.

In addition, two new Associate Degree concentrations were also established in 2021:

- (1) Associate of Arts (Mathematics) degree
- (2) Associate of Science (Mathematics) degree

4. Are there any concerns or issues related to articulation that you'd like to share?

There isn't any major concern or issue related to articulation but there is a concern related to the academic readiness of our students, particularly those from India. Multiple research and data analysis projects are underway to determine how we can mitigate this complex issue, and some initiatives have already been implemented (e.g. priority registration, math placement test, review of prerequisites, orientation enhancements etc).

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

We are using the following open access resources for the following course:

Course #	Course Name	OER Textbook	Homework System
----------	-------------	--------------	-----------------

MATH 100	Precalculus	Precalculus by Jay Abramson	Canvas
MATH 104	Diff. Calculus with Applications to Commerce and Social Sciences	(i) Applied Calculus by Shana Calaway et al. + (ii) Calculus Vol. 1 by Strang/ Herman et al.	Canvas+ myopenmath.com
MATH 105	Int. Calculus with Applications to Commerce and Social Sciences	(i) Applied Calculus by Shana Calaway et al. + (ii) Calculus Vol. 2 & 3 by Strang/ Herman + (iii) Probability (Kuter). (2019, June 23)	Canvas+ Myopenmath.com
Math 115	Discrete Mathematics	(i) Discrete Mathematics: An Open Introduction (3rd Ed.) by Oscar Levin (ii) Applied Discrete Structures by Al Doerr, Kevin Lavasseur	Canvas
Math 123	Mathematics for Everyday Life	Lippman, D., & Lippman, D. (n.d.). Math in Society. Minneapolis.	Canvas+ Myopenmath.com
Math 151	Calculus 1	(i) Calculus Volume 1 by Strang/Herman et al. (ii) Calculus Volume 2 by Strang/Herman et al.	Canvas
MATH 255	Ordinary Differential Equations	Elementary Differential Equations by William F. Trench	Canvas+ Myopenmath.com

Overall, we found that the textbooks and homework system are working good for us. For some courses, we faced challenges to find a single good quality open-source textbook that meets the depth and breadth of our curriculum standard. So, having reviewed a few textbooks thoroughly and after consultation with our SASCs member, we decided to use two or more textbooks (some chapters/contents from one and other chapters/ content from the other) and then supplemented by the materials created by the instructors over the years.

Regarding homework system, use of Canvas and or Canvas+myopenmath seems to be quite effective. We are also using publishers' platform (e.g., person's MylabMath) for some courses.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

The college is taking some initiatives towards Indigenization. For example, the main theme of one of our ProD day was Indigenous Pedagogy. The guest speaker gave a talk/workshop on the topic: "Indigenous Pedagogy: Curriculum delivery using First People's Principles of Learning as a model" which was well received by the faculties. In addition, some faculty members in humanities and social sciences department have also taken some initiatives to include indigenous materials in their curriculum but there is nothing particular to the mathematics and statistics department.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

Discussion is going on about this topic among the college management teams, but I have nothing to report here at this moment.

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

The tentative plan for course delivery mode for Fall 2022 is approximately 70% face-to-face and 30% virtual (synchronous) whereas in Fall 2019, all of our courses were 100% face-to-face.

9. Do you have any other news that you'd like to share about your department or institution?

- a) New main campus opened in Fall 2021. Located at 4805 Kingsway in Burnaby, the new campus features more classrooms, larger faculty, staff and student spaces, state-of-the-art classroom technology, etc.
- b) Suspected cheating during online exam is a concern for us. Every effort is made to minimize cheating by implementing various strategies including strict video rules and creating exam questions that cannot be looked up online easily. During the major exams (midterm, final etc.), students are given open-ended questions with just enough time limit. Students are required to solve the problems on paper and then asked to take pictures and submit their solutions within the time limit. During the exam, student's workspace, face, and hands must be visible to the invigilator. To ensure academic integrity, if a student is suspected of any wrong doings/ cheating during exam, he or she is required to write a new test or complete a 10- 15 minutes oral exam with the instructor where the student is asked questions relating to course concepts and how to approach and solve problems.

Acsenda School of Management (report to BCCAT)

Acsenda School of Management (ASM) is a private degree granting institution offering two undergraduate programs: Bachelor of Business Administration and Bachelor of Hospitality Management. The Bachelor of Business Administration program includes options for several concentrations, including international business management, marketing management, human resource management, accounting, financial management, management information systems, and a general management option. The Bachelor of Hospitality Management program, integrates business courses with international internships in the hospitality industry to prepare graduates for successful careers in management. Acsenda, incorporates certification processes into the learning curriculum to facilitate credentials for career development in Human Resources, Supply Chain, Accounting and Marketing.

Acsenda is located at 200 – 666 Burrard Street, Vancouver BC, V6C 2X8 and enrollment is currently at approximately 1200 students. The organization is led by a President, Vice-President, Academic; and Vice-President, Program Development, Partnerships & Compliance, in addition to governance councils and committees for academic and administrative purposes. ASM has 2 directors and 5 associate directors who oversee their respective program area and teach part time in addition to adjunct faculty. Acsenda has renewed its EQA designation and maintains articulations with schools including Arbutus and SELC.

ASM resumed in-person class delivery for about 40% of classes beginning October 2021, with the remainder being synchronous and asynchronous online classes. In-person classes are now at over 90%. We have outfitted our classrooms with interactive technology which allows us to accommodate remote students who are unable to come to campus due to health or other approved reasons.

While new student recruitment initially declined during the pandemic, ASM continues to experience steady and sustainable new student enrolments and greater diversification. Our retention rates have remained strong at 92%, and student satisfaction scores remain consistently high. ASM has provided travel grants to assist students facing additional costs related to coming to Canada and a laptop purchase grant to help students acquire the necessary technology that they need to access a moodle learning management system and online resources, including publisher as well as open textbooks.

This January, we introduced two new concentrations in Financial Management, and in Management Information Systems, which expand the range of program offerings to our students. As we return to learning in person on campus, we continue to develop our curriculum to accommodate flexible and adaptable learning models.

Very recently, we are proud to report that in response to conflict impacting a learning partner in Ukraine, ASM has established an educational exchange project with Concordia University, Ukraine at ASM, to support over 40 business students in pursuing their continued business courses.

British Columbia Institute of Technology

Representative providing this report: [Andrew McConnell](#)

Email address of representative providing this report: andrew_mcconnell@bcit.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

None currently

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Overall lowering of international student numbers although offset in part by BC students.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

Not currently and more specifically none within math. Changes in many of the programs we support but that is always ongoing. .

4. Are there any concerns or issues related to articulation that you'd like to share?

No

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

No

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

None in the department.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

None

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

Mostly identical to what was offered in Fall 2019.

9. Do you have any other news that you'd like to share about your department or institution?

None

Camosun College - Mathematics

Representative providing this report: [Patrick Montgomery](#)

Email address of representative providing this report: montgomeryp@camosun.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

We had one retirement this year, Chris Odgers who had been with the department for over 30 years. The position was not approved for posting, so we've not been able to hire any continuing faculty this year.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Enrollment has decreased this year for mathematics and statistics by almost 9%, primarily due to a pandemic-caused decrease in international student enrollment. The institution is hopeful that this trend will reverse in the 2022/2023 academic year ahead.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

We have a new course (STAT 123 – Introduction to Data Science) approved that we're offering this fall for the first time.

