



Vancouver Senate

THE EIGHT REGULAR MEETING OF THE VANCOUVER SENATE  
FOR THE 2020/2021 ACADEMIC YEAR

**WEDNESDAY, 14 APRIL 2021**

**6:00 P.M.**

**VIA REMOTE ATTENDANCE**

**1. Senate Membership – Dr Kate Ross**

**a. New Members:**

**Students Members**

Terms from April 1, 2021 to March 31, 2022 and thereafter until replaced. One representative elected from each faculty, two from the Faculty of Graduate and Post-doctoral Studies, and five members at-large

Applied Science  
Laia Shpeller

Arts  
Emmanuel Cantiller

Commerce and Business Administration  
Leonard Wang

Dentistry  
Dee Goyal

Forestry  
Xiutong Tony Jiang

Graduate and Postdoctoral Studies  
Jackson Shumacher  
Lisa White

Land and Food Systems  
Anisha Sandhu (Continuing)

Allard Law

Sebastian Cooper

Medicine  
Dawson Born

Pharmaceutical Sciences  
Kanika Khosla

Science  
Keanna Yu

Members at-large

Dante Agosti-Moro – Faculty of Commerce & Business Administration  
Eshana Bhangu – Faculty of Arts (Continuing)  
Julia Burnham – Faculty of Graduate & Postdoctoral Studies (Continuing)  
Shivani Mehta – Faculty of Science  
Georgia Yee – Faculty of Science

*NB: The Education Student Senator Position transitions in October each year.*

**b. Nominating Committee:**

This is a call for nominations for two (2) student members of Senate to serve on the Senate Nominating Committee until 31 March 2022 and thereafter until replaced. Nominations are due by 4 pm on 30 April 2021 to [christopher.eaton@ubc.ca](mailto:christopher.eaton@ubc.ca). If more than two students are nominated, an election will be held at the May meeting of Senate in accordance with Rule 26 (f) of the *Rules and Procedures of Senate*.

**c. Vice-Chair of Senate**

This is a call for nominations for Vice-Chair of Senate for a term of no more than one (1) year pursuant to Section 37(1)(a) of the University Act. Any senators interested should email their intent to stand for election to [christopher.eaton@ubc.ca](mailto:christopher.eaton@ubc.ca) by 12 noon on 14 April 2021. Should there be more than one candidate, an election will be held under this item after short statements of interest are heard by the Senate from each candidate (or their representative should they be unable to attend the meeting). (approval)

**2. Minutes of the Previous Meetings- Dr Santa Ono**

Meeting of 10 February 2021 (approval) (docket pages 4-25)

**3. Business Arising from the Minutes – Dr Santa Ono**

**4. Remarks from the Chair and Related Questions – Dr Santa Ono**  
(information)

**5. Academic Policy Committee – Dr Kin Lo**

- a. Academic Regulations from the Faculty of Land and Food Systems for Withdrawals, Academic Leave and Letter of Permission (approval) (docket pages 26-28)
- b. New Policy V-102: Examination Hardships and Clashes, in Replacement for Policy J-102 (approval) (docket pages 29-34)

**6. Agenda Committee – Mr J. Max Holmes**

- a. Endorsement in Principal of Indigenous Strategic Plan (approval) (docket pages 35-75)
- b. Amendments to the Rules and Procedures of Senates Regarding Roll Call Votes (approval) (docket page 76)
- c. Amendments to the Rules of Convocation for 2021 (approval) (docket page 77)

**7. Awards Committee – Dr Sally Thorne**

New and Revised Awards (approval) (docket pages 78-88)

**8. Curriculum Committee – Dr Claudia Krebs**

April Curriculum proposals from the faculties of Arts, Graduate and postdoctoral Studies, Medicine and Science (approval) (docket pages 89-178)

**9. Ad Hoc Committee to Review Student Appeals Procedures and Structures – Ms Natasha Rygnestad-Stahl**

Interim Report (information) (docket pages 179-183)

**10. Report from the Provost – Dr Andrew Szeri**

2019-2020 Annual Report on Student Evaluation of Teaching (information) (docket pages 184-200) – with Vice-Provost Moura Quayle and Associate Provost Simon Bates

**11. Report from the Registrar – Dr Kate Ross**

2021-2022 Student Election Results (information) (docket pages 201-202)

**12. Other Business**

Section 16 (b) of the *Rules and Procedures of the Vancouver Senate* states that meetings will adjourn no later than 8:30 p.m. Regrets: e-mail: [facsec@mail.ubc.ca](mailto:facsec@mail.ubc.ca)

*UBC Senates and Council of Senate website: <http://www.senate.ubc.ca>*



# VANCOUVER SENATE

## MINUTES OF 17 MARCH 2021

**DRAFT**

### Attendance

**Present:** J. M Holmes (Vice Chair), K. Ross (Secretary), A. Szeri, S. Parker, S. Bates, J. Olson, G. Averill, B. Frank, J. Benedet J. Innes, S. Porter, M. Aronson, R. Helsley, R. Yada, M. Coughtrie, S. Gopalakrishnan, K. Lo, N. Ford, R. Boushel, J. Bulkan, H. Zerrieffi, J. Dierkes, A. Singh, J. J. Stewart, S. Matsui, A. Collier, K. Smith, A. Greig, P. Englezos, S. Forwell, J. Fox, M. MacPhee, C. Krebs, H. von Bergmann, C. Menzies, S. Grayston, A. Ivanov, Price, C. Jaeger, S. Pelech, S. Thorne, S. Singh, J. G. Stewart, , C. F. Andrew, G. Faulkner, B. Fischer, J. Gilbert, P. Harrison, , M Stewart, A. Dulay, A Fischer, P. Wolf, , L. Burr A. Uzama, A. Zhao, G. Tsiakos, C. J. Greenman, M. Higgins , A. Gonzalez, J. Zheng, D. Agosti-Moro, D. Nguyen, C. Moonias, A. Sandhu, N. Rygnestad-Stahl, N. Pang, D. Liu, J. Burnham, C. Hakim, E. Bhangu, M. Lorenz, A. Alemzadeh Mehrizi T. Yan, T. Benbow

**Regrets:** S. Ono, S. Point, M. MacDougall, D. Kelleher, A. Scott, P. Choi, C. Marshall, M. Kuus, L. Stothers, R. Spencer, H. Leong, M. Tan, C. Godwin, R. Topping, C. Evans,

**Clerk:** C. Eaton

### Call to Order

The Vice-Chair of Senate, Mr J. Maximillian Holmes called seventh regular meeting of the Senate for the 2020/2021 academic year to order at 6:08 pm.

### Minutes of the Previous Meetings

Nick Pang  
Eshana Bhangu

} *That the Minutes of 10 February 2021 be adopted as corrected.*

*The Clerk expressed his apologies to Senator Alemzadeh Mehrizi for misspelling and miss-hyphenating her surname.*

Approved

### Business Arising from the Minutes

**CLIMATE EMERGENCY**

Sally Thorne  
Alex Gonzalez

} *That the Senate endorse in principle the Report  
and Recommendations of the Climate Emergency  
Task Force.*

Senate welcomed Dr Gail Murphy, Vice-President Research and Innovation, to speak to the work of the Climate Emergency Task Force. She noted that they were working diligently to move the recommendations to the right bodies and people for consideration for approval.

Senator Pelech comments said that at the previous Senate he had some concerns with gaps and deficiencies. He said that the document and its actions were comprehensive in some aspects such as social justice but that it didn't speak to prioritizing climate research to propose solutions to the crisis, nor much on the British Columbian context. He also noted that there wasn't much feedback from Forestry, Land and Food Systems, geology, or other relevant academic units.

Vice-President Murphy replies that the report's context was a task force that was intergenerational and interdisciplinary, it tried to create a scaffold that the University can use to address the challenges identified. She noted that there were a number of companion and related reports that addressed some of the specific issues Senator Pelech identified.

Senator Sandhu made a parliamentary inquiry as to what endorsement meant.

The Vice-Chair said that endorsement was used for reports and recommendations but not for specific actions.

The Clerk said that endorsement should be taken as approval in principle of a general direction or a theme in a report, but it doesn't actually imply or mean actual approval of any content therein nor bind the University to any specific actions.

Senator Sandhu suggested that Senate's committees needed to take these recommendations and see how they could be implemented across the University.

Dr Murphy said that they would be working with the sustainability initiative to try to coordinate things

Senator Olson said that the Task Force was co-chaired by an associate dean from Applied Science and he hoped this addressed concerns around consultation with his faculty.

Senator Bulkan described the report as visionary and suggested that we could do a report card on how we are doing in addressing the recommendations in this report.

Dr Murphy said that there was a climate emergency UBC website where they intended to track initiatives and tell people how to get involved. She also noted that the University's annual sustainability report would be broadened to also address more or the climate emergency.

Senator Pelech noted the breadth and the limitations of the Task Force and working group membership. He noted that only 11% of faculty responded and suggested that we could do better with more consultation. He suggested that a Senate committee should be formed to consider and review the report and make recommendations back to the Task Force.

## MOTION TO TABLE

Steven Pelech } *That the motion be tabled.*  
Sue Forwell

Motion to Table  
Not Approved

Senator Burnham said that while a formal motion to refer may not be needed, it would be helpful for the Research and Scholarship Committee to consider the report.

Main Motion  
Approved

*NB: Senator Holmes was in favour*

## Topic of Broad Academic Interest

## INDIGENOUS STRATEGIC PLAN

The Vice-President Academic and Provost, Dr Andrew Szeri, introduced Drs Sheryl Lightfoot and Margaret Moss and Ms Adrienne Vedan.

Dr Lightfoot introduced the plan and Dr Moss and Ms Vedan. Dr Lightfoot noted that they last presented the Indigenous Strategic Plan (ISP) to the Senates last summer. She set out where the plan was presently with implementation and where they were headed. De Lightfoot noted the importance of the United Nations Declaration on the Rights of Indigenous Persons, the Truth and Reconciliation Commission's Calls to Actions, and the Calls to Justice of the National Inquiry into Missing and Murdered Indigenous Women and Girls as context for this work.

Dr Moss set out the ISP planning process, noting that they had over 1200 in-person engagements, 1274 survey responses, and over 15000 suggestions and ideas.

Dr Lightfoot set out the ISP implementation structure. She suggested that we needed to imbed the ISP into most aspects of the University's structure and have everyone be responsible for advancing it. She said that it was important that the ISP not be a box-ticking exercise for academic units, and that different units needed to look at the goals and actions and design priority areas. She then set out the expected oversight of the ISP, including internal and external bodies.

Dr Moss explained the implementation toolkit and workshops being developed to help units with indigenous engagement and implementing the ISP, as well as the performance measurement frameworks being developed.

Senator Pelech asked how the work of the Museum of Anthropology could be incorporated into the document.

Dr Lightfoot said that there were many initiatives at UBC and they only had a limited amount of space to highlight certain activities in the document; not all could be included. With specific regard to the Museum of Anthropology, she noted the complex history there.

Senator Sandhu thanked the presenters for the presentation and encourage committee chairs to review and consider the ISP at upcoming Senate committee meetings.

Senator Menzies commented on what his own department of Anthropology had done in looking at the ISP, including curriculum and hiring. He noted the past issues with "box ticking" at UBC and said that this plan gave us the possibility of doing something different, but this would take some work. He suggested that he would be happy to speak to senators to what it has been like to implement such things at a department.

Senator Hakim noted that implementing this plan would be an important responsibility for the Senate.

Senator Thorne said that she was proud to be part of a University that had such a document and was especially pleased that the ISP both pushed UBC but also made room for initial steps. She said that this was a difficult balance to have achieved.

Senator Averill commented on respecting department and faculty decision making and not just viewing them as implementation and record keeping. He suggested that decision making needed to happen at every level of the institution as departments and faculties needed to be accountable and take responsibility for this plan's success.

Senator Pang asked how the Senate could consider amendments to the *University Act* to better align our governance structures to the ISP.

Dr Lightfoot suggested that the Senate should assess where we are at, sort out what principles needed to be considered, have discussions internally and then expand those externally. She said that the people of UBC had a wealth of ideas on how to action things. She said that the challenge was how to balance indigenous and non-indigenous voices in those conversations. She said that she expected legislative changes in light of the *UNDIRP Act*.

The Clerk said that there were ways of working within the existing *University Act* such as has been done at the University of Northern British Columbia, but some newer universities with their own legislation in other jurisdictions, such as Yukon University, had found interesting ways to address this.

Senator Szeri asked if Senate should consider its own internal committee structure, such as the Board had done with its Indigenous Engagement Committee

Dr Lightfoot also suggested considering how Yukon University was approaching indigenous engagement. She spoke against the idea stand-alone committees to address indigenous matters, instead suggesting that it should be everyone and every committee's responsibility.

### Academic Policy Committee

The Chair of the Senate Academic Policy Committee, Dr Kin Lo, presented.

### PHD FUNDING

Kin Lo	}	<i>That Senate approves revisions to the Minimum Funding for Ph.D. Students Academic Calendar entry set out in the proposal.</i>
Michael Coughtrie		

Senator Lo set out the background for the proposal, noting that the specific amount in the previous entry would now be variable as determined each year by the Graduate Council.

Senator Pelech question on if four year fellowship amounts would go up accordingly as these were currently the same \$18000 that was set as a minimum, and if there would be similar proposals for master's students.

Senator Dierkes replied that for vast majority of PhD Students, the four year fellowship covers it, but for a small number of 4<sup>th</sup> year PhD students departments will need to make up the difference. He noted that the Graduate Council was considering how to implement something similar for Master's students.

Senator Zhao on differences between international and domestic fees and if the funding would be differentiated.

Senator Dierkes said that this not related to the proposal but that the proposal did not differentiate between domestic and international students so this wasn't considered.

Approved

## TIME ZONE CONSIDERATIONS FOR FINAL EXAMINATIONS

Senator Lo noted that the Senate Academic Policy Committee held an extraordinary meeting on 9 March 2021 to discuss a potential addendum to Policy J-102: *Examination Hardships and Clashes* brought forward by AMS student leadership. The proposal set out criteria for a time zone examination hardship and options for instructors whose students may request exam scheduling changes. Dr Lo advised that the Committee ultimately did not recommend the change to the policy, instead recognizing the applicability of Policy V-135: *Academic Concession*. Various members noted many instructors and deans' offices have already been providing these sorts of concessions, either formally or informally, and this report is a reminder to the Senate of their applicability. The Committee noted that UBC's Academic Concession policy is predicated on the principles of transparency, flexibility, and compassion, while maintaining the academic integrity of the University. As academic concessions, instructors, heads and deans may allow students to write examinations at another time should the normal examination time be unreasonable given the time zone in which they currently reside, or instructors may offer different but comparable final assessment for students in those circumstances. The Committee agreed that this may be a challenge for some courses, especially those with very large enrolments; however, in light of the above principles—especially flexibility and compassion given the extraordinary circumstances this year—the Committee encourages faculty to remain mindful of these values when considering requests for academic concessions.

Senator Burnham noted the importance of communication of the availability of academic concession and that the Senate had previously had problems with both current and new policy directives being communicated to deans.

## Awards Committee

The Chair of the Senate awards Committee, Dr Sally Thorne, Presented.

## MARCH AWARDS REPORT

*See Appendix A: Awards Report*

Sally Thorne  
Gage Averill

}

*That Senate accept the new awards as listed, that they be forwarded to the Board of Governors for approval, and that letters of thanks be sent to the donors.*

Approved

**LANDO LITERARY PRIZE**

Sally Thorne  
Claudia Krebs

}

*That Senate accept the establishment of the “The Lando Literary Prize on the Immigrant/Refugee Experience” to be awarded annually according to the attached guidelines*

Dr Thorne noted that this new literary award was in the context of a larger endowed initiative.

Approved

**Curriculum Committee**

The Chair of the Senate Curriculum Committee, Dr Claudia Krebs, presented.

**MARCH CURRICULUM PROPOSALS**

*See Appendix B: Curriculum Report*

Claudia Krebs  
Tarique Benbow

}

That the new program and courses brought forward by the faculties of Arts, Graduate and Postdoctoral Studies (Arts, Commerce and Business Administration, Education, Medicine, and the Peter A. Allard School of Law), and Pharmaceutical Sciences be approved

Approved

**EFFECTIVE DATE FOR COURSE CODE CHANGES**

Claudia Krebs  
HsingChi von Bergmann

}

*That the addition of \_O and \_V to course codes from July 1, 2005 onwards be approved.*

Dr Krebs noted that the substantive decision to use the \_O and \_V signifiers was already made by Senate, this decision now was to set an effective date, in this case the proposal was that this date as per the establishment of the Okanagan campus of UBC.

Approved

**Research & Scholarship Committee**

The Chair of the Senate Research and Scholarship Committee, Dr Guy Faulkner, presented.



## REVISIONS TO CRITERIA FOR GLOBAL RESEARCH EXCELLENCE (GREX) INSTITUTES

Guy Faulkner	}	<i>That Senate approve the revised criteria for Global Research Excellence (GREx) Institutes as set out in the attached.</i>
Lawrence Burr		

Senator Faulkner noted that his Committee had considered revised Global Research Excellence (GREx) Institutes criteria from the Vice-President Research and Innovation and was pleased to recommend them to the Senate. Dr Faulkner noted that in 2016 the GREx categorization was established. Since then, two had been established and a third was under development.

Approved

*By general consent, the Senate recessed for two minutes.*

## Teaching & Learning Committee

### USE OF REMOTE INVIGILATION

Joanne Fox	}	<i>That Senate approve in principle the Guiding Principles for Remote Invigilation and direct the Faculties to restrict the use of remote invigilation tools that involve automated recording and algorithmic analysis of data captured during invigilation to only cases explicitly requiring 'remote proctoring software' by external accreditation bodies, effective immediately.</i>
Dante Agosti-Moro		

Senator Fox set out the background to the proposal. She noted the concerns raised around equity, racial discrimination, and privacy from students with the use of such software. Given the severity of the concerns raised, her committee undertook a consultation process to review the matter and recommend actions to the Senate. Dr Fox said that her Committee identified a number of serious concerns with the use of this software that were occurring currently at UBC and that the Committee has concluded that these concerns were not acceptable to be continued at UBC. The Committee recognizes that there was no solution without flaws. In particular, Dr Fox said that the Committee recognized that this motion would have a negative impact on some faculty member's plans for the upcoming examination term. Further, Dr Fox noted that while the use of such software was low across all of UBC, the Committee did realize that the impact would be unequal across UBC, with professional programs posed with more challenges. She noted that there was a specific exception being made for those professional programs where the use of such software was required by accreditation. She did note that the Committee considered a later effective date, but did not think that appropriate given the concerns around racial discrimination. In closing, Dr



Fox noted that the Committee realized that there were ongoing concerns regarding academic integrity at UBC and had struck a working group to look further into that matter.

Senator Singh spoke in favour of the proposal.

Senator Forwell thanked committee for their due diligence in considering this situation and for the clarity of their report. She agreed with the issues noted as well as the recognition that these tools were being used more in the ongoing pandemic. She noted that her own program as well as to her knowledge at least four others would have a problem with implementing this decision. She said that they had a social contract with the public to have component practitioners and they had to be able to demonstrate that they had been properly evaluated. Dr Forwell said that the programs weren't aware that this was under review until a week prior, and final exams were only in three weeks. She said that the implementation should be delayed until after the April exam term.

#### AMENDMENT TO EFFECTIVE DATE

Sue Forwell	}	<i>That the word "immediately" be struck and</i>
Michael Coughtrie		<i>replaced by "10 May 2021".</i>

Senator Bhangu said that she appreciated Senator Forwell's concerns but spoke against amendment noting the racial and ethical issues with this software. She said that if we acknowledged this software as being discriminatory we shouldn't be willing to tolerate it for another month. She went on to say that we should provide support and capacity for faculty members to move away from using such products.

Senators Burnham and Agosti-Moro agreed with Senator Bhangu.

Senator Coughtrie spoke in favour of the amendment for the health disciplines

Senator Jaeger in favour of the amendment.

Senator Nguyen against the use of remote proctoring software in the health disciplines.

Senator Zerriffi spoke against the amendment and noted that issues with some of these software programs were long known and instructors could have chosen a different way of doing examinations knowing the issues and uncertainty.

Senator Gopalakrishnan said that he had mixed views on the main motion and the amendment, recognizing the issues with this software and also the issues around proctoring large examination sections. He said that while he supported a long-term strategy he was inclined to make an exception for this term given that the University re-affirmed its use of this software by renewing its contracts earlier this term.

Senator Hakim spoke to the issues with algorithmic analysis software but noted that programs that required its use wouldn't not be affected while other programs should use alternatives.

Senator Krebs said that she respected the urgency in making a decision immediately. She noted that in admission to health disciplines, we considered the public trust requirements for applicants. Dr Krebs noted that quickly UBC pivoted last year to online instruction and assessment and we should be creative enough to assess students next month without using this software.

Senator Gonzalez asked Senator Fox how many courses at UBC used such software.

Senator Fox clarified that 4% of UBC courses were thought to use this software.

Senator Gonzalez asked if there was adequate support for faculties to implement this decision now and if not, what would be needed.

Senator Forwell replied that last year they couldn't move quickly enough and exams were deferred until the fall in those cases. She said that she didn't know what resources would be required to have this implementable right away.

*Senator Menzies attempted to call the previous question as a point of order.*

*The Chair ruled that the point of order of Senator Menzies to ask for the previous question to be called was not well taken as a motion to call the previous question could not be called as a point of order. The Senator was informed that he could move the previous question once recognized to speak on the amendment.*

*By general consent, the time to adjourn was extended by 45 minutes.*

#### ROLL CALL VOTE

Morgan Lorenz	}	<i>That this amendment be considered by a roll call vote.</i>
Julia Burnham		

Senator Lorenz said that these discussions deserved transparency to the greater population given the importance of this matter.

Approved

Senator Alemzadeh Mehrizi spoke against the amendment as we shouldn't tolerate discrimination until a future date. She said that there were solutions available to instructors for next term. She noted that accepting the use of this software spoke against the goals of many university strategic plans.

### MOTION TO CALL TO THE PREVIOUS QUESTION

Charles Menzies                                }  
 Alex Gonzalez                                }     *That the question of the amendment be now put.*

Approved

Yes - 14	No - 45
Jaeger, Lo, Parker, Francis, Forwell, Gopalakrishnan, Olson, A. Singh, Coughtrie, Aronson, Dulay, Fisher, Helsley, Collier	Pelech, Fox, Bates, Krebs, S. Singh, Boushel, Szeri, Sandhu, Greenman, Nguyen, Agosti- Moro, Gonzalez, Zheng, Hakim, Faulkner, Zerriffi, Ford, Thorne, Wolf, Dierkes, Pang, Bulkan, J. S. Stewart, Englezos, Ivanov, Liu, Grayston, Benbow, Alemzadeh Mehrizi, Topping, Fischer, Uzama, Evans, Holmes, Bhangu, Moonias, Innes, Burnham

Amendment Not  
Approved

NB: Benedet and Menzies abstained.

Senator Agosti-Moro asked if the administration could speak to what support was available to faculty members and how this would be communicated.

Senator Bates set out the plan for communication with faculties and faculty members tomorrow should the motion be approved with supports and resources available.

Senator Jaeger said that here were ways to modify the way in which the software was used to alleviate the concerns with its use. She noted that at a recent Engineering accrediting body meeting they noted that 25% of students reported that they had engaged in academic misconduct during COVID vs 5% before. Senator jaeger said that she was concerned by the state of academic integrity at universities. She asked if SDs or other delayed assessment was an option until we can do so in person again. She noted that assignment of grades was a question of academic merit.



Senator Fox said that her Committee had discussed using existing mechanism like SDs when reasonable as a result of responses to consultation. A downside of that was that student programs may be delayed or uncertain.

The Associate Registrar, Mr Eaton, noted that students could only be given SDs at their request.

Senator Bates said that live proctoring was an option however many of those services operated outside of Canada so privacy concerns were an issue,

Main Motion  
Approved

## Reports from the Provost

### END OF STUDENT TERMS ON SENATE

Dr Szeri noted that 31 March marked the end of terms for the current student senators and that many of them would not be returning for the next year. He thanked all of them for their service to their University.

### BLOOD RESEARCH CENTRE (BRC)

Andrew Szeri	}	That the Senate approve and recommend to the Board of Governors the disestablishment of the Biomedical Research Centre.
Claudia Krebs		

Senator Pelech noted that he was a founding member of the BRC and while he understood the Centre had run its course, there was some sadness in this as the Centre had achieved some great things in its time,

Approved

## Adjournment

Seeing no other business, the meeting was adjourned at 9:03 pm.



## Appendix A: Awards Report

### NEW AWARDS – ANNUAL

#### **Bimema Family Award in Teacher Education**

Awards totalling \$2,000 have been made available through gifts from supporters, faculty, and staff members of the Faculty of Education, for Bachelor of Education students who identify as Black and have achieved good academic standing. The awards are made on the recommendation of the Faculty of Education. (First award available for the 2021/2022 winter session).

#### **Implant Genius Scholarship in Prosthodontics**

Scholarships totalling \$4,000 have been made available annually through a gift from Implant Genius for outstanding second or third-year students in the Combined M.Sc. and Diploma in Prosthodontics program. Preference will be given to students who show an interest in implant treatment planning. Dr. Kevin Aminzadeh (B.Sc. Pharm 1996, D.D.S., M.Sc.) is a Board Certified Prosthodontist and a Fellow of The Royal College of Dentists of Canada. He is an expert in dental implant treatment planning, and founded Implant Genius in 2015 to help general dentists place and restore dental implants. The scholarships are made on the recommendation of the Faculty of Dentistry, in consultation with the Faculty of Graduate and Postdoctoral Studies. (First award available for the 2021/2022 winter session).

#### **Insolvency Institute of Canada Prize in Insolvency Studies**

A \$1,000 prize has been made available annually through a gift from the Insolvency Institute of Canada for an outstanding J.D. student who has excelled in an insolvency course. The prize is made on the recommendation of the Peter A. Allard School of Law. (First award available for the 2020/2021 winter session).

#### **Stewart Paulson Memorial Scholarship in Land and Food Systems**

A \$2,000 scholarship has been made available annually through gifts from family and friends in memory of Stewart Paulson (1945-2020) for a outstanding graduate student in the Faculty of Land and Food Systems whose thesis focuses on (1) sustainable poultry production or marketing or (2) sustainable animal production or marketing. Stewart (B.Sc. (Agr) 1968, M.Sc. 1970) began his career at the Poultry Division of the Department of Agriculture in Ottawa, Ontario after completing his graduate education at the University of California, Davis. He then worked as an industrial market researcher before returning to government work, joining the BC Ministry of Agriculture as a Poultry Industry Specialist. Stewart served as a liaison between the provincial government, UBC and the poultry industry in British Columbia, and played an integral role in the establishment of the BC Sustainable Poultry Farming Group and the UBC Specialty Birds Research Fund. Later in his career, he developed a biosecurity and insurance policy for the industry to implement to help lessen the impact of future outbreaks of avian influenza or other epidemics. The scholarship is made on the recommendation of the Faculty of Land and Food Systems, in consultation with the Faculty of Graduate and Postdoctoral Studies. (First award available for the 2021/2022 winter session).

#### **Adrian Semmelink Memorial Award**

Awards totalling \$1,000 have been made available annually through gifts from friends and family in memory of Adrian Semmelink (1991-2020) for M.A., M.Sc. and Ph.D. students in the Resources, Environment and Sustainability program who are in good academic standing. Preference will be given to students whose research focuses on sustainable agriculture. Adrian (B.A. 2015, B.Sc. 2015, M.Sc. 2018) joined the BC Ministry of Agriculture as a New Entrant Agrologist after graduating from the Resources, Environment and Sustainability program in 2018. His research was interdisciplinary and sought to enable farmers to grow food in socially responsible and ecologically

sensitive ways, and to understand what motivates farmers to adopt more sustainable agricultural practices. The awards are made on the recommendation of the Institute for Resources, Environment and Sustainability, in consultation with the Faculty of Graduate and Postdoctoral Studies. (First award available for the 2021/2022 winter session).

## **NEW AWARDS – INTERNAL**

### **Go Global Virtual Exchange Award**

Awards of up to \$500 each have been made available annually for undergraduate and graduate domestic UBC students participating in a virtual international program through Go Global. The awards are offered to help offset the additional program costs of attending a virtual international program. The awards are made on the recommendation of Go Global. (First award available for the 2020/2021 winter session).

### **Go Global Virtual Exchange Award (International)**

Awards of up to \$500 each have been made available annually for undergraduate and graduate international UBC students participating in a virtual international program through Go Global. The awards are offered to help offset the additional program costs of attending a virtual international program. The awards are made on the recommendation of Go Global. (First award available for the 2020/2021 winter session).

## **PREVIOUSLY APPROVED AWARDS WITH CHANGES IN TERMS OR FUNDING SOURCE**

### **Annual Awards**

#### **Jennifer Kryworuchko Memorial Scholarship in Nursing**

##### **Rationale for Proposed Changes**

More biographical information has been added to the description.

##### **Current Award Description**

Scholarships totalling \$2,000 have been made available annually through gifts from family and friends in memory of Jennifer Kryworuchko (1969-2019) for outstanding M.S.N. and Ph.D. students in the School of Nursing whose thesis is focused on patient-provider communication, such as shared decision-making. Dr. Kryworuchko (B.Sc.N., Ph.D., RN CNCC(C)) joined UBC in 2015 as an Associate Professor in the School of Nursing. She was highly respected and admired for her passionate dedication to nursing practice, her joy and remarkable talent in teaching nursing students, and her research to improve nursing care, especially the improvement of palliative care access through shared decision-making between patients and health professionals. Jennifer was instrumental in improving interprofessional clinician guidance for the BC Centre for Palliative Care. Tragically, our community lost Jennifer in the prime of her life due to ovarian cancer. This scholarship was established to commemorate Jennifer's exemplary contributions to nursing education and research. The scholarships are made on the recommendation of the School of Nursing, in consultation with the Faculty of Graduate and Postdoctoral Studies. (First award available for the 2021/2022 winter session).

##### **Proposed Award Description**

Scholarships totalling \$2,000 have been made available annually through gifts from family and friends in memory of Jennifer Kryworuchko (1969-2019) for outstanding M.S.N. and Ph.D. students in the School of Nursing whose thesis is focused on patient-provider communication, such as shared decision-making. Dr. Kryworuchko ([B.Sc.N., Ph.D., RN CNCC(C)]) joined UBC in 2015 as an Associate Professor in the School of Nursing. She was highly respected and admired for her passionate dedication to nursing practice, her joy and remarkable talent in teaching nursing students, and her research to improve nursing care, especially the improvement of palliative care access



through shared decision-making between patients and health professionals. Jennifer's work to improve palliative care access through shared decision-making between patients and health professionals was exceptional. Jennifer She was instrumental in improving enhancing interprofessional clinician guidance for the BC Centre for Palliative Care. Tragically, our community lost Jennifer in the prime of her life due to ovarian cancer. This scholarship was established to commemorate Jennifer's exemplary contributions to nursing education and research. The scholarships are made on the recommendation of the School of Nursing, in consultation with the Faculty of Graduate and Postdoctoral Studies. (First award available for the 2021/2022 winter session).

## **NEW AWARDS – ENDOWED**

### **Backman Family Graduate Scholarship in Forestry**

Scholarships totalling \$6,000 have been made available through an endowment established by Charles Backman (B.S.F. 1976, M.B.A. 1986, M.A., Ph.D., Ph.D.), along with matching funds from the Faculty of Forestry, for outstanding M.A.Sc., M.F., M.Sc. and Ph.D. students in the Faculty of Forestry who are (1) on exchange outside of British Columbia or (2) conducting international field research or focusing on international forestry issues for their thesis. The Backman family's links to the British Columbia forestry industry go back to the early 1900s. Charles' parents Arvid "Bill" Backman (1919-1998) and Elizabeth Backman (1923-2016) attended UBC in the 1940s. Bill (B.A.Sc. 1943, M.F. 1993) served as Treasurer of the AMS from 1942 to 1943, and completed his Master of Forestry in 1993 at age seventy-four. Elizabeth (B.A. 1945, B.S.W. 1946) received the 125th Anniversary of the Confederation of Canada Medal in 1992 in recognition of her volunteer work. Charles had a long career in academia and forest resource management. He has earned five university degrees, and continues to be a lifelong learner. The scholarships are made on the recommendation of the Faculty of Forestry, in consultation with the Faculty of Graduate and Postdoctoral Studies. (First award available for the 2021/2022 winter session).

### **Computer Science Student Society Class of 2020 Award**

Awards totalling \$1,200 have been made available through an endowment established by the Computer Science Student Society for Bachelor of Arts and Bachelor of Science students majoring in Computer Science who have demonstrated leadership, community engagement and volunteerism within the community. This award was initiated by the 2020 Computer Science Student Society to celebrate the Computer Science Graduating Class of 2020, whose graduation ceremony was impacted by the 2020 COVID-19 pandemic. The awards are made on the recommendation of the Department of Computer Science. (First award available for the 2020/2021 winter session).

### **Robert A. J. McDonald Memorial Scholarship in History**



Awards totalling \$3,150 have been made available through an endowment established by friends, family and colleagues in memory of Robert A. J. McDonald (1944-2019), along with matching funds from the Faculty of Arts, for outstanding graduate students in the Department of History specializing in the history of British Columbia. Dr. McDonald (B.A., M.A., Ph.D. 1977) grew up in Brandon, Manitoba, and relocated to Vancouver to complete his Ph.D. at UBC, where he became an Assistant Professor of History in 1978. He was a leading historian of British Columbia, editing the journal *BC Studies* and serving as president of the Vancouver Historical Society. Dr. McDonald taught Canadian history for more than thirty years, during which he touched the lives of thousands of students, and received the Killam Teaching Prize in 2000 in recognition of his dedication to his students. This scholarship was established in recognition of Dr. McDonald's achievements as a historian and as a professor. The scholarships are made on the recommendation of Department of History, in consultation with the Faculty of Graduate and Postdoctoral Studies. (First award available for the 2021/2022 winter session).