4. Are there any concerns or issues related to articulation that you'd like to share?

No

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

Both Webwork and MyOpenMath are in use as free homework systems. This is an area of ongoing investigation and experimentation by faculty.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

Camosun continues to progress along several initiatives towards Indigenization, and the department is part of that larger effort. In particular, the college has hired a new advisor within our curriculum development section, and this may help us continue to revise course curricula with an indigenous lens.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

These have been limited this year due to the considerations from the pandemic.

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

We have been offering primarily face-to-face courses since September 2021. In an effort to diversify our course offerings, the institution is slowly permitting occasional delivery methods in a hybrid online

format, and we plan to have a few of these courses (introductory statistics, Precalculus, finite mathematics) in this format this year.

9. Do you have any other news that you'd like to share about your department or institution?

With regrets, Camosun College is not authorizing travel to articulation meetings which are accessible (or could be made accessible) online. This is a financial decision, and it is not clear that the college has the authority to withhold funding earmarked for travel to articulation meetings. If the BCcupms, through the BCCAT structure, is able to seek clarity on this topic through the JAM or other framework, it would be appreciated so that we can argue within our own institution about adhering to the funding requirements for future meetings.

Camosun College – Statistics

Representative providing this report: [Susan Chen](#)

Email address of representative providing this report: chen@camosun.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

We are happy that Fan Wu has been regularized into a 2/3 continuing position after several years of sessional teaching with us.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Our Statistics enrolment went down and 2 sections were cut last year out of a total of the original 15 sections.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

We have a new course (STAT 123 – Introduction to Data Science) approved that we're offering this fall for the first time.

4. Are there any concerns or issues related to articulation that you'd like to share? No

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

OpenIntro Statistics text is used for our Elementary Statistics classes and MyOpenMath homework is used by both Elementary Statistics and Applied Statistics. Both are well liked by students.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

Yes, please see the Math report from Patrick Montgomery for this part.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

Unfortunately no, due to pandemic.

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

We were able to offer Hybrid delivery for 3 of the 13 sections last year. We have permission from our school to continue to offer some hybrid sections next year because of the positive experience with hybrid last year.

9. Do you have any other news that you'd like to share about your department or institution? No

Capilano University

Representative providing this report: Paul Ottaway Email address: paulottaway@capilanou.ca

1. Do you have any announcements of new hires or retirements that you'd like to share? No.
2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Overall, enrolments are down over the last year but summer enrolment is up. We are getting more interest than past years and hope to see an increase for the fall.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

MATH 152 (Linear Algebra for Engineering) will be recoded as MATH 252 but content will otherwise stay the same.

MATH 109 (Calc 2) will be included as an alternate stream for non-engineers and listed as prerequisite into any course that currently includes MATH 126 (also Calc 2)

Our BSc program has launched with some students going directly into 3rd year this coming fall. There are concentrations in Biomedical Science, Computational Science and Environmental Science. The BSc in Applied Clean Tech as well as a minor in Data Science are in development.

4. Are there any concerns or issues related to articulation that you'd like to share? No.
5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

We are using online texts for most 1st and 2nd year courses with varying degrees of success. No other homework systems are currently being used.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

No significant institutional changes, but individuals are encouraged to partake in indigenization and decolonization professional development activities which are provided by the university.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

BC math contest was run in May, we expect to restart our SNAP Math Fairs again in the coming academic year (one in the fall and one in the spring)

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

We will be doing almost all in-person classes in Fall 2022 with only a couple exceptions (one section of math for elementary teachers will be offered online in evenings)

9. Do you have any other news that you'd like to share about your department or institution? No.

Coast Mountain College

Representative: Erfan Zahrai – University Credit

Email: ezahrai@coastmountaincollege.ca

New hires: None

University Credit Courses 2022-23: Math 101/102 Calculus I and II, Math 115 Pre-Calculus, Math 131 Intro to Statistics, Math 235 Linear Algebra, Math 190 Principles of Mathematics for Elementary Teachers

Textbooks:

- Math 131: Triola, Elementary Statistics, 3rd Canadian Ed.
- Math 101/102: OpenStax Calculus
- Math 115: OpenStax Pre-Calculus
- Math 235: Nicholson, Linear Algebra with Applications
- Math 190: : O’Daffer et al. Mathematics for Elementary School Teachers

Enrollment 2021-22:

Rupert Campus:

- Math 101-Fall: 5
- Math 190-Fall: 11
- Math 131-Winter: 12
- Math 115-Winter: 9

Terrace Campus:

- Math 131-Fall: 8
- Math 101-Fall: 11
- Math 235-Fall: 7
- Math 102-Winter: 8
- Math 131-Winter: 19

No information regarding 2022-23 enrollment yet.

Mode of delivery 2021-22: Distributed learning using Wacom tablet, BlueJeans and BrightSpace.

We are planning in-person classes in 2022-23 for all our courses except for Math 190 and Math 235 which are delivered as online asynchronous. Math 115 and Math 102 are video conferenced to both campuses originating at Rupert and Terrace respectively.

Other news: We are now enrolled in PIMS Education Associate Program.

Question to other members: Does your institution offer Calculus III as an online course? We are thinking of a partnership with other institutions to offer it to our students.

College of New Caledonia

Representative providing this report: [Tracy Wall](#)

Email address of representative providing this report: walt3656@cnc.bc.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

[We have had one instructor leave to Ontario and have hired a new instructor to teach in Math and Computer Science.](#)

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

[Enrolments were down this past year but we are seeing increased enrolment for the Fall.](#)

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

[No](#)

4. Are there any concerns or issues related to articulation that you'd like to share?

[No](#)

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

[No](#)

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

[No](#)

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

[CNC had an Open House in March that was well attended. Math was well represented and some interest was shown by attendees.](#)

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

[Our Fall math courses are all planned to be face-to-face.](#)

9. Do you have any other news that you'd like to share about your department or institution?

[No](#)

Columbia College

Representative providing this report: [Ana Culibrk](#)

Email address of representative providing this report: aculibrk@columbiacollege.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

[As of May 2022, we have a new regular Math instructor Dr. Evangelia Aleiferi.](#)

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year? [No.](#)

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about? [No.](#)

4. Are there any concerns or issues related to articulation that you'd like to share? [No.](#)

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

[We have been using WebWork in majority of our courses. We started to use OpenStax textbooks for Precalculus in September 2020. For Calculus I, II, and III for Science we have been using CLP textbooks and problems books since May 2021. We also have been using Differential Equations for Engineers by Jiri Lebl, and Calculus I for Social Sciences – an open-source book adapted by SFU for several years.](#)

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

[Our Indigenization Committee has organized Learning Circles led by Liimiiuum Hala'ayt \(Robert Clifton\), during the Winter 2022 term which will continue in the Summer 2022 term. Liimiiuum Hala'ayt has been working with Columbia College since January to help us continue to learn about indigenization in education.](#)

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report? [No.](#)

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

[We applied to BCCAT for a permission to deliver a certain percentage of courses in an online and hybrid mode, and we are waiting for reply.](#)

9. Do you have any other news that you'd like to share about your department or institution?

[No.](#)

Coquitlam College

Representative providing this report: [Gera Belchev](#)

Email address of representative providing this report: gbelchev@coquitlamcollege.com

1. Do you have any announcements of new hires or retirements that you'd like to share? [No](#)
2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or noare significant changes expected in the coming year?