#### **Richard Rusk Memorial Scholarship in Architecture**

Scholarships totalling \$2,000 have been made available through an endowment established by the Christopher Foundation in memory of Richard Rusk (1952-2020) for outstanding Master of Architecture students. Richard grew up in Calgary, Alberta, and relocated to Vancouver, British Columbia to attend UBC. He was the founder and principal of Vancouver-based architectural firm REL Design and Development Limited. Richard designed and built homes inspired by West Coast design, and his work can be seen across British Columbia, as well as in Calgary, California and Hawaii. The scholarships are made on the recommendation of the School of Architecture and Landscape Architecture, in consultation with the Faculty of Graduate and Postdoctoral Studies. (First award available for the 2021/2022 winter session).

#### **Bill Stothard Memorial Award in Astronomy**

Scholarships totalling \$2,000 have been made available through an endowment established by the Stothard Family in memory of Bill Stothard (1898-1967) for graduate students specializing in Astronomy with outstanding academic and research achievements, with preference given to students who have demonstrated a commitment to astronomy outreach or public engagement. If, in any given year, there are no eligible graduate students then the award may be given to an undergraduate third or fourth-year B.Sc. student majoring in Astronomy. Bill had expressed early interest in astronomy even before emigrating from his Grassmoor, England birthplace at age seven. He grew up in Brandon, Manitoba where he became a skilled machinist and welder. He then travelled North America as a young man, eventually settling in Vancouver, where he worked in his trade until retirement. Astronomy was his avocation throughout his life, not only viewing the night skies but also constructing his own telescopes for this purpose. Bill's family established this award to honour his memory and his lifelong interest in astronomy. These academic awards are made on the recommendation of the Department of Physics & Astronomy,



and in the case of a graduate student, in consultation with the Faculty of Graduate and Postdoctoral Studies. (First award available for the 2021/2022 winter session).

## NEW AWARDS – ANNUAL

### **Brock Douglas Cheadle Graduate Scholarship in Architecture**

Scholarships totalling \$2,000 have been made available annually through a gift from Henriquez Partners Architects in memory of Brock Douglas Cheadle (1950-2020) for outstanding students entering the Master of Architecture program. Preference will be given to students who are entering the M.Arch. program at least five years after completing their undergraduate degree. Brock (B.Arch. 1988) practiced as an architect for thirty years. He was inspired to pursue architecture in his thirties after designing and constructing his family's home on a rural property near Grand Forks, British Columbia. During his seventeen year tenure at Henriquez Partners Architects, among the many projects he worked on, one of the most notable was as the lead architect for the Guest House in Gordon B. Shrum's residence, a project that was awarded the *Canadian Architect* Award of Merit in 2002. Brock served as a mentor to anyone who had the privilege to work alongside him throughout his career. The scholarships are made on the recommendation of the School of Architecture & Landscape Architecture, in consultation with the Faculty of Graduate and Postdoctoral Studies. (First award available for the 2021/2022 winter session).

### **Ralph and Barbara James Memorial Scholarship in English**

Scholarships totalling \$2,000 have been made available annually by Arlene James through a gift from the Ralph and Barbara James Family Fund held at the Jewish Community Foundation of Greater Vancouver, in memory of her parents, Ralph James (1923-2014) and Barbara James (1929-2020). The scholarships are for outstanding Bachelor of Arts students majoring in English Literature. Ralph was born in Vancouver, British Columbia and received a Bachelor of Commerce from UBC in 1947 after serving with the Canadian Army in World War II. He started his own business, Ralph's Auto Supply, in 1961. Barbara (née Fingard) was born in Winnipeg, Manitoba, and moved with her family to Vancouver at age sixteen. She took home economic classes at UBC, and enjoyed fishing, boating, and traveling. Ralph and Barbara were voracious readers and committed to education, and this scholarship was established in their memory to encourage students in their study of literature. The scholarships are made on the recommendation of the Department of English Language and Literatures. (First award available for the 2021/2022 winter session).

### **McEwen Family Entrance Award in Biomedical Engineering**

A \$25,000 renewable entrance award has been made available annually through a gift from Dr. Jim McEwen, OC (B.A.Sc. 1971, Ph.D. 1975, D.Sc. 2011) and his family for a Bachelor of Applied Science student entering the Pre-Biomedical Engineering program who is a Canadian citizen and has demonstrated academic achievement, leadership and entrepreneurial initiative in the field of biomedical engineering. Subject to continued academic achievement and demonstrated initiative in biomedical engineering innovation, the award will be renewed for a further year of study. Dr. McEwen is a biomedical engineer, innovator and entrepreneur who invented the microprocessor-controlled automatic tourniquet system, a medical device which improves surgical safety and is used in over 20,000 procedures daily in operating rooms worldwide. Founder of the Biomedical Engineering Department at the Vancouver Hospital & Health Sciences Centre in 1975, Dr. McEwen is an Officer of the Order of Canada, was inducted into the United States National Inventors Hall of Fame, and has received a Queen Elizabeth II Diamond Jubilee Medal, honorary doctorates from the University of British Columbia and Simon Fraser University, and the Meritorious Achievement Award from the Association of Professional Engineers of British Columbia. This academic award is made on the recommendation of the School of Biomedical Engineering. (First award available for the 2021/2022 winter session).

**NEW AWARDS – INTERNAL****Department of History Master of Arts Thesis Prize**

A \$1,000 prize has been made available annually by the Department of History for an outstanding Master of Arts in History student who has written the best M.A. thesis. The prize is made on the recommendation of the Department of History. (First award available for the 2020/2021 winter session).

**Department of History Teaching Assistant Award**

A \$500 award has been made available annually by the Department of History for an outstanding M.A. or Ph.D. student in the Department of History who was nominated for a Killam Teaching Assistant Award. The award is made on the recommendation of the Department of History, in consultation with the Faculty of Graduate and Postdoctoral Studies. (First award available for the 2020/2021 winter session).

**Department of Language and Literacy Education Award in French**

Awards are offered annually by the Department of Language and Literacy Education for Bachelor of Education students in the Faculty of Education on the Vancouver and Okanagan campuses who have successfully completed a French course or workshop offered by the Department of Language and Literacy Education. The awards are made on the recommendation of the Department of Language and Literacy Education. (First award available for the 2020/2021 winter session).



## **PREVIOUSLY APPROVED AWARDS WITH CHANGES IN TERMS OR FUNDING SOURCE**

### **Endowed Awards**

#### **7917 – University of BC Rehabilitation Sciences Alumni Bursary**

##### **Rationale for Proposed Changes**

The description has been updated to use the language “Bursaries totalling” to allow for more flexibility when assigning the award.

##### **Current Award Description**

Two bursaries of \$3,200 each, one to first or second year student in the Master of Physical Therapy Program and one to a first or second year student in the Master of Occupational Therapy Program and are based on financial need, participation in school and community activities, and academic standing. The recommendation is made by a joint faculty-alumni-student committee in consultation with Enrolment Services from the applications received.

##### **Proposed Award Description**

Bursaries totalling \$6,400 have been made available through an endowment established by the School of Rehabilitation Medicine Undergraduate Society for Two bursaries of \$3,200 each, one to first or and second-year student in the Master of Physical Therapy Program and one to a first or second year student in the Master of Occupational Therapy Program students and are based on financial need, participation in school and community activities, and academic standing. The recommendation is made by a joint faculty-alumni-student committee in consultation with Enrolment Services from the applications received.

### **Annual Awards**

#### **Anderson Family Bursary in Business**

##### **Rationale for Proposed Changes**

More biographical information has been added at the request of the donor.

##### **Current Award Description**

Bursaries totalling \$25,000 have been made available annually through a gift from Ron Anderson for female students in the Bachelor of Commerce program. Ideally, the bursaries will be assigned to at least three recipients. Three generations of the Anderson Family have received Bachelor of Commerce degrees from UBC: Ron Anderson (B.Com. 1979), his father, Donald McLeod Anderson (B.Com. 1948) and his daughter, Dominique Anderson (B.Com. 2015). These bursaries were established to help make pursuing an education in business more accessible to female students who face financial barriers. The bursaries are adjudicated by Enrolment Services. (First award available for the 2021/2022 winter session).

##### **Proposed Award Description**

Bursaries totalling \$25,000 have been made available annually through a gift from Ron Anderson for female students in the Bachelor of Commerce program. Ideally, the bursaries will be assigned to at least three recipients. Three generations of the Anderson Family have received Bachelor of Commerce degrees from UBC: Ron Anderson (B.Com. 1979), his father, Donald McLeod Anderson (B.Com. 1948) and his daughter, Dominique Anderson (B.Com. 2015). These bursaries were established to help make pursuing an education in business more accessible to female students who face financial barriers. The family hopes these students, if and when successful in the future, may give something back to UBC Sauder School of Business to assist female students. The bursaries are adjudicated by Enrolment Services. (First award available for the 2021/2022 winter session).



January 21, 2021

From: Suzanne Scott, Assistant Dean, Development & Alumni Engagement, Faculty of Education, UBC

To: UBC Vancouver Senate

Re: The Lando Literary Prize on the Immigrant/Refugee Experience

Motion: *“That Senate accept the establishment of the “The Lando Literary Prize on the Immigrant/Refugee Experience” to be awarded annually according to the attached guidelines.”*

Under the *University Act* Section 37.1 (j), power is invested in a university’s Senate “to award fellowships, scholarships, exhibitions, bursaries, and prizes” on behalf of the University. The Faculty of Education requests the UBC Vancouver Senate approve the establishment of the Lando Literary Prize on the Immigrant/Refugee Experience.

The Lando Literary Prize on the Immigrant/Refugee Experience was created by Mr. Barry Lando, son of the late Edith Lando, in partnership with the UBC Faculty of Education. The prize will be awarded to a national or international author who has written an outstanding book on the refugee/immigrant experience. The prize is administered by the Faculty of Education. Publishers will submit nominations for the prize, and a shortlist of three titles will be identified before a single winner is selected. The prize will be valued at \$2,000 and will be awarded each spring. The inaugural prize will be awarded in spring 2021.

Edith Lando (1917-2003) held senior volunteer leadership roles in many refugee/immigrant support services organizations throughout her lifetime. In December 2019, the Edith Lando Charitable Foundation committed \$1 million to support the Lando UBC Professorship in Refugee and Immigrant Youth and Family Counseling. Given the Lando Family’s continued interest in supporting refugee and immigrant youth and families, this literary prize is an extension of their generosity and compliments their existing Professorship.



## Guidelines for the Lando Literary Prize on the Immigrant/Refugee Experience (Administered by the Faculty of Education at the University of British Columbia)

### 1. Donor Information

The Lando Literary Prize on the Immigrant/Refugee Experience was created by a gift made to the University of British Columbia by Barry Lando.

### 2. Genesis of the Prize

Barry Lando approached Professor Blye Frank, Dean of the Faculty of Education and Suzanne Scott, Assistant Dean, Development & Alumni Engagement, Faculty of Education, to establish the prize.

### 3. Purpose of the Prize

The Lando Literary Prize on the Immigrant/Refugee Experience will be awarded annually to a national or international debut author who has written an outstanding work on the refugee/immigrant experience (the “**Purpose**”).

The goal of the prize is to ensure the story of struggle and discrimination is honoured and heard by members of the UBC community, and that there is a platform for new writers to be recognized by the publishing community.

### 4. Monetary Award for Each Prize

One prize of \$2,000 will be awarded annually. The prize will first be awarded in spring 2021.

**5. Eligibility and Selection** 1.1 Must have written a book on the refugee/immigrant experience, may be a translation

1.2 Must be a debut author

1.3 May be either a national or international author

Prize candidate eligibility:

The Faculty of Education is responsible for soliciting nominations, promoting the award and ensuring the winner is awarded the prize by the Dean of the Faculty of Education and Barry Lando at an event hosted by the Faculty of Education.

The Book Prize Selection Jury is comprised of a minimum of three qualified reviewers approved by the Dean of the Faculty of Education or designate, from recommendations made by the Faculty of Education. There will be at least one UBC representative on the Book Prize Selection Jury. The Prize Selection Jury submits their shortlist and winning title to the Dean of the Faculty of Education or designate for final approval.



## Appendix B: Curriculum Report

### FACULTY OF ARTS

#### *New courses*

FREN 415 (3) French Digital Culture; FREN 480 (3) French Theory; HIST 400 (3) The Practice of Oral History; SPAN 409 (3) From Text to Stage: Topics in Hispanic Theatre; ARTH 210 (3) Byzantium: Arts of an Empire; CNRS 207 (3) Byzantium: Arts of an Empire; FREN 414 (3) The Modern and Contemporary French Novel; FREN 417 (3) Popular Fiction; FREN 455 (3) Creative Writing in French

### FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES

#### Arts

#### *New courses*

ASIA 516 (3) Race and Ethnicity in Asian Studies; ASIA 535 (3) Japanese Cinema Studies: Theory and Practice

#### Commerce and Business Administration

#### *New course*

BAEN 509 (3) Applied Methods in Technology Start-ups at CDL  
Education

#### *Revised programs*

Graduate Certificate in Educational Technology; Graduate Certificate in Technology-Based Learning for Schools (TBLS)

#### *New courses*

EDCP 575 (3) Media Education: Curriculum, Pedagogy, and Issues; KIN 597 (3) Practical Applications in High Performance Sport

#### *Revised course*

EPSE 688 (1-3) d Seminar in Supervision of School and Applied Child Psychology Practice  
Medicine

#### *Revised program*

Master of Public Health  
Peter A. Allard School of Law

#### *Revised course*

LAW 561 (6) Fundamental Concepts in Tax Law

### FACULTY OF PHARMACEUTICAL SCIENCES

#### *New course*

PHAR 450 (2-9) d Selected Topics

#### *Revised program*

Bachelor of Pharmaceutical Sciences



14 April 2021

To: Vancouver Senate

From: Senate Academic Policy Committee

Re: Withdrawals, Academic Leave, and Letter of Permission

---

The Senate Academic Policy Committee has reviewed a proposal submitted by the Faculty of Land and Food Systems to revise the Faculty's academic regulations Calendar entry as they pertain to withdrawals, academic leave, and letters of permission. The revisions not only clarify and align policies but also direct students to appropriate campus resources.

The following is recommended to Senate:

**Motion:**       *"That Senate approve revisions to the Withdrawals, Academic Leave, and Letter of Permission Calendar entry set out in the proposal."*

Respectfully submitted,

Dr. Kin Lo, Chair  
Senate Academic Policy Committee



## UBC Curriculum Proposal Form Change to Course or Program

### Category: 2

<p><b>Faculty:</b> Land &amp; Food Systems  <b>Department:</b>  <b>Faculty Approval Date:</b>  <b>Effective Session (W or S):</b> W  <b>Effective Academic Year:</b> 2021</p>	<p><b>Date:</b> March 17, 2021  <b>Contact Person:</b> Christine Klaray,          Director, Student Services  <b>Phone:</b> 604-822-9702  <b>Email:</b> <a href="mailto:christine.klaray@ubc.ca">christine.klaray@ubc.ca</a></p>
<p><b>Proposed Calendar Entry:</b></p> <p><i>Withdrawals, Academic Leave, and Letter of Permission</i></p> <p><b>1. Withdrawal</b></p> <p>A student who decides to withdraw from a course should refer to <a href="#">Change of Registration</a>.</p> <p>A student who decides to withdraw from the University should refer to <a href="#">Withdrawal</a>.</p> <p><b>2. Academic Leave</b></p> <p>Students in good academic standing after a Winter Session (September - April) are normally eligible to register in the following Summer and Winter Sessions but may choose instead to take an <a href="#">Academic Leave</a> of up to one academic year. In this case, students will retain eligibility to register in the next Winter Session. If away for more than one academic year, however, students must apply for readmission through Enrolment Services. Published <a href="#">deadlines</a> will apply. Academic Leave is not an opportunity to take courses toward the students' UBC degree at another institution.</p> <p style="background-color: yellow; padding: 2px;">&lt;&lt;paragraph break&gt;&gt;</p> <p>Students with student loans or scholarships</p>	<p><b>URL:</b>  <a href="http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,194,795,1646">http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,194,795,1646</a></p> <p><b>Present Calendar Entry:</b></p> <p><i>Withdrawals <del>and</del> Academic Leave</i></p> <p><b>1. Withdrawal</b></p> <p>A student who decides to withdraw from a course should refer to <a href="#">Change of Registration</a>.</p> <p>A student who decides to withdraw from the University should refer to <a href="#">Withdrawal</a>.</p> <p><b>2. Academic Leave</b></p> <p>Students in good academic standing after a Winter Session (September - April) are normally eligible to register in the following Summer and Winter Sessions but may choose instead to take an <a href="#">Academic Leave</a> of up to one academic year. In this case, students will retain eligibility to register in the next Winter Session. If away for more than one academic year, however, students must apply for readmission through Enrolment Services. Published <a href="#">deadlines</a> will apply. Academic Leave is not an opportunity to take courses toward the students' UBC degree at another institution. <del>A student who wishes to study at another institution must consult with LFS Student Services in advance to determine whether or not they are eligible for a Letter of Permission (see "Taking Courses Outside of UBC" above for</del></p>



are advised to consult with an [Enrolment Services Advisor](#) before taking a leave, as there may be financial implications.

<<paragraph break>>

Students studying on a student/study visa should consult with [International Student Advising](#) to ensure they understand the implications interrupting their studies may have on their immigration status or eligibility for a Post-Graduate Work Permit.

### 3. Letter of Permission

A student who wishes to study at another institution must consult with LFS Student Services in advance to determine whether or not they are eligible for a [Letter of Permission](#).

~~more~~). Students with student loans or scholarships are advised to consult with an [Enrolment Services Advisor](#) before taking a leave, as there may be financial implications.

### Type of Action:

Change the title.

Add additional text to clarify and align policies and connect students with appropriate campus resources.

Add paragraph breaks to break up the text in to more manageable chunks.

Add a new section on letter of permission.

### Rationale for Proposed Change:

Change the title to reflect the addition of the section on letter of permission.

Adding paragraph breaks helps break up the text to make it easier to read, and separate out the topics within the policy.

Adding “Students studying on a student/study visa...” ensures that students are aware there are implications of taking an academic leave it on a student/study visa, and directs them to the appropriate unit on campus (International Student Advising) for additional support and guidance; mirrors the sentence above advising students on loan to contact their Enrolment Services advisor.

Adding the section on letter of permission to separate it from academic leave as obtaining a letter of permission for taking courses outside of UBC is not related to academic leave.



14 April 2021

To: Vancouver Senate

From: Senate Academic Policy Committee

Re: Policy V-102 *Examination Hardships and Clashes*

---

At its 25 February 2021 meeting the Okanagan Senate rescinded approval of Policy J-102 *Examination Hardships and Clashes* and approved new Policy O-102 *Examination Hardships and Clashes*. Accordingly, the Senate Academic Policy Committee met to consider renumbering the existing policy, no longer joint, to Policy V-102 and removing references to the Okanagan Senate.

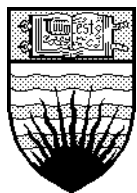
The following is recommended to Senate:

**Motion:** “*That Senate approve Policy V-102 Examination Hardships and Clashes to replace Policy J-102 Examination Hardships and Clashes.*”

Respectfully submitted,

Dr. Kin Lo, Chair  
Senate Academic Policy Committee

## THE UNIVERSITY OF BRITISH COLUMBIA



## SENATE POLICY:

VJ-102

VANCOUVER ~~and~~  
~~OKANAGAN~~ SENATESc/o Enrolment Services  
2016 - 1874 East Mall  
Vancouver, B.C. Canada V6T 1Z1**Number & Title**VJ-102 *Examination Hardships and Clashes***Effective Date:**

1 September 2021

**Approval Date:**

April 2021 (anticipated)

**Review Date:**

This policy shall be reviewed five (5) years after approval and thereafter as deemed necessary by the *responsible committee*.

**Responsible Committees:**Vancouver Senate Academic Policy Committee  
~~Okanagan Senate Academic Policy Committee~~**Authority:***University Act, S. 37(1)*

*"The academic governance of the university is vested in the senate and it has the following powers:*

*...(d) to determine the conditions under which candidates must be received for examination, to appoint examiners and to determine the conduct and results of all examinations; ...*

*...(s) to make rules respecting the conduct and financing of examinations referred to in paragraph (r) and other examinations conducted by the senate under any other Act;" ...*

**Purpose and Goals:**

The goal of this policy is to provide for consistent, fair, and equitable treatment of *examination candidates*, as well as to clarify the definition of *examination hardships* and *examination clashes* and the steps to take when they occur.

**Applicability:**

This policy is applicable to all *formal examinations* associated with academic *courses* at the University.

**Exclusions:**

None

**Definitions:**

For the purposes of this policy and in all other policies in which they are not otherwise defined:

- *Course* shall mean course of instruction.
- *Examination Candidate* shall mean a student undertaking a *formal examination* for a course in which he or she is enrolled.
- *Examination Clash* shall mean the occurrence of multiple *formal examinations* scheduled on the same day and at the same time, or for which the allotted times overlap.
- *Examination Hardship* shall mean the occurrence of an *examination candidate* being faced with three (3) or more *formal examinations* being scheduled within a 24-hour period.
- *Formal Examination* shall mean an oral, written or practical assessment that contributes toward the determination of an *examination candidate's* final grade or standing in the respective course, and that is scheduled by the Registrar and time-limited, with invigilation provided.
- *Formal Examination Periods* shall mean the periods when *formal examinations* are scheduled (normally, in December, April, June, and August) as delineated in the Academic Year by the Registrar.

**Policy:**

- 1) An *examination candidate* facing an *examination hardship* shall be given a new examination date and time for the second *formal examination* by the respective instructor or department/faculty. The student must notify the instructor of the second *formal examination* no later than one (1) month prior to the examination date for courses in the Winter Session (whether in Term 1 or Term 2), or no later than two (2) weeks prior to the examination date for courses in the

Summer Session. If the *examination hardship* involves more than three (3) *formal examinations*, this process is to be repeated.

- 2) Where an *examination clash* occurs, *examination candidates* are to contact their instructor(s) as soon as possible to determine if an alternate writing time is available; if the instructor(s) is unable to resolve the *examination clash*, then the department head or dean/director is to be consulted.
- 3) If an alternate writing time is not available at the faculty level, *examination candidates* must contact Enrolment Services, to make alternate arrangements.

### **Calendar Statement:**

This policy is applicable to all formal examinations associated with academic courses at the University.

An examination hardship is defined as the occurrence of an examination candidate being faced with three or more formal examinations scheduled within a 24-hour period (e.g., from 8:00 a.m. to 7:59 a.m. the following day).

An examination candidate facing an examination hardship shall be given a new examination date and time for the second formal examination by the respective instructor or department/faculty.

The student must notify the instructor of the second formal examination no later than one month prior to the examination date for courses in the Winter Session (whether in December for Term 1 or April for Term 2), and no later than two weeks prior to the examination date for courses in the Summer Session. If the examination hardship concerns more than three (3) formal examinations, this process is to be repeated.

An examination clash is when a student has multiple formal examinations scheduled on the same day and at the same time, or where the allotted times for scheduled formal examinations overlap. In these cases, alternate arrangements should be made as soon as possible. The student should first contact his or her instructor(s) to determine if an alternate time to write the exam is available; if the instructor(s) is unable to resolve the examination clash, then the department head or dean/director is to be consulted.

If an alternate writing time is not available at the faculty level, examination candidates must contact Enrolment Services, to make alternate arrangements.

## Consultations

The following groups have been consulted during the development of this policy:

Enrolment Services; Deans; Access & Diversity; Office of the Ombudsperson for Students; Office of the Vice-President, Academic; Legal Counsel

## History:

The first rules around examination hardships were approved by Senate in April 1998 and has been subject to amendments from time to time as exhibited in the archive of Academic Calendars. This policy codifies these historical developments.

**In February 2021 the Okanagan Senate rescinded its approval of Policy J-102 and approved new Policy O-102. In April 2021 the Vancouver Senate renumbered the existing policy, no longer joint, to Policy V-102 and removed references to the Okanagan Senate. [Anticipated]**

## Related Policies:

### Academic Accommodation for Students with Disabilities

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,34,0,0>

### Academic Concession

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,48,0,0>

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,329,0,0>

### Exam Scheduling Policies and Procedures

<http://www.students.ubc.ca/classroomservices/course-and-exam-scheduling/exam-scheduling/policies-and-procedures>

<https://facultystaff.students.ubc.ca/enrolment-services/scheduling-records-systems-management/scheduling-services/exam-scheduling/academic-final-exams/exam-policies-and-procedures>

### Sudden Examination Disruption Policy

<http://www.senate.ubc.ca/vancouver/policies.cfm?ID=15>

<https://senate.ubc.ca/vancouver/policies/examination-disruption>

### Rules Governing Formal Examinations

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,41,90,0>

## Appendix:

There is no appendix to this policy.



To: Senate  
From: Senate Agenda Committee  
Date: 14 April 2021  
Re: Indigenous Strategic Plan Endorsement

---

As Senators are aware, last year the Board of Governors endorsed the Indigenous Strategic Plan. At that time, consultation had yet to be completed with the Okanagan and Vancouver Senates and with some first nations in the Okanagan region, and thus the document was not brought forward to either senate for their own consideration at that time. That process is now complete, and the Okanagan and Vancouver Senate Agenda Committee would recommend that both Senates now also consider endorsing in principle the Indigenous Strategic plan. The Committees would note that endorsement in principle is not approval of the specific proposals therein, rather, it is support for the broad direction set out in the plan and the mechanisms proposed to implement the plan. Specific academic initiatives will still be considered through the Senates and faculties as per normal processes.

The Senate Agenda Committee would recommend that Senate resolve as follows:

*That Senate Endorse in Principle the UBC Indigenous Strategic Plan 2020, as attached.*



# UBC INDIGENOUS STRATEGIC PLAN

---

2020





# CONTENTS

hay č xʷ q ə, limləmt, Thank you .....	6
Message from President Ono .....	7
Truth before reconciliation .....	8
Looking back on our journey .....	10
A collective voice for the way forward .....	14
UBC Indigenous Strategic Planning process .....	16
Meaningful reconciliation at the centre .....	18
Our relationships .....	20
Vision, mission and values .....	21
Implementing Indigenous human rights .....	24
Transforming intent into action .....	26
Starting today .....	36
Planning team .....	37
Photo credits .....	38



**The road we travel is equal in importance to the destination we seek. There are no shortcuts. When it comes to truth and reconciliation, we are forced to go the distance.**

*—Justice Murray Sinclair, Truth and Reconciliation Commission of Canada*







## hay č xʷ q ə, limləmt, Thank you

We honour, celebrate and thank the xʷməθkʷəy̓əm (Musqueam) and Syilx peoples on whose territories the campuses of the University of British Columbia have the privilege to be situated.

The UBC Vancouver-Point Grey campus is located on the traditional,

ancestral and unceded territories of the xʷməθkʷəy̓əm (Musqueam) people.

The UBC Okanagan campus is located on the traditional, ancestral and unceded territory of the Syilx Okanagan Nation.

The xʷməθkʷəy̓əm and Syilx peoples have been stewards and caretakers

of these territories since time immemorial. To acknowledge and support this important role, UBC strives toward building meaningful, reciprocal and mutually beneficial partnerships with the xʷməθkʷəy̓əm and the Syilx peoples.



I am humbled to share with all UBC students, faculty, staff and partners the 2020 UBC Indigenous Strategic Plan (ISP). The purpose of the Plan is to guide UBC towards our goal of becoming a leading voice in the implementation of Indigenous peoples' human rights, as articulated in the United Nations Declaration on the Rights of Indigenous Peoples and other international human rights law.

The UN Declaration is part of a global societal agenda for the 21st Century and an essential component of reconciliation in Canada. Through this Plan, we at UBC will play a leading role in its implementation as a part of our academic mission.

The advancement of Indigenous peoples' human rights is of the utmost importance to the University. We are uniquely positioned to generate and mobilize knowledge that can produce systemic change. We are a place to develop and implement innovative

and path-breaking research, teaching, and engagement with Indigenous communities.

The Province of British Columbia is the first government in Canada and the Common Law world to pass legislation implementing the UN Declaration. With this Plan, we are responding to this mandate and want to set a positive example for other universities across Canada, and the world, on how to continue to uphold our responsibilities to Indigenous peoples. Through the Plan, we also hope to demonstrate the success that can be achieved for all members of society when we work together toward a better and more just future.

We know that implementing this Plan will take hard work and the resolve of all members of the UBC community at every level, especially those at the highest level. Through this Plan, we commit ourselves to taking meaningful collective action for a more just and equitable future for all.



# Truth before reconciliation

Due to the leadership and bravery of thousands of Indigenous peoples across Canada, it is now well documented that the ultimate objective of the residential school system was to destroy the cultural, political and social institutions of Indigenous peoples. This included a targeted campaign to forcibly remove children from the care of their parents and to place them under the control of a state that regarded them as less than human. At the same time, land was stolen, the Indian Act heavily restricted Indigenous peoples' lives, and a reserve pass system was set in place to monitor movement of Indigenous people. Many aspects of cultural expression were also made illegal, including language and ceremony. These actions represent a conscious and deliberate attempt to eradicate Canada of the sophistication and rich cultural diversity among Indigenous peoples.

As an entity created by and governed under provincial legislation, the University of British Columbia has been, and continues to be, in many respects, a colonial institution. An understanding of the role that UBC, and all post-secondary institutions in Canada have played in colonization is important to put the Indigenous Strategic Plan into context.

As acknowledged by President Ono in 2018, universities bear part of the responsibility for this history, not only for having trained many of the policy makers and administrators who operated the residential school system, and doing so little to address the exclusion from higher education that the schools so effectively created, but also for tacitly accepting the silence surrounding it. In years past, even after the signing of human rights declarations and ethics



agreements that followed World War II, university professors conducted research at residential schools that exploited their deplorable conditions without attempting to change them.

In modern times, the continuing failure to address this history has meant that the previous ways of thinking—or of not thinking—about the residential school system have remained largely intact. By failing to confront a heinous history, we have become complicit in its perpetuation. This is not a result that we, as a university, can accept any longer.

The last of the residential schools closed in Canada in 1996, but the experience of Indigenous peoples in Canada after contact with Europeans, and the inter-generational effects of residential schools, makes it easy to understand why many have struggled to flourish in public school systems, and even more so in post-secondary education institutions.

For many Indigenous students, faculty and staff, colonialism is a daily reality at UBC. One need not look far to recognize the value that has been placed on Eurocentric approaches to teaching and research to understand why so many do not see themselves reflected in the classroom and workplace. When Indigenous worldviews, as expressed in their legal traditions, governance institutions, economies and social structures, are excluded from life on campus, we deprive both Indigenous and non-Indigenous community

members of broader understandings of what it can mean to be a scholar, an inventor, an advocate, a healer and an entrepreneur, among other areas of expertise.

In the last decade we have experienced a significant national shift in the recognition of Indigenous peoples' rights. With it has come a new set of expectations for all educational institutions. Nationally, the key drivers of this shift started with the Truth and Reconciliation Commission of Canada's (TRC) work and publication of its 94 Calls to Action in 2015, including Call to Action #43 which calls "upon federal, provincial, territorial, and municipal governments to fully adopt and implement the United Nations Declaration on the Rights of Indigenous Peoples as the framework for reconciliation". This was followed by Canada's full endorsement, without qualifications, of the United Nations Declaration on the Rights of Indigenous Peoples in 2016. Just as the update to this Plan was beginning to move forward, the National Inquiry into Missing and Murdered Indigenous Women and Girls delivered its final report, along with its 231 Calls for Justice, in early June 2019. Most recently, in November 2019, British Columbia passed the Declaration on the Rights of Indigenous Peoples Act.

In its final report, the Truth and Reconciliation Commission delivered a call to educational institutions at all levels to build student capacity for intercultural leadership with understanding, empathy, and mutual respect. It also calls on us all to implement the United Nations Declaration on the Rights of Indigenous Peoples. Provincial mandates now require universities in British Columbia to have response plans in place and report annually on their implementation progress. Through this Plan, our aim is to foster a more inclusive and respectful environment where the truth about our failings as an educational institution in the past serves as a continuous reminder of why the work ahead must be prioritized throughout the University.



Reconciling our collective colonial history will require enormous effort and work. Ending colonialism will not happen instantly, but there are concrete steps UBC has taken, and plans to take, to advance this as a priority.

Since 2009, UBC has been working to define what path the University should take on its reconciliation journey. The development of the first Aboriginal Strategic Plan occurred in 2008. This Plan started with a working group, who completed a consultation and revisions process, and put together a comprehensive framework that defined 10 areas in which meaningful actions to address Indigenous peoples' concerns should occur. Subsequent implementation reports were published in 2010, 2012, and 2014.

The need for an updated Indigenous Strategic Plan was first identified by the Indigenous Strategic Plan Implementation Committee and the First Nations House of Learning. Under their guidance and leadership, the process to begin updating the Plan began in late 2017. This development process included several cross-body campus working groups and an on-line discussion forum which concluded in June 2018. The 2018 Plan, while retaining the framework identified by its 2009 predecessor, identified key areas of need and opportunity in a new global and national context.

Through this early engagement process, we came to understand that engagement with Indigenous peoples no longer means only developing

new programs. Reconciliation, as defined by these inquiries and the United Nations Declaration on the Rights of Indigenous Peoples, is now a collective responsibility of the entire University to play an active role in supporting the Indigenization of our university.

A great amount of work went into the development of the 2018 Plan which provided the structural framework for ongoing engagement with UBC's Indigenous partners and community members. Following the completion of this framework, the Implementation Committee initiated further engagement across the UBC community to develop a clear plan of action for all Faculties and operating groups at UBC.