The COVID-19 pandemic continues to cause some disruptions in international travel and as most of our students are international, we experienced a decrease in enrolment and had to cancel several sections of our second year classes. Also, we are experiencing a significant demographic change among our students – less students from China and more from South Asia. Our department is concerned that a mandated return to in-person delivery may affect negatively our enrolment in the fall, as many international students are still hesitant to travel.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about? [No](#)
4. Are there any concerns or issues related to articulation that you'd like to share? [No](#)
5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

Many of my colleagues use [MyOpenMath](#) in their courses for homework problems.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

The college is providing a variety of resources and activities posted on our course management platform.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

[No](#)

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

The college expects all the courses to be delivered in person.

9. Do you have any other news that you'd like to share about your department or institution?

[No](#)

Corpus Christi College

Representative providing this report: [Dr. Hamid Maghzian](#)

Email address of representative providing this report: hmaghzian@corpuschristi.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

[No new hires in Mathematics.](#)

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

[Enrollment is significantly down this year, with the largest decrease from prior year in Fall 2021 enrollment \(down 23%\). We are looking a little less dire now, with around 18% decrease in our Winter 2022 term.](#)

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

[No new courses.](#)

4. Are there any concerns or issues related to articulation that you'd like to share?

[No new courses articulated.](#)

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

[OpenStax is being used for precalculus and Rover is being used as its homework system. Rover system has been effective due to variable questions.](#)

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

[The college had created and offered two courses on Indigenous Peoples studies since Fall 2019](#)

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report? N/A

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

[The college courses will be face-to-face in the Fall. There are online courses as well, as part of Part time studies, the same as pre-pandemic time.](#)

9. Do you have any other news that you'd like to share about your department or institution?

[There is an upcoming merger between Corpus Christi and St. Mark's and we will be St. Mark's by sometime next year.](#)

Douglas College

Representative providing this report: [Natasha Davidson](#)

Email address of representative providing this report: davidsonn@douglascollege.ca

1. Do you have any announcements of new hires or retirements that you'd like to share? No
2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Enrollments have been fairly stable – they are largely unchanged since pre-Covid and have been strong in most courses throughout the Covid response. The Calculus for Life Science stream has had falling enrollments and we have not been able to offer the second semester as a result since Winter 2021.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about? No
4. Are there any concerns or issues related to articulation that you'd like to share? No
5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

We continue to use OpenStax text for our Basic Algebra course (1101) and our Algebra and Trigonometry course (1105).

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

Not at this time but – hopefully – next year.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

Again, not yet!

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

I cannot report for other departments, though my impression is that there is an increase in hybrid and on-line offerings since and surviving our Covid response. The Mathematics department (through which Math 1160 – Introduction to Statistics is also offered) has decided that at this time none of our courses would benefit from being offered in the on-line format, and therefore, ALL of our courses are being offered face-to-face, as they were in the Fall of 2019.

9. Do you have any other news that you'd like to share about your department or institution? No

Fraser International College

Representative providing this report: [Navid Alaie](#)

Email address of representative providing this report: nalaei@learning.fraseric.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

None to mention. There are currently 5 continuing instructors and 8 sessional instructors.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Institutionally, the enrolment is down approximately 15%, and we've seen a proportional drop in the enrolment for Math and Stats courses. FIC is seeing the differential drop when comparing individual semesters this academic year with past year. Summer 2022 is only off by 4%. If enrolment trends continue, we expect Fall 2022 to see similar or to exceed Fall 2021 student numbers. Specific enrolment data is noted below:

Table 1: Academic Year Total Enrolment in MATH and STATS courses offered

Course/Program Name	Enrolment Numbers (Fall 2021 - Summer 2022)	Enrolment Numbers (Fall 2020 - Summer 2021)
MATH100	887	923
MATH151	341	362
MATH152	261	389
MATH157	316	559
MATH232	104	159
MACM101	217	306
STAT203	300	400

Table 2: Semester Breakdown of Math_Stats Courses (Fall 2021 – Summer 2022)

Course/Program Name	Enrolment Numbers (Summer 2022)	Enrolment Numbers (Spring 2022)	Enrolment Numbers (Fall 2021)
MATH100	209	312	366
MATH151	105	128	108
MATH152	99	82	80
MATH157	87	127	102
MATH232	18	47	39
MACM101	81	69	67
STAT203	111	96	93

Course/Program Name	Enrolment Numbers (Summer 2021)	Enrolment Numbers (Spring 2021)	Enrolment Numbers (Fall 2020)
MATH100	204	357	357
MATH151	87	117	158
MATH152	83	111	195
MATH157	164	175	220
MATH232	44	48	67
MACM101	96	71	139
STAT203	103	133	164

- 3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?**

None to mention.

- 4. Are there any concerns or issues related to articulation that you'd like to share?**

FIC has primarily been a sending institution but has been expanding agreements as a receiving institution throughout 2021/2022.

- 5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?**

FIC is now using the OpenStax Precalculus textbook (MATH 100) which is freely available for download on openstax.org. Previously, FIC used Precalculus by Sheldon Axler.

- 6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?**

FIC has taken introductory steps and begun to introduce sessions to staff and students on truth and reconciliation as beginning initiatives towards indigenization at the institution.

- 7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?**

None to mention.

- 8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?**

Fall semester 2021 saw a return to face-to-face delivery. FIC started with approximately a 35:65 split with online delivery. Over the course of the 2021/2022 academic year, FIC has continued to increase face-to-face sections in all departments and is now offering slightly more in-person sections than remote. Fall

2022, will see another step forward with the consent granted to institutions allowing online instruction potentially coming to an end in August 2022.

9. Do you have any other news that you'd like to share about your department or institution?

Student engagement continues to be a focus of attention as is Academic Integrity especially for remotely delivered classes. The return to the classroom was welcomed by the community and highlighted the advantages of in-person delivery. It brought about new challenges with adaptations needed in course design, class management, and the integration of flexible learning methodologies. Technical issues continue due to internet outages and application crashes. Wellness issues have increased especially due to the pandemic and burn-out plus ongoing global issues.

Kwantlen Polytechnic University

Representative providing this report: [Michael Nyenhuis](#)

Email address of representative providing this report: Michael.nyenhuis@kpu.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

[Michel Virgilio](#) became regularized full time in September. [Sergei Novocelski](#), [Terry Berg](#) and [Margaret Zmudzka-Bajerski](#) (the last two with ACP) retired.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

[No significant changes that I am aware of](#)

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

[No. Only a reminder that we do have our BSc in Applications of Mathematics!](#)

4. Are there any concerns or issues related to articulation that you'd like to share? [No](#)

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

[No](#)

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

[No. We are at the very beginning of Indigenization, and would appreciate help and information from those who are farther along.](#)

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

[No](#)

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

[It is unclear what KPU's plans are concerning online courses. We will have a new dean, and it is unclear what his position on online courses is. The math department is divided.](#)

9. Do you have any other news that you'd like to share about your department or institution?

[Our erstwhile dean, Betty Worobec, retired a few months ago, and will be replaced by Brett Favaro.](#)

Langara College

Representative providing this report: Eugene Belchev (Math) & Maja Grubisic (Stats)

Email address of representative providing this report: ebelchev@langara.ca & mgrubisic@langara.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

Two of our long-serving members, Kevin Craib and Emmanuel Darkoh, will be retiring. Their wisdom and expertise will be sorely missed. We wish them well in their post-retirement lives.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

In the Science area, domestic enrollment has dropped by 5-10% while international enrollment has been steady and in some cases higher than pre-COVID.

Some of the upper level math courses have struggled as of late; we are trying to understand why.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

None

4. Are there any concerns or issues related to articulation that you'd like to share?

Recently we noticed that several years ago the transfer credit for one of our courses has been discontinued without us noticing. What is the BCCAT's procedure about notifying the sending institution when such a thing happens?