UBC has been fortunate to be the academic home for many Indigenous people who have already taken up the work of advancing Indigenous peoples' human rights in different ways. Due to their commitment, the UBC community has maintained a strong leadership role in educating and advocating for Indigenous perspectives, worldviews and experiences. However, the burden to advance this work can no longer be carried by a few, and we must all make the commitment to do this work. Thus, a core objective for this Plan will be to create broader responsibility, at all levels of the University community, to advance

Indigenous peoples' rights and alleviate the onus these champions have been carrying for some time.

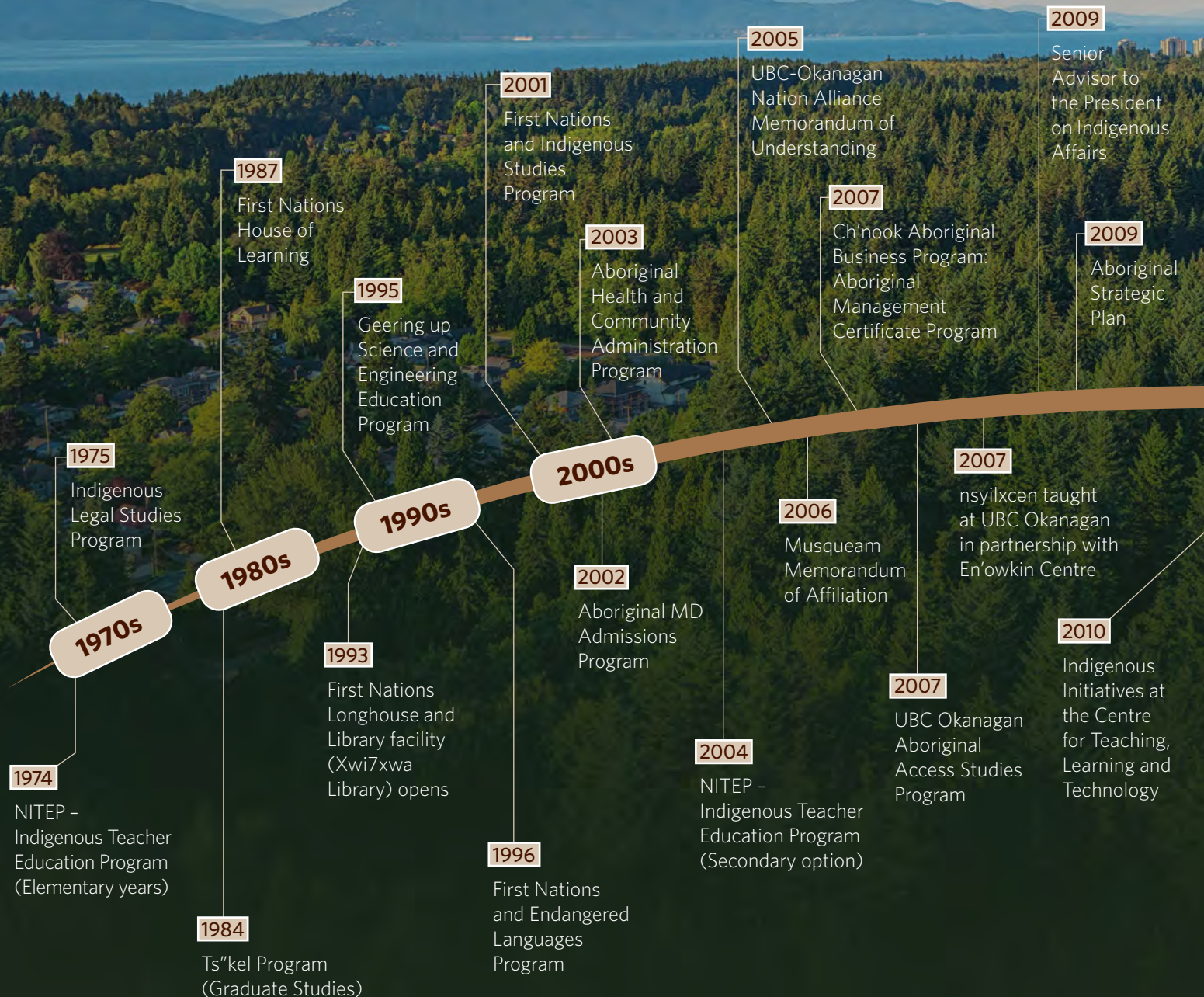
As demonstrated by the initiatives taken to date, our journey is marked by incremental forms of success. These successes are important, however, they are limited in scope and, taken together, have not yet provided a sufficient model for advancing reconciliation. They have addressed neither the underlying issues at the centre of the University's structure nor the work the University needs to undertake to lay an enduring foundation for the future relationship with Indigenous peoples on our campuses and beyond.

A new model of planning is needed, which lays a longer-term foundation and re-calibrates our relationship with Indigenous students, faculty, staff and partners in a systemic way. Our collective goal must be to move beyond the implementation of program specific initiatives to lay a foundation for long-term relationships that actively advance the human rights of Indigenous peoples on campus, in British Columbia, in Canada and across the world.



## In the lead up to and following the implementation of the 2009 Plan, UBC took incremental steps to advance Indigenous engagement and inclusion.

The following is a list of many (but not all) of those steps.







The Indigenous Strategic Plan is the result of extensive engagement. The Okanagan campus, together with the Okanagan Nation, began this process with the development of a Declaration of Truth and Reconciliation Commitments and the implementation of five key recommendations received from the Aboriginal Committee to the Deputy Vice-Chancellor and Principal regarding meaningful support for reconciliation.

Inspired by the UBC Okanagan Declaration, Indigenous and non-Indigenous community members on the Vancouver and Okanagan campuses were engaged in a process to review the 2018 Indigenous Strategic Plan and explore opportunities to further ground its goals and objectives within the local, national and global imperative of reconciliation.

This engagement process occurred over the 2019/2020 school year and involved meetings with deans and executives, faculty and staff, students and our Indigenous community partners. It also included a university-wide survey including UBC alumni.

The Indigenous Strategic Plan, which resulted from these extensive engagements, forms UBC Vancouver's response to the Truth and Reconciliation Commission of Canada's Calls to Action.

The engagement process centred on three key themes:

**Research** – How UBC engages in and conducts research that impacts Indigenous peoples and promotes research initiatives that promote Indigenous inclusion and the values of respect, relationship, responsibility and reverence.

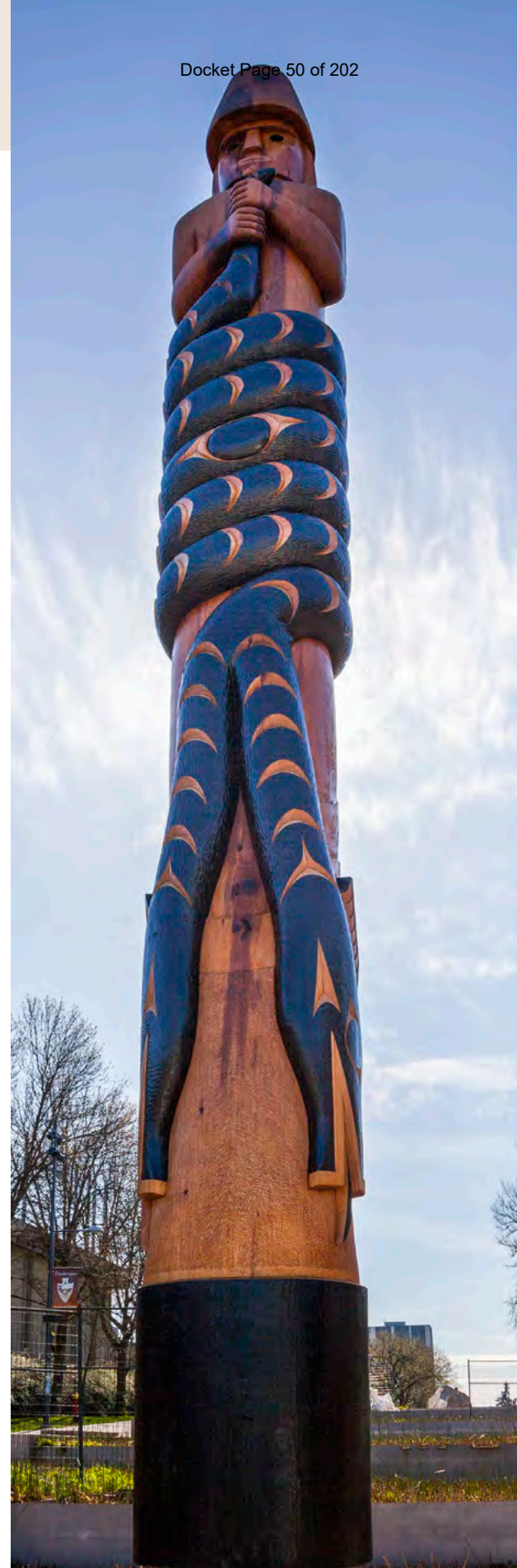


**Learning and Teaching –**

The structures, systems and policies that promote a safe and inclusive learning environment for Indigenous students and support them to achieve success, however they choose to define it. It also relates to all aspects of the programs and curriculum that support and promote Indigenous worldviews, knowledge systems, languages, culture, systems of law and governance, as well as the expertise of the instructors that develop and deliver curriculum throughout UBC.

**Service** – Support systems and processes in place for prospective Indigenous students, current Indigenous students, Indigenous faculty and staff as well as initiatives that promote meaningful engagement with our Indigenous community partners locally, nationally and internationally.

This Plan is the result of more than 2,500 unique engagements, and over 15,000 ideas, opinions and comments shared by Indigenous and non-Indigenous individuals across both campuses and with our Indigenous community partners. The feedback received was collated and analysed and ultimately culminated in the eight goals and 43 actions the University will collectively take to advance our vision.





Workshops with  
UBCO leadership and  
Indigenous Caucus



Engagement sessions  
with UBCO and UBCV  
campus communities



Engagement  
sessions with  
Musqueam Indian  
Band and the  
Okanagan Nation  
Education Council



President's Group  
Leadership Forum



Open houses with  
UBCO and UBCV  
campus communities



**1,200+**  
In-person Engagements



Indigenous Strategic  
Planning Committee is  
engaged on 2018 draft



**2017**  
Creation of Ad Hoc  
Committee to guide  
Indigenous Strategic  
Planning process



**16+**

Individual Meetings  
with Deans and  
Executives

## UBC Indigenous Strategic Planning Process



**1,273**

Responses

Online survey to  
UBCV & UBCO  
campus communities



**15,000+**

Individual Ideas, Opinions  
and Comments

# Meaningful reconciliation at the centre



**Our engagement process was designed to be somewhat analogous to the story of the raising of the Reconciliation Pole, installed here at UBC in April 2017.**

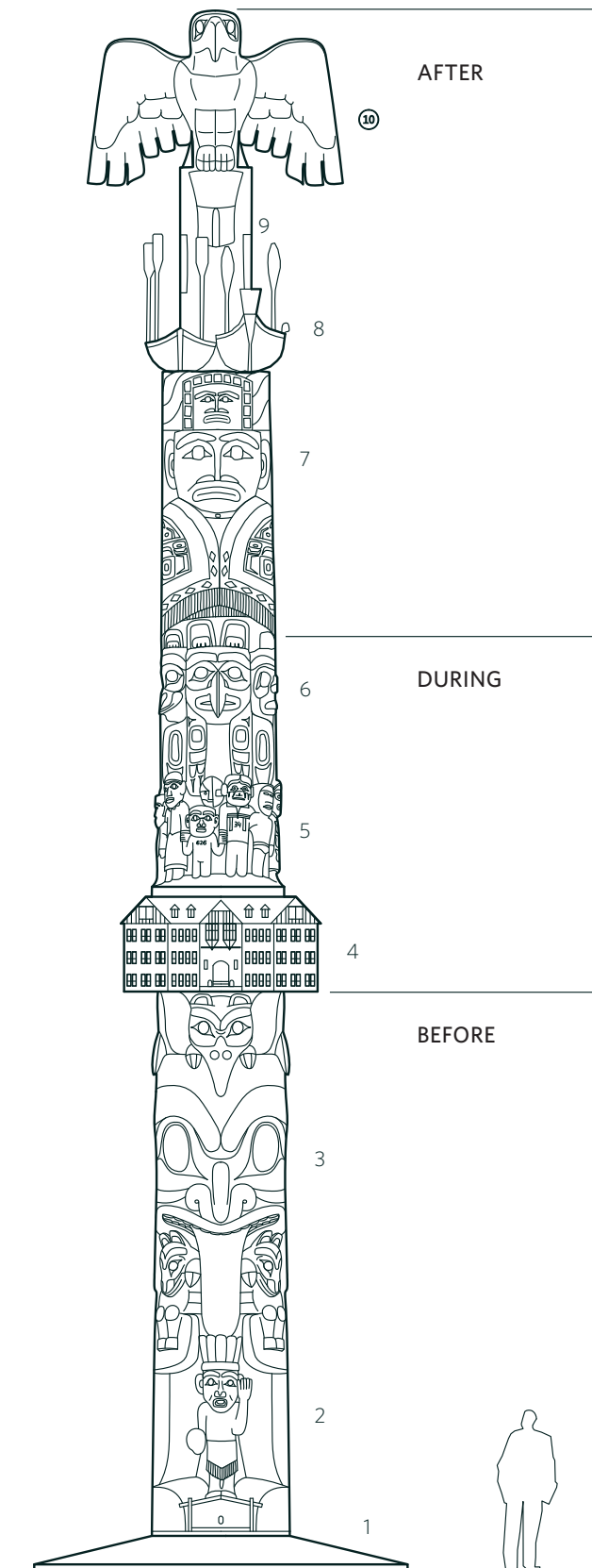
**About the Artist** – Born in 1952 at Masset, BC, Haida Gwaii, master carver Tłidansuu (Edenshaw), James Hart, has been carving his whole life. He is also a skilled jeweller and print maker and is considered a pioneer among Northwest Coast artists in the use of bronze casting. Hart has replicated traditional Haida totem poles and designed new poles and sculptures found across the globe. Between 2009 and 2013 Hart created, designed, and carved The Dance Screen (The Scream Too), a monumental sculpture now residing at the Audain Art Museum in Whistler. James Hart was awarded the Order of British Columbia (2003), and honorary doctorates in Fine Arts from Emily Carr University of Art + Design (2004) and Simon Fraser University (2017). In 2016, he was elected a member of the Royal Canadian Academy of Arts.

**About Reconciliation Pole** – The Reconciliation Pole is situated on the unceded ancestral and traditional territory of the hən'q'əmin'əm' speaking Musqueam people. The pole, carved from an 800-year-old red cedar log, was installed on April 1, 2017.

The Reconciliation Pole recognizes a complex history, which includes the history of the Indian residential schools that operated for more than 100 years, the last one closing in 1996. Indian residential schools forcibly separated an estimated 150,000 children from their parents, families, and culture. Many students died in the schools and many more suffered severe forms of psychological, physical, and sexual abuse. For the Haida people today, carving and publicly raising new poles is a way of honouring history and celebrating the ongoing vitality of cultural practices. Though culturally distinct, the Reconciliation Pole honours all First Nations who have persisted through the dark experience of the schools and look to a better future.

The Reconciliation Pole took a team of experienced carvers to complete over a number of months, led by Haida artist James Hart, with a small amount of carving by some members of the University community as a way of sharing ownership of the pole's message of reconciliation. The pole depicts First Nations, Inuit and Métis peoples' genocidal experience with this country's residential school system and how, despite this past, Indigenous peoples are celebrating their culture and implementing their rights.

With the consent of Musqueam, the pole was raised through the efforts of hundreds of people, both Indigenous and non-Indigenous, young and old, who together pulled on a handful of ropes in the same direction. This image alone is a powerful symbol of unity and a demonstration of what can be achieved when we work towards a common set of goals. The implementation of this Plan, like the pole raising, will take a major collective effort, with all Faculties and operating units pulling in the same direction from their specific locations.



### What Story Does Reconciliation Pole Tell?

Haida poles are read from bottom to top.

- 1 Surrounding the base of the pole are salmon symbolizing life and its cycles.
- 2 Between the legs of Bear Mother is sGaaga (Shaman) who stands on top of the Salmon House and enacts a ritual to ensure their return.
- 3 Bear Mother holds her twin cubs, Raven looks out from between Bear Mother's Ears.
- 4 A Canadian Indian residential school house, a government-instituted system designed to assimilate and destroy all Indigenous cultures across Canada.
- 5 The children holding and supporting one another are wearing their school uniforms and numbers by which each child was identified. Their feet are not depicted as they were not grounded during those times.
- 6 Four Spirit Figures: killer whale (water), bear (land), eagle (air) and Thunderbird (the supernatural). They symbolize the ancestries, environment, worldly realms and the cultures that each child came from.
- 7 The mother, father and their children symbolize the family unit and are dressed in traditional high-ranking attire symbolizing revitalization and strength of today.
- 8 Above the family is the canoe and longboat shown travelling forward—side by side. The canoe represents the First Nations and governances across Canada. The longboat represents Canada's governances and Canadian people. This symbolism respectfully honours differences, but most importantly displays us travelling forward together side by side.
- 9 Four Coppers, coloured to represent the peoples of the world, symbolize and celebrate cultural diversity.
- 10 Eagle represents power, togetherness, determination and speaks to a sustainable direction forward.