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

In addition to the resources reported in 2021, we are currently using

Differential Calculus for Life Sciences, 2017th Edition, by Leah Edelstein-Keshet, UBC, the *CLP-1 Differential Calculus* problem book, the *OpenStax Calculus*, volume 1, and *MyOpenMath* homework system (used in MATH 1175)

Integral Calculus with Applications to Life Sciences, 2017th Edition, by Leah Edelstein-Keshet, UBC and the *CLP-2 Integral Calculus* problem book (used in MATH 1275)

Finite Mathematics, Custom text based on Math in Society, 2017, by David Lippman, Pierce College Ft Steilacoom and *Course Notes on Finite Mathematics*, 2019th Edition, by Pichmony Anhaouy, Langara College (used in MATH 1162)

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

As part of its 2021-2025 Strategic Plan, Langara College has implemented a new indigenization strategy aimed at deepening the relationship with Musqueam and other Indigenous Nations and communities. A new Indigenization Specialist and Curriculum Consultant was hired, as well.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

As reported last year, over the past few years, we have been hosting AMC events for students who do not have a high school to host them and this year we hosted the AMC series again. Note that some of these students are also home-schooled. These are highly competitive events, which many students train for. We do not train any of these students and merely provide an opportunity for students to compete. We had student participants as follows: 13 in AMC 8, 36 in AMC 10A, 11 AMC 12A, 9 in AMC 10B and 7 in AMC 12B; also 6 qualified for AIME (students must score high enough on the AMC 10/12 to qualify).

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

To the best of my knowledge, most of our classes this fall will be F2F with some allowance for online and mixed mode.

9. Do you have any other news that you'd like to share about your department or institution?

Dr. Paula Burns will become the fourth President and CEO of Langara College on June 6, 2022. We hope she can bring some stability and clear sense of direction to our college.

Pichmony Anhaouy has put together a customized open source textbook for our Business Calculus II course. It is partially based on APEX Calculus Gregory Hartman (Virginia Military Institute), Pichmony's own Math 1274 Multivariate Calculus Supplemental materials, and other business applications. It is titled *Mathematics 1274: Calculus II – Economics and Business Applications*, First Custom Edition, 2022, for Langara College.

LaSalle College

Representative providing this report: [Marcel Casarini – Media Arts Dept.](#)

Email address of representative providing this report: mcasarini@lasallecollegevancouver.com

1. Do you have any announcements of new hires or retirements that you'd like to share?

No.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

No.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

No.

4. Are there any concerns or issues related to articulation that you'd like to share?

No.

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

No.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

No.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

No.

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

[We are fully back to campus since October, 2021.](#)

9. Do you have any other news that you'd like to share about your department or institution?

No.

North Island College

Representative providing this report: Alexandra Blair **Email address:** Alexandra.blair@nic.bc.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

Yes, Jeannie Cameron left NIC last summer and moved to Nova Scotia to be closer to her family.

Alexandra Blair, our current dep chair, got hired as regular faculty with NIC.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Low international enrolment, due to visas not getting processed.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about? Xxxxx

4. Are there any concerns or issues related to articulation that you'd like to share?

Are closed-book invigilated exams needed for articulation?

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

MAT 181/182 (Calculus I/II) uses a combination of Active Calculus and Apex Calculus, with UBC's CLP texts as recommended for a source of practice problems. WeBWorK is used for some aspects of assessment. Mattermost (OpenETC) is used for course communication (can interpret LaTeX).

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

NIC has a new Indigenization Plan "Working Together".

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

NIC Youth Academy Summer Camps combine fun and meaningful, hands-on learning in focus areas such as STEM: <https://www.nic.bc.ca/programs/summer-camps/>

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

Most math courses are F2F, some are on one campus only and some are getting podcasted via Hyflex to the other campuses as well. Courses where we have more than one section, there will be one digital and one F2F.

9. Do you have any other news that you'd like to share about your department or institution?

Like most other program areas at NIC, the math and science area is currently undergoing program review. We are hoping it will help us in implementing some new things into the area.

Northern Lights College

Representative providing this report: [Hongbin Cui](#)

Email address of representative providing this report: hcui@nlc.bc.ca

1. Do you have any announcements of new hires or retirements that you'd like to share? [No](#)
2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year? [No](#)
3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about? [No](#)
4. Are there any concerns or issues related to articulation that you'd like to share? [No](#)
5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

Calculus I and Calculus II: David Guichard, [Calculus -Early Transcendentals](#), BCcampus Open Textbook.

Introductory Linear Algebra: Ken Kuttle and Ilijas Farah, [A First Course in Linear Algebra](#), BCcampus Open Textbook.

Introduction to Statistics: Barbara Illowsky, Susan Dean, [Introductory Statistics](#), BCcampus Open Textbook.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

[No, not I'm aware of](#)

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

[We have been offering dual credit courses including Math 101 Calculus I \(February to May\).](#)

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

[Face-to-face](#)

9. Do you have any other news that you'd like to share about your department or institution?

[No](#)

Okanagan College

Representative providing this report: Stephen Brown

Email address of representative providing this report: SCBrown@okanagan.bc.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

During the 2021/ 2022 year, we hired 3 full time term members. This current round of hiring has allowed us to convert 2 members to full time continuing and allowed us to hire an additional 3 term faculty. Unfortunately, we lost a member of the department, Norm Corbett, who was fighting a lengthy battle with illness.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Okanagan College enrolments were down overall during the 2021/ 2022 academic year. However, enrolments in mathematics, statistics and data science were not significantly impacted. With travel restrictions changing, we anticipate an increase in international enrolments for the 2022/ 2023 year. Additionally, domestic applications for the 2022/ 2023 year in sciences at OC are up a staggering 37%. We have added additional intakes of our Post-Baccalaureate diplomas in both Marketing and Data Analytics and Health Analytics.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

We launched our first intake of our new Post Baccalaureate diploma in Health Analytics this past January. We anticipate 2 intakes of 40 students each year.

4. Are there any concerns or issues related to articulation that you'd like to share?

None at this time.

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

After several members of the department found success using MyOpenMath, we recently established a private IMathAS server with help from IT Services <https://imathas.okanagan.bc.ca>. The new server, MyOkanaganMath, integrates well with Moodle and we was able to import a large portion of the question bank from MyOpenMath through the help of the developer, David Lippman. The department will be moving away from WebAssign in the Fall semester and switching to the new server instead. Calculus I/II will during this summer will be the first courses to use the new platform.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

None at this time.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

We successfully brought back an in person version of the BCHS Math Contest. We hope that this upcoming year will bring back to our normal suite of math contests, science fairs and other outreach activities.

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

Some service courses will remain online and we will be offering a couple of sections of UT Science mathematics courses online; however, for all UT Science courses, we will require an in-person final exam.

9. Do you have any other news that you'd like to share about your department or institution?

We have been challenged over the past year while the College looks for a new Dean of Science and Technology. While it has, at times, provided some inconsistent leadership, we have also seen some opportunities for expansion. We have found ourselves with a number of interim deans who seem to have deep pockets and a propensity to say YES. While this gravy train won't last forever, we are certainly enjoying the ride for now.

Quest University

Representative providing this report: [Dr Asia Matthews](#)

Email address of representative providing this report: asia.matthews@questu.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

[none](#)

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

[more Canadian than American enrollment](#)

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

[The Mathematics Foundation \(one course required for all Liberal Arts and Sciences students\) Learning Outcomes have been recently revised. They are as follows, with the Quest Institutional Learning Outcomes \(QILO\) indicated.](#)

[Students who achieve the Foundation requirements in Mathematics will be able to:](#)

- [1. Engage in the scholarly habits of mathematical inquiry. Carry out the full creative and analytic cycle of the mathematical process including the formulation of a question, the exploration of ideas, reflection on where the solution may lead next, reviewing and extending. \(QILO 1, 2, 3, 5\)](#)
- [2. Practice skepticism. Analyze and critique the truth of mathematical statements and the validity of mathematical arguments. \(QILO 1, 3, 5\)](#)
- [3. Develop, recognize, and apply structure. Create or utilize notation and figures to represent and clarify ideas and relationships. \(QILO 1, 2, 3, 4\)](#)
- [4. Develop an argument. Use deductive reasoning to develop and support a valid argument.](#)
- [5. Articulate mathematics. Clearly and concisely communicate mathematical concepts and reasoning both orally and in writing. \(QILO 1, 2, 3, 5\)](#)
- [6. Distinguish between the process of doing mathematics and the product of mathematical thought. \(QILO 1, 4, 5\)](#)

4. Are there any concerns or issues related to articulation that you'd like to share?

[There is significant ongoing work at the institution in the area of articulation. The goal is to accurately articulate current courses. There is not institutional goal to change our curriculum to articulate more courses.](#)

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

[xxxxx](#)

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

xxxxx

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

I have recently been awarded a \$5000 grant to continue my outreach, started last year, at St Margaret's School in Victoria. I have also been doing outreach with Squamish Nature Learners outdoor school. As the only Full-time mathematics faculty at Quest, these activities have full departmental support ;)

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

We are beginning to consider offering an online degree.

9. Do you have any other news that you'd like to share about your department or institution?

Money is still tight and enrollment is not yet where we need it to be. But the quality of the education is still really excellent, in my opinion.

Selkirk College

Representative providing this report: [Doug Henderson](#)

Email address of representative providing this report: dhenderson@selkirk.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

[Possibility of a part-time hire for the fall \(depends on student numbers\)](#)

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

[Domestic enrolment returning to pre-pandemic levels, international is still lagging](#)

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about? [No](#)

4. Are there any concerns or issues related to articulation that you'd like to share? [No](#)

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective? [No](#)

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

[Some money available through Teaching and Learning Centre, many instructors using PD time/money to do work on this](#)

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

[Not this past year](#)

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

[Returning to pre-COVID delivery. However, instructors are incorporating some on-line sessions \(e.g. labs and tutorials\) that were typically F2F – this is up to the instructor's discretion.](#)

9. Do you have any other news that you'd like to share about your department or institution?

[New school president starting in the next few weeks. VP of Students is retiring by the end of the calendar year.](#)

Simon Fraser University - Mathematics

Representative providing this report: Justin Gray

Email address of representative providing this report: jgray@math.sfu.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

We have had no retirements this past year but four new hires:

- Nadish de Silva – Quantum Computing
- Joanna Niezen – Teaching Faculty
- Ailene MacPherson – Infectious Disease Modeling and Evolution
- Ben Ashby – Infectious Disease Modeling and Evolution

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Overall enrollments at SFU for 2020/2021 are virtually the same as the year prior (up about 1%), as measured by annualized activity full-time equivalents ((# of units) x (# of undergraduate students enrolled) / 30). Overall enrollment in math courses is up about 8% from the previous year. The number of students enrolled in a math major/honors program has increased from 252 to 267 during this period.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

None

4. Are there any concerns or issues related to articulation that you'd like to share?

None

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

We are using OpenStax Precalculus for MATH 100 and are using the large problem bank that accompanies this book in the Möbius homework system. Möbius is not open access but is inexpensive. The problems are taken from their Starter Bundle and are coded by experts.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

Efforts toward indigenization at the course level in my department have been primarily focused on integrating indigenous pedagogical approaches.

The mandate of the SFU Aboriginal Reconciliation Council (ARC), established in 2017, is to develop a proposal and implementation plan for funding the Aboriginal Strategic Initiative (ASI), which will draw upon \$9M in one-time funds to build SFU's capacity to recruit, educate, and support Aboriginal students to be successful in their programs, lives, and careers. Some of these funds are now distributed through faculty inquiry grants for decolonizing and indigenizing curricula.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

There are numerous ongoing outreach initiatives, though many of these were cancelled this past year due to the current pandemic.

Elementary School Outreach

Math Catcher

High School Outreach

Academic Summer Camp for Aboriginal Students

Math Ambassadors

SFU Math Camp for High School Students

Teacher Outreach

SFU Math Camp for Teachers

Changing the Culture Conference

See <http://www.sfu.ca/math/k-12/k-12-outreach-programs.html> for more details.

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

Our courses are primarily offered in a face-to-face format, though some open-tutorial hours and instructor office hours are held remotely.

9. Do you have any other news that you'd like to share about your department or institution?

None

Simon Fraser University - Statistics

Representative providing this report: Harsha Perera

Email address of representative providing this report: gperera@sfu.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

We had two new hires late last year. Dr. Sonja Isberg and Dr. Lin (Becky) Wei joined as Lecturers.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Demand is always continuing to increase with Department of Statistics and Actuarial Science.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

We are introducing a new statistics course for Computer Science students STAT 271: Probability and Statistics for Computing Science from Fall 2022.

4. Are there any concerns or issues related to articulation that you'd like to share? No

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective? No

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report? No

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

Unfortunately, most of the outreach events were cancelled/postponed last summer due to the pandemic.

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

Currently course delivery mode is completely back to face-to-face which is similar to Fall 2019.

9. Do you have any other news that you'd like to share about your department or institution?

The Department of Statistics and Actuarial Science at SFU was initially planning to be the host and venue for the Statistical Society of Canada Meeting this year. However due to COVID concerns SSC decided to go with virtual mode.

Thompson Rivers University - Kamloops

Representative providing this report: Saeed Rahmati (Math), Suzanne Feldberg (Math), Mateen Shaikh (Stats)

Email address of representative providing this report: srahmati@tru.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

Departures (non-retirement age): Richard Taylor (Math), Xiaoping Shi (Stats), Becky Lin (Data Science)

New hires (fall): Lucas Mol (Math), Yue Zhang (Stats)

Incoming: Kyle Schlitt (Math), three (!) Data Scientists

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Holding steady.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

We completed a program review recently. New Math courses: Math 1220 Logic and Foundations, Math 4240 Differential Geometry.

We are hoping to start a Data Science post-Baccalaureate program in January. There will be a whole slew of new Data Science courses for the new program!

The BSc in Data Science is now official.

4. Are there any concerns or issues related to articulation that you'd like to share?

No.

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

We're hoping to use WebWork more extensively in the coming year.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

On an institutional level, TRU's new General Education requirements have an institutional learning outcome that students will need to take a course that uses "Indigenous Knowledge and Ways." On a departmental level, we're struggling to figure out how it fits within Math, but we have had some opportunities to learn Indigenous perspectives.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

It was great being able to hold the BCSSMC again this year!

One of our students held a “Math Battle” this year (kind of like a Math debate, where opposing high school/ University teams try to poke holes in their opponents Math solutions). We hope to hold it again next year. We also had an “Integration Bee” for Calc 2 students. The Third TRU Undergraduate Math Competition was also held in March.

8. How do your institution’s plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

We’ll be face-to-face! With maybe a bit more on Moodle. Since we have an OL division, the two methodologies are generally kept separate.