The 668,000+ copper nails covering areas of the pole are in remembrance of the many children who died at Canada's Indian residential schools — each nail commemorates one child.

UBC has a complex network of relationships with and obligations to Indigenous peoples locally and globally. The diagram below is provided as a starting point for understanding this network of relationships. It is crucial that UBC recognizes and attends to each and every one of our relationships within this network in purposeful and meaningful ways.

Our nearest relationships and responsibilities are with our host nations of Musqueam and the Okanagan Nation Alliance with whom we have deepening and formalized relationships as expressed through a Memorandum of Affiliation (with Musqueam) and a Memorandum of Understanding (with the ONA).

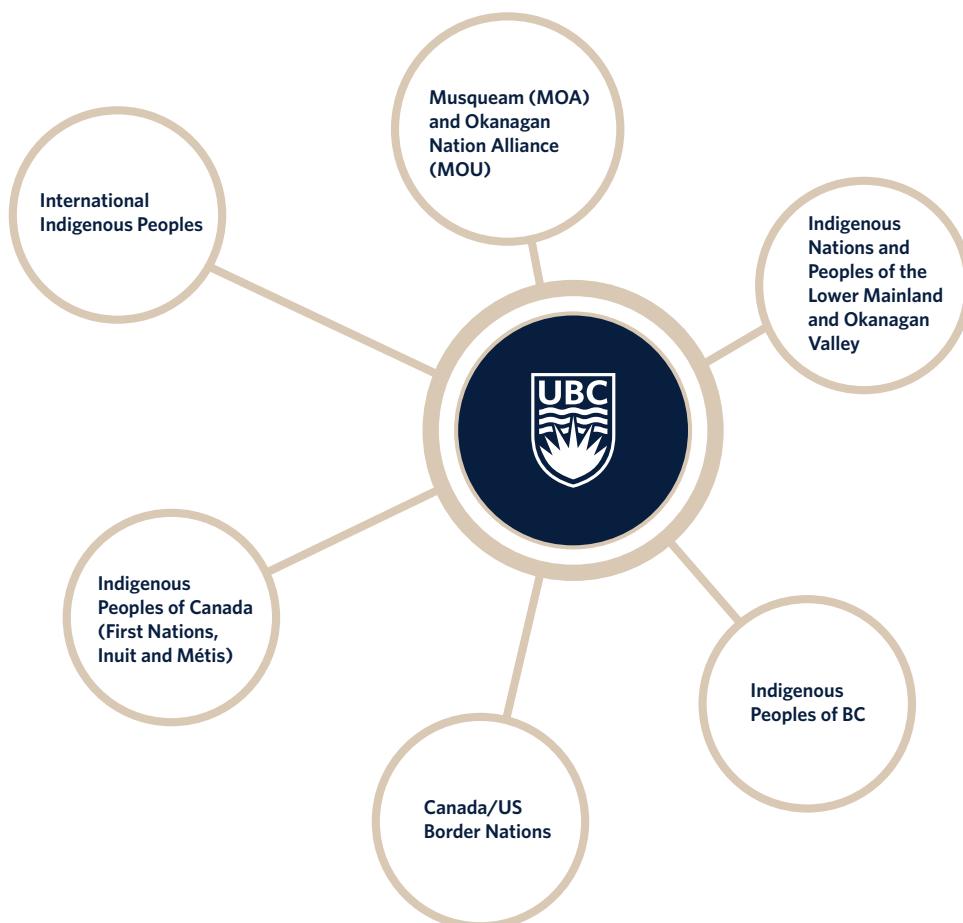
Working outward from our Okanagan and Vancouver campuses, UBC has relationships with and responsibilities to Indigenous nations and peoples in the lower mainland/Fraser Valley and Okanagan Valley.

We also have relationships with Indigenous nations in other parts of the province. UBC facilities are located on the territories of a number of Indigenous nations in BC and we strive to build meaningful partnerships everywhere we are hosted. Many of our Indigenous students, faculty and staff are proud citizens and ambassadors of these nations.

Next, we have relationships with trans-boundary nations whose governments are based in the United States, representing yet another set of relationships and responsibilities that we as a university community must nurture.

Then, there are Indigenous peoples across Canada including First Nations, Inuit and Métis peoples, all of whom hold inherent and protected rights within Canada's constitutional framework. UBC has yet another set of obligations and responsibilities to all Indigenous nations and peoples of Canada.

Finally, as emerging international leaders in the advancement of Indigenous human rights, this Plan creates opportunities for UBC to continue to build relationships with Indigenous peoples across the globe.



Like 'Aboriginal', the term 'Indigenous' refers to First Nations, Inuit and Métis people, either collectively or separately. It is the preferred term in international usage, e.g. the United Nations Declaration on the Rights of Indigenous Peoples, and is increasingly being chosen over 'Aboriginal' both formally and informally in Canada.

This Plan presents a bold and long-term vision for UBC, the progress of which will be monitored closely through implementation measures and updated on an ongoing basis until our

goals are achieved. We anticipate that as the Plan is implemented that a gradual shift will take place in UBC's culture creating an environment where respect for Indigenous rights is woven

into the daily life of the University. For students, faculty and staff this will mean an environment in which they feel valued, respected and in which they will have every opportunity to thrive.

## Vision

UBC as a leading university globally in implementation of Indigenous peoples' human rights.

## Mission

To guide UBC's engagement with Indigenous peoples and its commitment to reconciliation, as articulated and called for by the Truth and Reconciliation Commission of Canada.

## Values

Throughout the engagement process and creation of this finalized Indigenous Strategic Plan we have emphasized the values of excellence, integrity, respect and accountability and this is evident in the final strategic plan document. We engaged directly with a cross-section of the UBC community in

finalizing this Plan, and their voices and inputs have guided the Plan now being put into action.

As this Plan is implemented, we will continue to emphasize these values of excellence, integrity, respect and accountability as we ensure that this Plan works to advance Indigenous human rights throughout the University.

The Indigenous Strategic Plan is also committed to upholding the value of academic freedom in the context of Indigenous human rights. UBC's Strategic Plan 2018-2028 defines academic freedom as "a scholar's freedom to express ideas through respectful discourse and the pursuit of open discussion, without risk of censure."

# ACTION PLAN



**// We're involved in a national project  
of remedial learning, and the  
academy is in the front row. //**

— Marie Wilson, Truth and Reconciliation Commission of Canada



The Indigenous Strategic Plan provides thoughtful guidance for action and a framework for reconciliation in a post-secondary context. In post-TRC Canada, we are morally and ethically compelled to implement these global human rights standards. Pursuing reconciliation is a collective university responsibility, a thread that runs through all areas

of the University. The following section is designed to guide and enable Faculties and others to follow through on the University's commitment to meaningful reconciliation. It is intended not as a portfolio in itself but rather, as a guide to help Faculties, units and portfolios develop their own plans for implementation, considering their

unique contexts and capabilities. In short, it is an enabling document. In implementing Indigenous human rights as a university community, we build an environment in which students, faculty and staff will share intercultural understanding, empathy, and mutual respect for the rights of all peoples.

## Goals



5

**Enriching our spaces:**  
Enrich the UBC campus landscape with a stronger Indigenous presence.

6

**Recruiting Indigenous people:** Position UBC as the most accessible large research university globally for Indigenous students, faculty and staff.

7

**Providing tools for success:**  
Forge a network of Indigenous peoples' human rights resources for students, faculty, staff and communities.

8

**Creating a holistic system of support:**  
Provide exceptional and culturally supportive services for Indigenous students, faculty, staff and communities.

# Transforming intent into action

The following section provides a guiding framework of actions for Faculties, programs and operational units to develop their own plans for implementation.

## GOAL 1

**Leading at all levels:** Prioritize the advancement of Indigenous peoples' human rights and respect for Indigenous peoples at all levels of UBC's leadership and accountability structure.

### Action 1

Develop Indigenous-focused committees, advisories and leadership roles across the University ensuring that Indigenous engagement is broadly integrated into all aspects of the University's academic and operational functions.

### Action 2

Ensure that all Faculties and cross-university strategies identify Indigenous engagement and the advancement of Indigenous peoples' human rights as a specific strategic area of focus and commitment.

### Action 3

Align UBC's operating budget to provide meaningful and flexible allocations and resourcing for each goal identified in this Plan.

### Action 4

Provide support for senior administrators and faculty members whose leadership advances the goals and objectives of this Plan in Faculty and operational plans.

### Action 5

Work with other research universities in British Columbia, the province, Musqueam, the Okanagan Nation and other Indigenous partners to strategically review the University Act, 1996 and prepare to address any inconsistencies with the principles set out in the Truth and Reconciliation Commission of Canada's Calls to Action, the National Inquiry into Missing and Murdered Indigenous Women and Girls' Calls for Justice, and the United Nations Declaration on the Rights of Indigenous Peoples.

**“I think the onus is on leadership to acknowledge and demonstrate respect for Indigenous partnerships.”**

—ISP Engagement Participant

## GOAL 2

**Advocating for the truth:** Facilitate open public dialogue about truth, reconciliation and the recognition of Indigenous peoples' human rights.

### Action 6

Complete an institution-wide study, and publish a public report of the findings, that identifies UBC's participation in the implementation of Crown colonial policies.

### Action 7

Develop a communications strategy to ensure that every current and prospective student, faculty, staff member and partner of the University is aware of the unceded status of the lands on which UBC facilities are situated and the enduring relationship between Indigenous peoples and their territories.

### Action 8

Provide free and publicly accessible educational tools, events and resources that promote the local and global implementation of Indigenous peoples' human rights, the Truth and Reconciliation Commission's Calls to Action and the National Inquiry into Missing and Murdered Indigenous Women and Girls' Calls for Justice.

### Action 9

Establish a multi-disciplinary advisory group of Indigenous women and Indigenous 2SLGBTQQIA\* people to oversee public dialogue at the University regarding the National Inquiry into Missing and Murdered Indigenous Women and Girls' Calls for Justice.

\*two-spirit, lesbian, gay, bisexual, transgender, queer, questioning, intersex and asexual

**Take a stronger stance  
in how we approach  
and advocate for more  
systematic change beyond  
just the UBC community.**

—ISP Engagement Participant

## GOAL 3

**Moving research forward:** Support research initiatives that are reciprocal, community-led, legitimize Indigenous ways of knowing and promote Indigenous peoples' self-determination.

### Action 10

Create dedicated strategic programming to catalyze research that is co-developed with and led by Indigenous communities locally and globally.

### Action 11

Establish Research Chair positions for faculty who demonstrate excellence in the application of Indigenous ways of knowing in research and advance the implementation of Indigenous peoples' human rights locally, nationally and around the world.

### Action 12

Support research opportunities for students to become global leaders in the advancement of Indigenous knowledge systems in health, governance, education, law, business, the sciences, the arts and Indigenous languages.

### Action 13

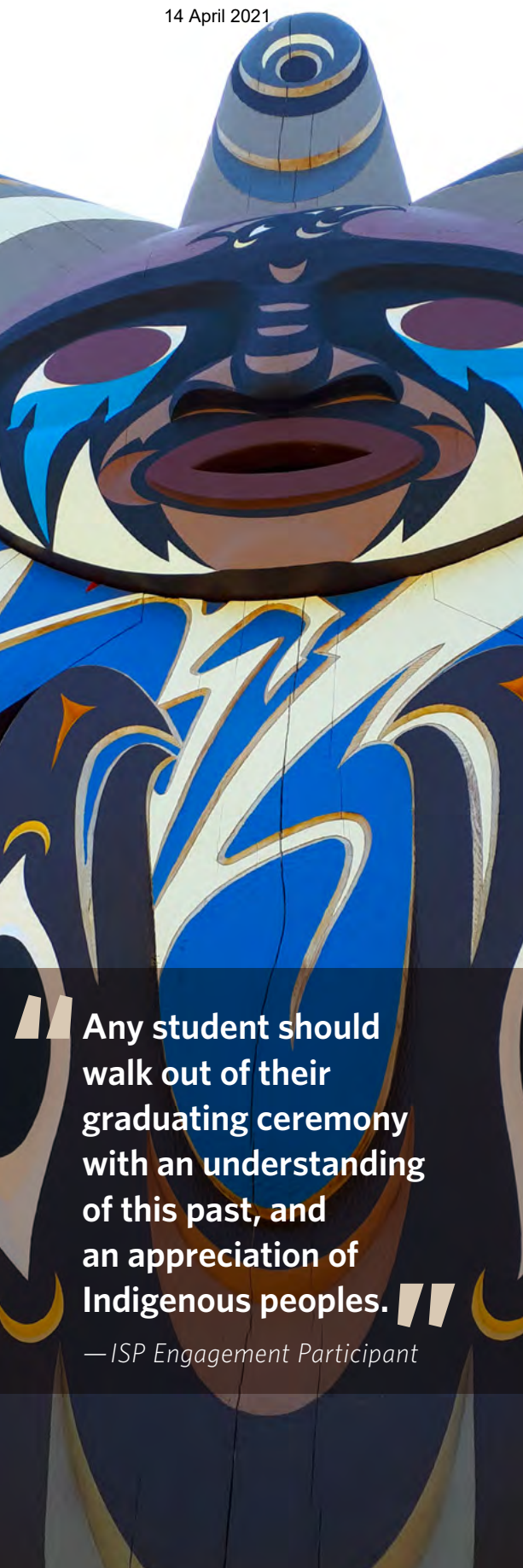
Co-develop research protocols and community-specific ethical research guidelines with interested community partners to ensure students and Faculties are approaching research opportunities with communities in a respectful and formalized manner. This includes the imperative of free, prior and informed consent and protocols on the ownership, control, access and possession of Indigenous data.

### Action 14

Provide Indigenous people who are engaged in research with equitable and timely compensation that recognizes the significant value of their participation to the research process and outcomes.

**Involve Indigenous communities in all facets of research including active and meaningful collaboration – from planning and design, to execution, data collection, data analysis, interpreting outcomes, and broadly sharing research results.**

— ISP Engagement Participant



Any student should walk out of their graduating ceremony with an understanding of this past, and an appreciation of Indigenous peoples.

—ISP Engagement Participant

## GOAL 4

**Indigenizing our curriculum:** Include Indigenous ways of knowing, culture, histories, experiences and worldviews in curriculum delivered across Faculties, programs and campuses.

### Action 15

Undertake university-wide, Faculty-level curriculum reviews to ensure Indigenous histories, experiences, worldviews and knowledge systems are appropriately integrated and that all Faculties are fully compliant with the Truth and Reconciliation Commission's Calls to Action.

### Action 16

Ensure all academic programs, undergraduate and graduate, include substantive content in at least one course which explores Indigenous histories and identifies how Indigenous issues intersect with the major field of study of the Faculty.

### Action 17

Provide equitable and timely financial compensation to Indigenous people who support the Indigenization of curriculum.

### Action 18

Continue to partner with Indigenous communities locally and globally to develop accredited post-secondary Indigenous knowledge programs that can be delivered in communities and on campus.

## GOAL 5

**Enriching our spaces:** Enrich the UBC campus landscape with a stronger Indigenous presence.

### Action 19

Engage with Musqueam, the Okanagan Nation and other Indigenous host nations, as appropriate, regarding the design and development of UBC facilities.

### Action 20

Establish a cultural expert program that brings Musqueam, Okanagan Nation and other interested nations' cultural experts and Indigenous knowledge holders to the UBC campuses to work, teach and promote their expertise.

### Action 21

Dedicate spaces for Indigenous students, faculty and staff to practice and celebrate their cultures.

### Action 22

Identify and make visible the generational connections of Indigenous peoples to culturally significant places across UBC campuses.

### Action 23

Implement an Indigenous procurement strategy which prioritizes the provision of goods and services from Indigenous businesses and vendors.

“Students need to see modern Indigenous people in an academic setting. They need to view Indigenous people as people in the here and now who hold knowledge and power.”

—ISP Engagement Participant

## GOAL 6

**Recruiting Indigenous people:** Position UBC as the most accessible large research university globally for Indigenous students, faculty and staff.

### Action 24

Broaden the criteria for tenure, promotion and merit for faculty and staff to recognize excellence in incorporating Indigenous knowledge systems into teaching, curriculum development and research, including recognition of service in Indigenous-specific areas that goes above and beyond expectations.

### Action 25

Develop Indigenous recruitment, retention and advancement policies, which strategically increase Indigenous faculty and staff numbers on both campuses.

### Action 26

Identify apprenticeships and new employment opportunities for members of, and in partnership with, Musqueam, the Okanagan Nation and other Indigenous communities.

### Action 27

Integrate competence or interest in developing competence in teaching Indigenous content and working with Indigenous students and colleagues into university job descriptions.

### Action 28

Increase Indigenous student access to needs-based financial aid for tuition, child-care and housing.

### Action 29

Increase needs-based access to child-care services and affordable housing options for Indigenous faculty and staff.

### Action 30

Work with Musqueam and the Okanagan Nation to understand their members' desires for tuition assistance and explore what the University's role might be in addressing these desires.