9. Do you have any other news that you'd like to share about your department or institution?

That covers everything. It’s been a busy year, with the Program review, the new developments in Data Science, and a record number of Appointments Committees.

Thompson Rivers University – Open Learning

Representative providing this report: [Iain Pardoe](#)

Email address: ipardoe@tru.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

None at this time.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

The last enrolment report showed about 4% down, across the board, but with some shift from students just taking individual courses to more students taking entire programs through Open Learning. However, the previous academic year was a very high growth year for growth, so what we are most likely seeing now is numbers trending back towards pre-pandemic levels. During Covid, enrolments grew at an unprecedented rate (not unexpected as students looked for virtual options). Long term we also expect more competition as other institutions explore online options.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

MATH 1141 (Calculus I), MATH 1241 (Calculus II), MATH 2121 (Linear Algebra), and STAT 1201 (Introduction to Probability and Statistics) are undergoing or have recently undergone major revision.

4. Are there any concerns or issues related to articulation that you'd like to share?

None at this time.

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

The major revision to STAT 1201 (Introduction to Probability and Statistics) will use OpenIntro Statistics and WeBWorK. All new course development in Open Learning encourages use of OERs.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

TRU's "Coyote Project" is a cross-campus initiative to indigenize curriculum in all subject areas.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

None at this time.

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

No change since all our course offerings are online or print correspondence.

9. Do you have any other news that you'd like to share about your department or institution?

Not at this time.

Trinity Western University

Representative providing this report: [Sam Pimentel](#)

Email address of representative providing this report: sam.pimentel@twu.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

[None.](#)

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

[First year calculus enrolment was down this year.](#)

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

[Following an Institutional Prioritization Process TWU has suspended its Mathematics with Computing Science B.Sc. We continue to offer a Mathematics B.Sc. and a Computing Science B.Sc., but we will no longer offer the joint degree program.](#)

4. Are there any concerns or issues related to articulation that you'd like to share?

[None.](#)

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

[We continue to use WeBWorK and recommend a variety of open access textbooks.](#)

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

[None specifically aimed at mathematics.](#)

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

[None.](#)

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

[All courses will be face-to-face as they were in Fall 2019.](#)

9. Do you have any other news that you'd like to share about your department or institution?

[None.](#)

University of British Columbia (Okanagan)

Representative providing this report: [Wayne Broughton](#)

Email address of representative providing this report: wayne.broughton@ubc.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

[In the last few years we have hired three new Assistant Professors of Teaching in mathematics and statistics: Dr. Irene Vrbik, Dr. Lengyi Han, and Dr. Paul Tsopméné.](#)

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

[No](#)

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

- [· Our B.Sc. degree has become more flexible, and no longer requires MATH 101 \(Calculus 2\) for all B.Sc. students.](#)
- [· We have Major programs in Mathematics, Statistics, and Data Science. We have suspended admissions to the old Mathematical Sciences program.](#)
- [· The B.Sc. Major in Mathematics \(there is also still a B.A. version\) now requires either DATA 101 or STAT 121 and MATH 350 \(Complex Variables\), but has more options for 1st-year lab science electives. Students can do the Major with a concentration in Applied Mathematics, Pure Mathematics, Data Science \(replacing Statistics\), or without a concentration.](#)
- [· New course: MATH 103 \(Integral Calculus with Applications to Life Sciences\) includes some probability theory and linear algebra.](#)

4. Are there any concerns or issues related to articulation that you'd like to share?

[MATH 103 will need to be submitted for articulation.](#)

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective? ·

[In Calculus 1 and 2 we have started using the CLP texts \(<https://personal.math.ubc.ca/~CLP/>\). The level of the exercises is a bit high for our students, but I really like the coverage and sequence of topics and the fact that all exercises come with hints, answers, and fully worked solutions. I am not sure yet how “effective” this text is, though: I believe most students just watch videos online if they are stuck on something. I have also used the OpenStax texts and some instructors still do.](#)

· I have also been using WeBWorK for a couple of years in Calculus 2 and I think other instructors might start to do so too.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

This is a work in progress. By 2024 all B.Sc. students will be required to take an Indigenous-focused course, but at this point we still don't have many courses that would qualify. I think we still have a ways to go for deeper and more authentic Indigenization.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

No

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

At this point it is expected that most classes will be in-person, though this past year some instructors chose to make their courses online; that might continue next year too. And some instructors voluntarily use a hybrid model with both in-person and online delivery.

9. Do you have any other news that you'd like to share about your department or institution?

No

University of British Columbia (Vancouver) – Mathematics

Representative providing this report: [Brian Wetton](#)

Email address of representative providing this report: wetton@math.ubc.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

We have hired Lindsey Daniels in an Educational Leadership faculty position. She brings applied math expertise (battery modelling) and has used machine learning to assess student performance.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

We have seen steady increases in both domestic and international enrollment in our classes.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

MATH 100, 102 and 104 will be consolidated into MATH 100, to be renamed “Differential Calculus with Applications”. MATH 101, 103 and 105 will be consolidated into MATH 101, to be renamed “Integral Calculus with Applications”. MATH 180 and 184 will be consolidated into MATH 180, to be renamed “Introduction to Differential Calculus with Applications”. Each of these consolidated courses will retain distinctive “flavours” (Physical Sciences, Life Sciences, etc.). The consolidated courses MATH 100, MATH 101 and MATH 180 will use the small class model. Instead of attending 3-4 hours of lecture per week, a student attends one 2-hour lecture with a large number of students (around 360), and one hour-long *small class* (one two hour-long small class in the case of MATH 180) with a small number of students (around 60). Lectures are run by faculty members with the goal of laying out theoretical groundwork and presenting canonical examples. Small classes are run by two instructors – one graduate or postdoctoral instructor, and one undergraduate TA – with the goal of extending and introducing material in a problem-based, group-based, high-engagement setting. Please contact me if you would like more information about these proposed changes.

We are revising the course, Math 230, to be an outreach course to students who wouldn't otherwise take Mathematics. We have introduced Math 446, History of Mathematics. There is a computationally modelling sequence, Math 360/461, in the works, intended for Math Major students.

We are planning small, bespoke sections for core second-year courses for our Math Majors.

4. Are there any concerns or issues related to articulation that you'd like to share?

Existing transfer credit arrangements for 102 and 104 will now transfer to 100, 103 and 105 to 101, and 184 to 180.

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

We have developed online, open access texts for all calculus courses. These are available at

<https://personal.math.ubc.ca/~CLP/>

There is also a set of online notes for Math 152 (Linear Systems for Engineers). Contact me if you would like a copy of these notes and the current LaTeX source. There is an open source text in progress for our introductory analysis class, Math 220, taken by Math and Statistics Majors and Electrical and Computer Engineering students.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

There are outreach programs run by the Pacific Institute of Mathematical Sciences (<https://www.pims.math.ca/education>) that our department participates in. I believe these have been on hold during the last two years.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

We have outreach to local high schools through Math 414 (Mathematical Demonstrations). We host a Math Circle and the Archimedes Lecture series (for high school students).

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

We are back to face to face instruction "as usual" starting in our Summer 2022 term.

9. Do you have any other news that you'd like to share about your department or institution?

We plan to continue the Calculus Challenge Exam. This is now hosted solely by UBC, though the exam is accepted by a bunch of lower mainland post-secondary institutions. The CCE fulfills two purposes. The first is its original purpose: to give students a way to vault over MATH 100 into MATH 101. (There are also other ways to do this, like by getting IB credit.) The second is to release the CCE and a password-protected grading scheme to teachers after the exam has been written, so they can use it as a test and "reality check" for their own students.

University of British Columbia (Vancouver) – Statistics

Representative providing this report: [Bruce Dunham](#)

Email address of representative providing this report: b.dunham@stat.ubc.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

Prof Nancy Heckman, a faculty member in the department since 1984 and a former head of department, will retire this summer.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Numbers overall on STAT and DSCI courses remained stable compared to the previous year of online-only teaching. Restrictions due to room capacity reduced enrollments on certain courses while additional sections of DSCI 100, STAT 201, and STAT 301 appeared. The cap on students entering a specialisation in statistics was raised to 159.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

The new minor in data science proved popular, with around fifty students in the first cohort. New courses provided by the department included DSCI 310 (Reproducible and Trustworthy Workflows for Data Science), DSCI 320 (Visualization for Data Science) and STAT 301 (Statistical Modelling for Data Science). An increased enrollment, of around 100 students, is expected for the next academic year.

There were changes to our combined majors and honours specialisations. DSCI 100 is now core for all combined programs with both computer science and economics, with STAT 201 an additional requirement for the combined programs with computer science. A motivation for these changes is to enable students to have more exposure to statistical concepts earlier in their programs. There were also some modifications to the upper-level requirements for the combined majors with economics (both BA and BSc versions), increasing flexibility with pathways that permit either STAT 301 or STAT 306.

4. Are there any concerns or issues related to articulation that you'd like to share?

From 2023, entrants to statistics specialisations will require either DSCI 100 or a STAT 1xx/2xx course to qualify.

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

The department makes much use of free online resources for its teaching. These include:
WeBWorK(iR): A free online homework system for mathematics and statistics, incorporating R. See webwork.maa.org and <https://wiki.ubc.ca/Documentation:WeBWorK> for more details.
StatSpace: An online repository for teaching resources in statistical sciences is available at <https://statspace.elearning.ubc.ca>. Colleagues are invited to explore and review existing resources and can also register as an instructor in order to see instructor-only materials and submit their own resources. In addition, the department is developing a repository for RShiny apps on GitHub.
Free online textbooks used, notably for DSCI 100 and STAT 201, include:
Modern Dive: Statistical Inference via Data Science (at moderndive.com) developed by Chester Ismay

and Albert Kim.

OpenIntro Statistics (at www.openintro.org)

Introduction to Data Science (at <https://rafalab.github.io>) by Rafael A. Irizarry.

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

There are ongoing efforts via a student diversity initiative in the Faculty of Science (see skylight.science.ubc.ca/projects/sdi for details). Melissa Lee (Assistant Professor of Teaching), Marie Auger-Méthé (Assistant Professor), and Rowenna Gryba (Ph.D student) have received funding from [UBC's Equity & Inclusion Office](#) for an Equity, Diversity and Inclusion (EDI) Speaker Series in Statistics.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

Bruce Dunham co-taught a class of Statistics 12 at Centennial High School last fall, working with teacher Ms. Anita Do. Materials created for the course, including over eighty in-class activities, will be made available on StatSpace over the summer.

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (i.e., prior to COVID-19), especially in Math and Stats courses?

The plan at present is to return to face-to-face teaching very similar to as pre-pandemic, although some lower-level courses may continue to provide an on-line section (perhaps with in-person exams). The online section of DSCI 100 in term 2 will remain.

9. Do you have any other news that you'd like to share about your department or institution?

Assistant Professor [Trevor Campbell](#) was a winner of the 2021 Blackwell-Rosenbluth Award, which honours noteworthy junior researchers in different areas of Bayesian statistics. Prof Natalia Nolde won the 2021 PIMS Mathematical Sciences Young Faculty Award.

University Canada West

Representative providing this report: [Nam Le](#)

Email address of representative providing this report: nam.le@ucanwest.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

At the university level, we have some changes in our university senior management team:

- Dr. Sheldon Levy was appointed at the President and Vice Chancellor as of March 2022.
- Dr. Maureen Mancuso was appointed as Vice President Academic as of March 2022.
- Dr. Stephanie Chu was re-appointed as Executive Dean as of April 2022.

At the department level, we hired some more sessional faculties to teach math/stat courses

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

- UCW has experienced continued growth throughout the pandemic.
- Our student body currently represents over 100 nationalities with the top percentage of students coming from India (44%), Mexico (6.4%), Sri Lanka (6%), Brazil (5%), Iran (4.4%), and Nigeria (4%).
- Other nationalities represented include Columbia, Philippines, Canada, China, Bangladesh, and Peru.
- We currently have over 8000 students (total) enrolled with over 2400 who just joined us for the Spring 2022 term.
- Please see the student enrollment details in the Table 1 below (enrollment figures include new starters and continuing students).

Student Enrollments (for 3 undergraduate programs)

Programs	2019	2020	2021
BCom	115	201	521
BABC	43	76	164
AA	298	732	1522

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

We recently revised our MATH 200 Statistics to meet the CPA requirement. Also, we developed 2 new courses MATH 201 Business Statistics & MATH 202 Quantitative decision making. MATH 201 and 202 combined together will be equivalent to MATH 200. All of these courses are accepted by CPA-Canada for transfer credits.

4. Are there any concerns or issues related to articulation that you'd like to share? No

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

We have switched to use OER for most of our math/stat courses in the previous year and we will continue to use OER for newly developed courses.

- UCW continues to update courses to use OER textbook and resource options wherever available.
- Our OER committee works with course developers, faculty, and Department Chairs to identify options to update our courses where appropriate.
- Funding is available to incentivize Faculty to update their course using OER options

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

We have a couple of discussions on this topic. The university is encouraging all faculty members to integrate more Indigenous content to our courses.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report? No

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

We are planning for full return to campus starting Summer 2022

9. Do you have any other news that you'd like to share about your department or institution?

- The Arts, Communication, and Social Sciences Department (Bachelor of Commerce, Bachelor of Arts in Business Communication) has been making updates to the core pathway of courses for students to ensure the degree is better aligned with industry requirements for the job market.
- New courses have been added to the degree pathway, and existing courses have been re-designed or refreshed.
- The Bachelor of Commerce degree is currently undergoing an in-depth review by CPA to ensure our Accounting courses align with the professional certification.
- UCW is currently going through the cyclical review process with the Degree Quality Assessment Board (DQAB) for all programs at the university. This involves program review self-study committees, Program Advisory Committee meetings, external review, and various other related activities

University of the Fraser Valley

Representative providing this report: Ben Vanderlei

Email address of representative providing this report: ben.vanderlei@ufv.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

Two of our department members recently retired. Greg Schlitt had been with the department since 1992 and Erik Talvila had been a department member since 2003. We have made offers for two replacement hires but cannot release their names until the contracts are finalized.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

Enrollment levels this year have been down slightly compared to 2020-21. We saw an overall 5% decrease in enrollment in first-year courses, 13% decrease in second-year courses, and steady enrollment in the upper-level courses.

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

We are currently running a fourth-year course in statistical consulting. The instance this Summer is running as a special topics course, but we have plans to develop it into a regular course.

4. Are there any concerns or issues related to articulation that you'd like to share?

We have nothing significant to report.