**A first step in the right direction would be to work towards a major increase in Indigenous students, staff, and faculty. The more we are able to increase Indigenous access to UBC, the more this knowledge will become part of our community in non-tokenizing ways.**

—ISP Engagement Participant

## GOAL 7

**Providing tools for success:** Forge a network of Indigenous peoples' human rights resources for students, faculty, staff and communities.

### Action 31

Develop a research information repository and communication portal that assists students, faculty, staff, communities and researchers at large to access resources, information, publications and reports about Indigenous issues and knowledge.

### Action 32

Develop, communicate and keep updated a comprehensive online database of current Indigenous programs, initiatives and courses at the University.

### Action 33

Create a professional development program that assists faculty and staff to foster safe and inclusive classrooms and workplaces.

### Action 34

Develop and deliver Indigenous history and issues training for all faculty and staff to be successfully completed within the first year of employment at UBC and to be reviewed on a regular basis.

### Action 35

Identify Indigenous faculty and staff mentors who volunteer to be available, recognized and compensated for providing professional advisory services to their colleagues in the development and delivery of Indigenous content and tools for fostering culturally safe classrooms and workplaces.

### Action 36

Create easily accessible structures and mechanisms on each campus for Indigenous communities to partner with the University on initiatives that advance their unique goals and interests.

### Action 37

In consultation with Indigenous knowledge-experts, establish an International Indigenous Higher Education Advocacy Group to develop a global strategy for the advancement of Indigenous peoples' human rights in research and curriculum.

“My colleagues and I are keen to integrate Indigenous ways of knowing into our teaching, but don't have the tools, are apprehensive about teaching materials we don't understand well ourselves, and want to ensure that we are being authentic and respectful.”

—ISP Engagement Participant

## GOAL 8

**Creating a holistic system of support:** Provide exceptional and culturally supportive services for Indigenous students, faculty, staff and communities.

### Action 38

Review all university policies and operational practices to ensure they support the recognition of Indigenous peoples' human rights, and the equity and inclusion of Indigenous students, faculty, staff and community members.

### Action 39

Strengthen relationships with educational providers and support a comprehensive, multi-pathway approach for transitioning Indigenous students from K-12 or college to undergraduate studies, or from undergraduate studies to graduate studies.

### Action 40

Partner with Musqueam, the Okanagan Nation and other Indigenous host nations to provide in-community university transition support services to interested community members.

### Action 41

Enhance trauma, violence and other counselling or cultural support services for Indigenous students, faculty and staff.

### Action 42

Complete, on a regular basis, service level reviews with Indigenous students, faculty and staff to ensure campus wellness programs and other services increasingly meet their needs.

### Action 43

Expand upon UBC's discrimination and harassment policies to clarify and uphold UBC's zero tolerance for racism, cultural violence, sexual violence or any form of discrimination against Indigenous students, faculty, staff and community members.

**“I would like to see support programs that specifically address Indigenous students' issues from an Indigenous perspective.”**

—ISP Engagement Participant



**Much of the current state of troubled relations between Aboriginal and non-Aboriginal Canadians is attributable to educational institutions and what they have taught, or failed to teach, over many generations. Despite that history, or, perhaps more correctly, because of its potential, the Commission believes that education is also the key to reconciliation.**

*— 2015 Report of the Truth and Reconciliation Commission of Canada*



With a new standard of excellence in the promotion of Indigenous peoples' human rights set out in this Plan, the work of implementation committees to set priorities and provide direction throughout the University can now begin. To ensure the Plan remains a focal point of the University's work, the implementation committees will begin working with all Faculties and operational units throughout the University to:

- Develop a performance measurement framework for measuring progress under this Plan including both qualitative and quantitative performance measuring;
- Support all Faculties and operational units to report publicly on the achievements and challenges that come from taking the actions identified in this Plan;
- Collect baseline data under the performance measurement framework in order to track short-term and long-term progress;
- Incorporate the actions into existing and upcoming strategic plans; and
- Develop annual work plans to advance each of the actions, which includes specific milestones and timelines.

This Plan will be reviewed every three years by the University's leadership, in consultation with the broader UBC community and our Indigenous partners to ensure we continue to advance the vision.





**Ian Cull**

*Anishinaabe, Dokis First Nation*  
Senior Advisor to the Deputy Vice-Chancellor and Principal on Indigenous Affairs



**Sheryl Lightfoot, PhD**

*Lake Superior Band of Ojibwe, Keweenaw Bay*

Senior Advisor to the President on Indigenous Affairs, Canada  
Research Chair of Global Indigenous Rights and Politics,  
Associate Professor, Political Science, Public Policy and Indigenous Studies



**Margaret P. Moss, PhD, JD, RN, FAAN**

*Enrollee of the Three Affiliated Tribes of North Dakota (Hidatsa/Dakota)*

Director of the First Nations House of Learning, Associate Professor in the Faculty of Applied Science, School of Nursing



**Vicki George, CLA, BA**

*Wet'suwet'en Nation*  
Assistant Director, First Nations House of Learning



**Alex Ash, MPPGA**

Indigenous Strategic Planning Manager



**Castlemain Group**

Castlemain is a leading Indigenous advisory company in Canada and worked alongside our team to engage the UBC community and its partners in the development of the UBC Indigenous Strategic Plan



**COVER/BACK:** Reconciliation Pole, 7idansuu (Edenshaw), James Hart, Haida, UBC Vancouver. *Photo: Paul Joseph / UBC Brand & Marketing*



**PAGE 2/3:** Reconciliation Pole Raising Ceremony, April 1, 2017, UBC Vancouver. *Photo: Kevin Ward / UBC First Nations House of Learning*



**PAGE 4/5:** Reconciliation Pole, 7idansuu (Edenshaw), James Hart, Haida, UBC Vancouver. *Photo: Paul Joseph / UBC*



**PAGE 6: Top picture:** During the carving of Musqueam Post or sʔi:ʔəy qeqən (double-headed serpent post), Brent Sparrow Jr., Musqueam, installed at UBC Vancouver campus on April 6, 2016. *Photo: Reese Muntean*  
**Bottom picture:** UBC Okanagan Mace, Sheldon Louis, Okanagan Indian Band. The artwork of the three symbolic spirit icons was given to UBC's Okanagan campus in 2005 by the Okanagan Nation elders. *Photo: Darren Hull / UBC*



**PAGE 7: Big picture:** ʔəʔsqən (Point Grey), Brent Sparrow Jr., Musqueam, installed at UBC Vancouver campus in June 2020. *Photo: Paul Joseph / UBC Brand & Marketing*  
**Circle picture:** Professor Santa Ono, UBC President and Vice-Chancellor. *Photo: Paul Joseph / UBC Brand & Marketing*



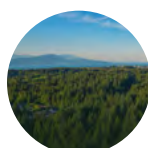
**PAGE 8: Big picture:** Residential School History and Dialogue Centre, UBC Vancouver, officially opened on April 9, 2018. *Photo: Paul Joseph / UBC*  
**Circle picture:** UBC President Santa Ono and Chief Wayne Sparrow, Musqueam Indian Band, together at the Reconciliation Pole raising ceremony. *Photo: Kevin Ward / UBC First Nations House of Learning*



**PAGE 9:** Signing the UBCO TRC Declaration of Commitments. From left, Ian Foulds, Aboriginal Advisory Committee co-chair, Ian Cull, Senior Advisor to the DVC on Indigenous Affairs, Eric Mitchell, Cultural Safety Educator and adjunct professor in the Faculty of Creative and Critical Studies, Deborah Buszard, UBC Deputy Vice-Chancellor and Principal, and Santa Ono, UBC President and Vice-Chancellor. *Photo: Don Erhardt*



**PAGE 10/11:** Reconciliation Pole, 7idansuu (Edenshaw), James Hart, Haida, UBC Vancouver. *Photo: Paul Joseph / UBC Brand & Marketing*



**PAGE 12/13:** Point Grey Peninsula, Vancouver. *Photo: Martin Dee / UBC Brand & Marketing*



**PAGE 14: Big picture:** sʔilʔtn, a permanent installation, Les Louis, Lower Similkameen Band, Okanagan Nation Alliance, installed at UBC Okanagan campus on September 27, 2016. *Photo: Don Erhardt / UBC*  
**Circle picture:** Okanagan Nation Alliance flag was permanently installed at UBC Okanagan on September 27, 2018. *Photo: Don Erhardt / UBC*



**PAGE 15: Big picture:** Musqueam Post or sʔi:ʔəy qeqən (double-headed serpent post), Brent Sparrow Jr., Musqueam, installed at UBC Vancouver campus on April 6, 2016. *Photo: Reese Muntean*  
**Circle picture:** Musqueam Indian Band flag was permanently installed at UBC Vancouver on February 25, 2019. *Photo: Paul Joseph / UBC*



**PAGE 16:** Indigenous Strategic Plan engagement session, Sty-Wet-Tan Great Hall, UBC First Nations Longhouse. *Photo: Martin Dee / UBC First Nations House of Learning*



**PAGE 18:** Reconciliation Pole, 7idansuu (Edenshaw), James Hart, Haida. UBC Vancouver. Photo: Hover Collective / UBC Brand & Marketing



**PAGE 21:** Okanagan Valley. Photo: Hover Collective / UBC Brand & Marketing



**PAGE 22/23:** Blessing the Reconciliation Pole at its raising ceremony. Photo: Paul Joseph / UBC Brand & Marketing



**PAGE 24/25:** Ginaawaan, Darin Swanson, Haida Hereditary Chief, at the Reconciliation Pole raising ceremony. Photo: Paul Joseph / UBC Brand & Marketing



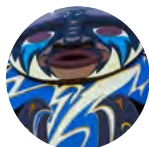
**PAGE 26:** UBC First Nations Longhouse. UBC Vancouver. Photo: Don Erhardt / UBC First Nations House of Learning



**PAGE 27:** Artist James Hart carving the Reconciliation Pole. Photo: Paul Joseph / UBC Brand & Marketing



**PAGE 28:** Xwi7xwa Library. UBC Vancouver. Photo: Jessica Woolman



**PAGE 29:** Thunder, Thomas Cannell, Musqueam, installed at UBC Vancouver campus in September 2009. Photo: Kevin Ward / UBC First Nations House of Learning



**PAGE 30:** 7əlqsən (Point Grey), Brent Sparrow Jr., Musqueam, installed at UBC Vancouver campus in June 2020. Photo: Paul Joseph / UBC Brand & Marketing



**PAGE 31:** The House Post of qiyəplenəxʷ (Capilano), Brent Sparrow Jr., Musqueam, installed at UBC Vancouver campus on March 20, 2012. Photo: Hover Collective / UBC Brand & Marketing



**PAGE 32:** Ceiling ornaments at the Residential School History and Dialogue Centre, UBC Vancouver. Photo: Paul Joseph / UBC



**PAGE 33:** Man and Raven Housepost, Stan Bevan, Tahltan-Tlingit-Tsimshian, and Ken McNeil, Tahltan-Tlingit-Nisga'a, Sty-Wet-Tan Great Hall, UBC First Nations Longhouse. Photo: Martin Dee / UBC First Nations House of Learning



**PAGE 34/35:** Indigenous Graduation Celebration, UBC First Nations Longhouse, 2015. Photo: Don Erhardt / UBC First Nations House of Learning



**PAGE 36: Big picture:** Reconciliation Pole, 7idansuu (Edenshaw), James Hart, Haida. UBC Vancouver. Photo: Paul Joseph / UBC Brand & Marketing



**Circle picture:** Indigenous Strategic Plan engagement session, Sty-Wet-Tan Great Hall, UBC First Nations Longhouse. Photo: Martin Dee / UBC First Nations House of Learning

**Copyright © 1994-2020 The University of British Columbia. All rights reserved.**

*This copy is made solely for personal use. Further reproduction, fixation, distribution, transmission, dissemination, communication, or any other uses, may be an infringement of copyright if done without securing the permission of the University of British Columbia. To obtain such permission, please contact the First Nations House of Learning.*



To: Senate  
From: Senate Agenda Committee  
Date: 14 April 2021  
Re: Amendment to Rules and Procedures of Senate Regarding Roll Call Votes

---

The Senate Agenda Committee has heard from many senators this year regarding the increase in the use of roll call votes at Senate, rather than the current default in the *Rules and Procedures of Senate* for voting to be by show of hands (in the case of this year, virtual zoom hands). Those in favour of Roll Call votes argue that in the virtual environment, it is not readily apparent to observers how people are voting and thus there is a decrease in transparency and accountability. Those opposed to Roll Call votes have suggested that it is being used as a political tool to draw attention to certain votes over others.

The relevant section of the *Rules and Procedures of Senate* currently reads as follows:

*22 a. Voting on ordinary business and motions is normally by show of hands. A member may request at any time through a motion that a roll call vote or a secret ballot vote be conducted. Such a motion requires a simple majority in the affirmative to pass.*

The Senate Agenda Committee has considered the situation and appreciates the concerns raised by senators both for and against the practice. The Agenda Committee would suggest to Senate that address concerns around transparency while still respecting the importance of all matters before the Senate, that the *Rules and Procedures of Senate* should be changed to have the normal form of voting for all motions be by Roll Call vote. The Committee recognizes that there are some technological challenges to be addressed to enable this being done in an efficient manner, and thus would suggest that a change in the rules take effect for 1 September. The Committee has also considered if this change in practice should continue when the Senate is once again able to meet in person. The Committee feels that it should.

Therefore, the Senate Agenda Committee recommends that Senate resolve as follows:

*“That, effective 1 September 2021, Section 22(a) of the Rules and Procedures of Senate be amended as follows:*

*Voting on ordinary business and motions is normally by ~~show of hands.~~ **roll call vote.** A member may request at any time through a motion that ~~a roll call vote or~~ a secret ballot vote be conducted. Such a motion requires a simple majority in the affirmative to pass.”*

NB: New text is in bold, text to be removed is struck through.



To: Senate  
From: Senate Agenda Committee  
Date: 14 April 2021  
Re: Amendment to Convocation Rules for Virtual Graduation

---

Last year, the Senate approved a temporary suspension and change the Rules of the Convocation to address the inability of that body to meet in person to confer degrees. At that time it was hoped that the public health situation would improve by 2021 to allow for normal practices to resume; however, it is apparent that this will not be the case. As the existing suspension to the rules expired on 1 January 2021, the Senate Agenda Committee would recommend its renewal for another year.

As Senate members are aware, what is referred to as “congregation” in Vancouver and “Convocation” in the Okanagan is both a celebratory/ceremonial event, and a formal Meeting of the University’s Convocation pursuant to Part 4 of the University Act for the purposes of “conferring degrees, including honorary degrees;” and “awarding diplomas and certificates of proficiency granted by the university” (hereafter “graduation” ). The Act further sets out certain rules for graduation – including setting a quorum of 20 convocation members – and empowers the Senates “to make rules governing procedure for the transaction of business by the convocation.” Over the past century, the former University Senate and the current Okanagan and Vancouver Senates have passed many resolutions setting rules for graduation. With the current COVID-19 situation, compliance with almost all of those rules are not possible as they expected, at least in part, an in-person graduation in the appropriate timeframe.

The University Administration is committed to having a “virtual graduation” this June, and to having a more traditional ceremony after the COVID-19 crisis has passed more in line with the traditional form of graduation at UBC. These events will serve as the celebratory/ceremonial aspects of graduation, but will not meet the requirements (either at all or in a timely manner) for the formal meeting aspects of graduation. UBC has many graduates who need the formal conferring of their degrees this spring so that they can gain employment, be granted immigration status, or seek further studies. Fortunately, the Senates have the ability to change or suspend rules for the convocation (Rather than the Convocation needing to do so itself), and further, all senators are automatically members of the Convocation. Thus, the same persons who constitute a meeting of a senate can also constitute a meeting of the Convocation. Such a system is already regularly used by Royal Roads University which formally confers degrees at meetings of their convocation directly following a meeting of their Academic Council (i.e. Senate), and then has a subsequent “graduation” convocation ceremony where they celebrate the achievements of their recent graduates. This same system was used by UBC throughout 2020.



To address this challenge, the Committee would recommend the following to the Senate:

- 1) That the rules of the Convocation be suspended until 31 December 2021 to allow remote attendance at Meetings of the Convocation via such remote attendance means as deemed acceptable to the Secretary to the Convocation;
- 2) That the regular Meetings of the Convocation in May and June and November 2021 be cancelled;
- 3) That formal meetings of the Convocation be called for May and November 2021, to directly follow the regularly-scheduled Senate meetings, such meetings to be convened via remote attendance of the Okanagan or Vancouver Senates and any other members of the Convocation who may be attending remotely; and
- 4) That the rules of the Convocation be suspended for the May and November Meetings of the Convocation to limit the Order of Business to a Call to Order, Conferral of Degrees and Awarding of Diplomas and Certificates in absentia, and Adjournment.