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

In our STAT 106 course, some instructors have been making use of the following open education resources:

- Introductory Statistics (https://saylordotorg.github.io/text_introductory-statistics/index.html)
- Introductory Statistics (https://assets.openstax.org/oscms-prodcms/media/documents/IntroductoryStatistics-OP_i6tAI7e.pdf)
- OpenIntro Statistics (<https://www.openintro.org/book/os/>)

Shaun Sun has developed an online homework system (EduRITA) that is being used by multiple instructors.

In MATH 118 (Calculus II for Life Sciences) and some sections of MATH 111, instructors have been using an open-source textbook developed by Leah Keshet at UBC. Kseniya Garaschuk has developed coursepacks for 111 and 118 that contain lecture notes, videos, and sample tests. These coursepacks will be made openly available soon. Instructors of MATH 111/112 (Calculus I and II) are planning to use open education resources for all sections beginning next year.

Following the launch of the syzygy service at UFV last year, instructors have incorporated Jupyter notebooks into Linear Algebra (MATH 221) and first-year statistics (STAT 106). We continue to

WeBWork as an online homework system to support Precalculus (MATH 110), Calculus (MATH 111/112), and Discrete Math (MATH 125).

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

We continue to have frequent discussions at the department and faculty level on the Indigenization of our courses.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

We hosted our first BCSSMC event since 2019 and welcomed 62 participants. As a matter of safety, we did not include enrichment activities and large welcoming/closing gatherings as we did in the pre-COVID years.

In Spring 2022, we again ran Science World's Super Science Club program at local schools. This year we have 15 Super Science Club groups, running in the following schools: Matsqui, Mountain, Alexander, Blue Jay, Ten Broeck, Gordie Howe, Mt. Lehman, Centennial Park, Aberdeen, and Greendale. We've hired 17 students to run these groups, with many students running multiple groups (two facilitators per group).

Due to the Science Rocks! Summer camps being cancelled for the past two years during the pandemic, we developed a new program in 2021-22, Science Rocks! Days, consisting of one-day events on campus. We ran three events during Fall 2021 and two events during Winter 2022. In Summer 2022, we plan to again run the summer camps (6 week-long day-camps, 3 on our Abbotsford campus and 3 in Chilliwack). We hire 3 undergraduate science students to run these camps.

We continued to run Science Rocks! in the Community events, running activities with Brownie, Girl Guide, and Pathfinder groups, as well as elementary school visits. In Fall 2021, we had a Science Rocks! activity with Chilliwack Brownies and another with Chilliwack Girl Guides. In Winter 2022, we ran activities with Agassiz Pathfinders, Agassiz Girl Guides, and another with Agassiz Guides and Brownies combined. We also ran two Science Rocks! events at Greendale Elementary Community School in Chilliwack this year.

Super Science Club and Science Rocks! were supported by a WIL (Work-Integrated Learning) grant from the BC Ministry of Education. Science Rocks! was also supported through a grant from the CMS and a grant from the Abbotsford Community Foundation.

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

We plan to offer the majority of our courses face-to-face in Fall 2022, but we will be offering some online sections of our multi-section first-year courses in order to gauge demand for the format.

9. Do you have any other news that you'd like to share about your department or institution?

We have nothing else significant to report.

University of Victoria

Representative providing this report: [Jane Butterfield](#)

Email address of representative providing this report: jvbutter@uvic.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

No

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

No

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

We have recently revised our STAT 252 course (Statistics for Business) at the request of our School of Business. In particular, this course now includes a tutorial component (1 hour weekly). The course ran under this new model for the first time in the 2021/22 academic year.

4. Are there any concerns or issues related to articulation that you'd like to share?

No other changes that would affect articulation.

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

No

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

No

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

No

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

No

9. Do you have any other news that you'd like to share about your department or institution?

No

Vancouver Community College

Representative providing this report: [Costa Karavas](#)

Email address of representative providing this report: ckaravas@vcc.ca

1. Do you have any announcements of new hires or retirements that you'd like to share?

[Dr. Emmanouil Daskalakis](#) became regularized in 2021.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

[No significant changes in enrolment.](#)

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

[The Associate of Science in Computer Science program is relatively new and is starting to attract more students, particularly international students. MATH 2120, Discrete Mathematics II will be offered for the first time.](#)

4. Are there any concerns or issues related to articulation that you'd like to share?

[None.](#)

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

[MATH 1020: Openstax *Precalculus 2e*, by Abramson will be used in Fall 2022.](#)

[MATH 1111: Openstax *Introductory Statistics* by Illowsky et al. will be used in Fall 2022.](#)

[MATH 1100/1200 Calculus I and II: Openstax *Calculus Volume I and II* are used.](#)

[MATH 1221: Applied Linear Algebra: *Linear Algebra with Applications* by Nicholson and/or *A first Course in Linear Algebra* by Kuttler, will be used in Fall 2022.](#)

[VCC has WebWorK installed on its own server in 2022 and faculty are starting to implement it in their courses.](#)

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

[Dr. Robert Daum, founding member of the Board of Directors of Reconciliation Canada, worked with VCC in 2021 to support Indigenization readiness initiatives. Along with Lindsay Heller, they met with 34 individual groups from within the College. In late 2021, a draft Indigenization Planning and Readiness report was reviewed by VCC College stakeholders, including the external Indigenous Education Advisory Committee, College elders, and the IECE department. From January to March 2022, the final report and accompanying presentation were shared with stakeholder groups.](#)

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

Not currently.

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

A mix of offerings. Some courses will be offered online: Precalculus (MATH 1020), MATH 1111 (Statistics). Some courses will be offered face-to-face and some courses will be offered in a hybrid delivery whereby one day a week will be reserved for classroom lecture followed by one day a week by online guided learning activities.

9. Do you have any other news that you'd like to share about your department or institution?

University Transfer Program Renewal is underway.

Western Community College

Representative providing this report: [Hamid Maghzian](#)

Email address of representative providing this report: Maghzianh@gmail.com

1. Do you have any announcements of new hires or retirements that you'd like to share?

This is an initial report from WCC. WCC has been given consent to offer a Bachelor of Hospitality Degree as of November 30, 2021.

WCC will be offering its first courses in the summer term beginning May 31, 2020. Among the courses are:

- a) MATH 099 for students without Math 11
- b) MATH 102 Fundamentals of Mathematics (required)
- c) STAT 224 Introduction to Statistics
- d) Electives are available.

Hamid Maghzian is the instructional lead with the Math courses.

2. Has your institution or department seen significant enrollment changes this year (domestic, international, or overall), or are significant changes expected in the coming year?

[New Program](#)

3. Are there any new or significantly revised programs or courses at your institution that you'd like to let the BCcupms community know about?

[All new program and courses](#)

4. Are there any concerns or issues related to articulation that you'd like to share?

We expect to discover some 

5. Are there any open access resources (texts or homework systems) that your department is using, particularly in first- and second-year transferable courses, that you've found to be particularly effective?

6. Are there any efforts towards Indigenization that have been made in your department, or at your institution, that you'd like to report?

All degree program instructors have taken at least one of the on-line Indigenous-related courses (available from a variety of institutions including BCIT).

WCC has tuition-paid seats for self-identified indigenous persons in each program

WCC has an elder and former VP at NVIT on its Advisory Board.

7. Are there any outreach initiatives that have been made in your department, or at your institution, that you'd like to report?

8. How do your institution's plans for course delivery mode - online vs. face-to-face - for Fall 2022 compare to what they were in Fall 2019 (ie. prior to COVID-19), especially in Math and Stats courses?

Diploma courses are blended but will move to F2F by fall.

Degree courses will all be F2F.

9. Do you have any other news that you'd like to share about your department or institution?

We hope to attend next year's meetings.