14 April 2021



Vancouver Senate  
THE UNIVERSITY OF BRITISH COLUMBIA

Docket Page 79 of 202  
**Office of the Senate**  
Brock Hall | 2016 - 1874 East Mall  
Vancouver, BC V6T 1Z1

Phone 604 822 5239  
Fax 604 822 5945  
[www.senate.ubc.ca](http://www.senate.ubc.ca)

To: Vancouver Senate  
From: Senate Awards Committee  
Re: Awards for Acceptance by the Senate  
Date: 14 April 2021

---

The Senate Awards Committee has reviewed the materials submitted by Development and Alumni Engagement and has enclosed the list of new and revised awards it deems ready for consideration by the Senate for approval:

**Motion:** *That Senate accept the awards as listed, that they be forwarded to the Board of Governors for approval, and that letters of thanks be sent to the donors.*

Respectfully submitted,  
Dr. Sally Thorne, Chair, Senate Awards Committee

April 2021

From: Daniel Galpin, Associate Director, Awards Development

To: Senate Committee on Student Awards, Vancouver

Re: Awards recommended for acceptance by the Senate Committee

---

## **NEW AWARDS – ENDOWED**

### **Campora-Hanni Scholarship in Engineering**

Scholarships totalling \$2,000 have been made available through an endowment established by Garry Hanni (B.Sc. 1970) and Dr. Elisabetta Campora for outstanding domestic students in the Bachelor of Applied Science program. The scholarships are made on the recommendation of the Faculty of Applied Science. (First award available for the 2021/2022 winter session).

---

## **NEW AWARDS – ANNUAL**

### **Catherine Chow Award in Law for IBPOC Students**

Two awards of \$1,500 each have been made available annually through a gift from Catherine Chow (LL.M. 2007) for second and third-year J.D. students who identify as Indigenous, Black or a Person of Colour and demonstrate financial need. This award was established to recognize and uplift those who endure racism as IBPOC law students. The awards are made on the recommendation of the Peter A. Allard School of Law. (First award available for the 2021/2022 winter session).

### **Dr. Gary Derkson Memorial Award in Dentistry**

Awards totalling \$3,000 have been made available annually through gifts from friends, family and colleagues in memory of Dr. Gary Derkson (1942-2018) for students in the Combined M.Sc. and Diploma in Pediatric Dentistry program who have demonstrated academic excellence. Dr. Derkson was born in Winkler, Manitoba, and received his Doctor of Dental Medicine from the University of Manitoba. Before relocating to Vancouver, he undertook additional graduate studies in pediatric dentistry at the University of Connecticut. Dr. Derkson joined the Faculty of Dentistry in 1977 as an Associate Professor of Pediatrics, retiring as an Associate Professor Emeritus in 2004, and served as the Chief of Dentistry at the BC Children's Hospital from 1986 to 2004. This award was established in recognition of Dr. Derkson's commitment to resident education in pediatric dentistry. The awards are made on the recommendation of the Faculty of

Dentistry, in consultation with the Faculty of Graduate and Postdoctoral Studies. (First award available for the 2021/2022 winter session).

### **Fortuna Foundation Award in Finance**

Awards totalling \$5,000 have been made available annually through a gift from the Fortuna Foundation for Bachelor of Commerce students in the Finance Option who have demonstrated outstanding academic achievement and an interest in capital markets or venture capital. Preference will be given to students who have shown an interest in securities and corporate finance. Financial need may be considered. Fortuna Foundation is the charitable arm of Fortuna Investments, a private investment firm based in Vancouver, British Columbia specializing in venture capital investments and advisory services. The awards are made on the recommendation of the UBC Sauder School of Business. (First award available for the 2021/2022 winter session).

### **Gwyneth and J.T. Sandy Memorial Award in Surgical Oncology**

Awards totalling \$5,500 have been made available annually through a gift from the Gwyneth and J.T. Sandy Memorial Fund for outstanding medical residents in the Department of Surgery who have shown leadership and demonstrated an interest in surgical oncology. Dr. Gwyneth J. Sandy grew up in Red Deer, Alberta and received her medical degree from the University of Manitoba. She served as President of the BC and Yukon Division of the Canadian Cancer Society from 1978 to 1981 and as Director of the National Cancer Institute of Canada. Dr. John Trevor “J.T.” Sandy (1928-2015) was born in Cavan Township, Ontario and completed his medical degree at University of Western Ontario. He completed his internship and a residency in general surgery at Vancouver General Hospital, where he continued to work as a surgeon until he retired in 1993. He joined the UBC Faculty of Medicine in 1971, where he trained and mentored generations of medical students before his retirement as a Professor Emeritus in 1994. The awards are made on the recommendation of the Department of Surgery. (First award available for the 2021/2022 winter session).

### **Zymeworks Centennial Scholars Award for Black or Indigenous Students**

A \$10,000 renewable entrance award has been made available annually through a gift from Zymeworks Biopharmaceuticals Inc. for an outstanding domestic student who identifies as Black or Indigenous and is entering the Bachelor of Science or Bachelor of Applied Science program directly from secondary school or transferring from another post-secondary institution. Recipients are academically qualified and would not be able to attend UBC without financial assistance. In addition to academic merit, consideration is given to qualities such as leadership skills, community service, and recognized extra-curricular achievement. Subject to continued academic standing, the award will be renewed for a further three years of study or until the first undergraduate degree is obtained (whichever comes first). Zymeworks Biopharmaceuticals Inc. is a wholly-owned subsidiary of Zymeworks Inc., a biopharmaceutical company based in Vancouver, British Columbia that focuses on the development of biotherapeutics to treat cancer.

The award is made on the recommendation of the Centennial Scholars Entrance Award Committee. (First award available for the 2021/2022 winter session).

---

## **NEW AWARDS – INTERNAL**

### **Beyond Tomorrow Scholars Award – Vancouver**

Awards of up to \$20,000 each have been made available annually by the University of British Columbia for outstanding domestic UBC Vancouver students who identify as Black and are entering an undergraduate program directly from secondary school or transferring from another post-secondary institution. Recipients are academically qualified and would not be able to attend UBC without financial assistance. In addition to academic merit, consideration is given to qualities such as leadership skills, community service, and extra-curricular achievement. Subject to continued academic standing, the awards will be renewed for a further three years of study or until the first undergraduate degree is obtained (whichever comes first). The awards are adjudicated by Enrolment Services. (First award available for the 2021/2022 winter session).

### **International Impact Award (Tuition)**

Awards ranging in value up to the full cost of the student's program and living costs are offered upon recommendation by the International Student Initiative to outstanding international students who demonstrate financial need. The value of each award will depend on the applicant's financial circumstances. The awards are made to students entering the University of British Columbia Vancouver campus directly from secondary school or from a post-secondary institution, to an undersubscribed undergraduate program of study. In addition to academic merit, priority is given to those exhibiting qualities such as leadership skills, involvement in student affairs or contribution to community service, first generation learners and those from diverse lived and socioeconomic backgrounds. Candidates must demonstrate prior commitment to, and interest in engaging further, via artistic expression or community engagement, social justice and equity, human wellness or conservation, sustainability and climate change. Consideration is restricted to students nominated by the educational institution they are attending. The awards will be renewed for up to three additional years of undergraduate study or to degree completion, whichever is less, provided the recipient maintains award standing in their program of study and maintains their status on a student authorization to study in Canada. Award winners will have their situations reviewed annually regarding both academic progress and financial need.

### **International Impact Award (Living Allowance)**

Awards ranging in value up to the full cost of the student's program and living costs are offered upon recommendation by the International Student Initiative to outstanding international students who demonstrate financial need. The value of each award will depend on the applicant's financial circumstances. The awards are made to students entering the University of British Columbia

Vancouver campus directly from secondary school or from a post-secondary institution, to an undersubscribed undergraduate program of study. In addition to academic merit, priority is given to those exhibiting qualities such as leadership skills, involvement in student affairs or contribution to community service, first generation learners and those from diverse lived and socioeconomic backgrounds. Candidates must demonstrate prior commitment to, and interest in engaging further, via artistic expression or community engagement, social justice and equity, human wellness or conservation, sustainability and climate change. Consideration is restricted to students nominated by the educational institution they are attending. The awards will be renewed for up to three additional years of undergraduate study or to degree completion, whichever is less, provided the recipient maintains award standing in their program of study and maintains their status on a student authorization to study in Canada. Award winners will have their situations reviewed annually regarding both academic progress and financial need.

### **International Impact Award (Start-Up)**

Awards ranging in value are offered to outstanding international students who demonstrate financial need and have been selected to study at UBC under the International Impact Award (Tuition and Living Allowance). The value of each award is determined by the International Student Initiative and is dependent on the applicant's financial circumstances and requirements for a successful transition to living and studying at UBC. The awards are made to students entering the University of British Columbia Vancouver campus directly from secondary school or from a post-secondary institution, to an undersubscribed undergraduate program of study. In addition to academic merit, priority is given to those exhibiting qualities such as leadership skills, involvement in student affairs or contribution to community service, first generation learners and those from diverse lived and socioeconomic backgrounds. Candidates must demonstrate prior commitment to, and interest in engaging further, via artistic expression or community engagement, social justice and equity, human wellness or conservation, sustainability and climate change. Consideration is restricted to students nominated by the educational institution they are attending.

### **International Impact Bursary (Tuition)**

Bursaries ranging in value up to the full annual cost of the student's academic program tuition and fees are offered upon recommendation by the International Student Initiative to continuing international undergraduate students who were previously awarded the International Impact Award and continue to demonstrate financial need but do not meet the Senate's academic criteria for a continuing award. The value of each bursary will depend on the applicant's financial circumstances. The bursary may be renewed for up to three additional years of undergraduate study or to degree completion, whichever is less, provided the recipient remains an international student on a valid Canadian study permit. Bursary recipients will have their situations reviewed annually by their Faculty as well as Enrolment Services regarding both academic progress and financial need.

**International Impact Bursary (Living Allowance)**

Bursaries ranging in value up to the full cost of the student's living costs are offered upon recommendation by the International Student Initiative to continuing international undergraduate students who were previously awarded the International Impact Scholars Award and continue to demonstrate financial need but do not meet the Senate's academic criteria for a continuing award. The value of each bursary will depend on the applicant's financial circumstances. The bursary may be renewed for up to three additional years of undergraduate study or to a degree completion, whichever is less, provided the recipient remains an international student on a valid Canadian study permit. Bursary recipients will have their situations reviewed annually by their Faculty as well as Enrolment Services regarding both academic progress and financial need.

---

**PREVIOUSLY APPROVED AWARDS WITH CHANGES IN TERMS OR FUNDING SOURCE****Endowed Awards****2822 – Katherine Genevieve MacDougall Memorial Prize****Rationale for Proposed Changes**

Law 360 (Children and the Law) is no longer offered consistently. The description has been revised to reward students who have done well in a course with a focus on family law, with priority given to courses that focus on children's rights. University Counsel, the Peter A. Allard School of Law, and the donor have reviewed and approved the revisions to the description.

**Current Award Description**

A \$1,700 prize has been endowed by family and friends in memory of Katherine MacDougall. The award is made on the recommendation of the Peter A. Allard School of Law, to a student who achieves high academic standing. In years when Law 360 (Children and the Law) is offered, the prize is offered for that course.

**Proposed Award Description**

A \$1,700 prize has been ~~endowed~~ made available through an endowment established by family and friends in memory of Katherine Genevieve MacDougall (1970-1986), for a J.D. student who achieves high academic standing in a course with a focus on family law, with priority given to courses that focus on children's rights. The prize ~~award~~ is made on the recommendation of the Peter A. Allard School of Law, ~~to a student who achieves high academic standing. In years when Law 360 (Children and the Law) is offered, the prize is offered for that course.~~

---

**Annual Awards**

**4837 – Akanksha Stevens Prize in Political Science****Rationale for Proposed Changes**

The donors wish for the prize to recognize their family more generally, rather than their child specifically.

**Current Award Title:** Akanksha Stevens Prize in Political Science

**Current Award Description**

A \$500 graduating prize is offered by the Goel family in memory of the victims of the Jewish Holocaust. The award is offered to an outstanding graduating student in political science and is made on the recommendation of the department, and in the case of a graduate student, in consultation with the Faculty of Graduate and Postdoctoral Studies.

**Proposed Award Title:** Goel Family Akanksha Stevens Prize in Political Science

**Proposed Award Description**

A \$500 graduating prize is offered by has been made available annually through a gift from the Goel Family in memory of the victims of the Jewish Holocaust. The award is offered to for an outstanding graduating undergraduate or graduate student in the Department of Political Science. and is The prize is made on the recommendation of the Department of Political Science, and in the case of a graduate student, in consultation with the Faculty of Graduate and Postdoctoral Studies.

**2887 – DLA Piper (Canada) LLP Prize in Alternative Dispute Resolution****Rationale for Proposed Changes**

Law 477 (Negotiations & Dispute Resolution), Law 478 (Alternative Dispute Resolution), and Law 479 (Mediation) are not all offered in the same year, and since the prize was established, the Peter A. Allard School of Law has begun to offer more courses in alternative dispute resolution. The description has been revised so that the prize can be awarded to J.D. students who have excelled in any course that focuses on alternative dispute resolution. The donor and the Peter A. Allard School of Law have reviewed and approved the revisions to the description.

**Current Award Description**

A \$500 prize is offered by DLA Piper (Canada) LLP, to a law student who achieves high academic standing in one of the following courses: Negotiations & Dispute Resolution (Law 477), Alternative Dispute Resolution (Law 478) or Mediation (Law 479). The award is made on the recommendation of the Peter A. Allard School of Law.

**Proposed Award Description**

A \$500 prize is offered by ~~has been made available annually through a gift from~~ DLA Piper (Canada) LLP, ~~to~~ for an outstanding J.D. law student who ~~has excelled in a course that focuses on alternative dispute resolution~~ achieves high academic standing in one of the following courses: Negotiations & Dispute Resolution (Law 477), Alternative Dispute Resolution (Law 478) or Mediation (Law 479). The award ~~prize~~ is made on the recommendation of the Peter A. Allard School of Law.

**1203 – Goel Scholarship in South Asian Studies****Rationale for Proposed Changes**

The donors wish for the scholarship to recognize their child specifically, rather than their family more generally.

**Current Award Title:** Goel Scholarship in South Asian Studies

**Current Award Description**

A scholarship of \$600 has been made available by Dr. and Mrs. D. P. Goel in memory of her brother, Mr. Om Prakash Agrawal. The award is made on the recommendation of the Department, to a student majoring in South Asian Studies (preferably in Hindi, Sanskrit or other languages of India).

**Proposed Award Title:** Akanksha Stevens Goel Scholarship in South Asian Studies

**Proposed Award Description**

A scholarship of \$600 ~~scholarship~~ has been made available ~~annually through a gift from~~ by Dr. and Mrs. D. P. Goel in ~~memory of her brother, Mr. Om Prakash Agrawal~~ honour of Akanksha Stevens for an outstanding undergraduate or graduate student in the Department of Asian Studies focusing on South Asian Studies (preferably in Hindi, Sanskrit or other languages of India). The ~~award~~ scholarship is made on the recommendation of the Department of Asian Studies, and in the case of a graduate student, in consultation with the Faculty of Graduate and Postdoctoral Studies to a student majoring in South Asian Studies (preferably in Hindi, Sanskrit or other languages of India).

**5420 – International Pipeline Conference Foundation Award in Pipeline Engineering****Rationale for Proposed Changes**

The award will now be managed by the Canadian Energy Pipeline Association. The award title and description have been updated to reflect this.

**Current Award Title:** International Pipeline Conference Foundation Award in Pipeline Engineering

**Current Award Description**

Awards totalling \$5,000 are offered annually by the International Pipeline Conference Foundation for outstanding undergraduate and graduate students in the Faculty of Applied Science who have excelled in a pipeline engineering course. Preference will be given to candidates who are (1) First Nations, Inuit, or Métis students of Canada or (2) women. This academic award is made on the recommendation of the Faculty of Applied Science, and in the case of a graduate student, in consultation with the Faculty of Graduate and Postdoctoral Studies.

**Proposed Award Title:** ~~International Pipeline Conference Foundation~~ Canadian Energy Pipeline Association Award in Pipeline Engineering

**Proposed Award Description**

Awards totalling \$5,000 are offered annually by the ~~International Pipeline Conference Foundation~~ Canadian Energy Pipeline Association for outstanding undergraduate and graduate students in the Faculty of Applied Science who have excelled in a pipeline engineering course. Preference will be given to candidates who are (1) First Nations, Inuit, or Métis students of Canada or (2) women. This academic award is made on the recommendation of the Faculty of Applied Science, and in the case of a graduate student, in consultation with the Faculty of Graduate and Postdoctoral Studies.

**2011 – NITEP Aurora Award**

**Rationale for Proposed Changes**

The description has been revised to increase the value of the award and ensure recipients receive \$6,000 in their final year of study. The Indigenous Teacher Education Program has reviewed and approved the revisions to the description.

**Current Award Title:** NITEP Aurora Award

**Current Award Description**

An award of \$3,000 is offered annually to support student entering the first year of the Indigenous Teacher Education Program. The award may be renewed for up to two years, subject to the student's satisfactory completion of the previous year and enrolment in a following year of study in the Indigenous Teacher Education Program. Preference will be given to a mature student in financial need. The award is made on the recommendation of Indigenous Teacher Education Program.

**Proposed Award Title:** ~~NITEP~~ Indigenous Teacher Education Program Aurora Award

**Proposed Award Description**

An award of \$3,000 ~~\$15,000~~ entrance award, disbursed over four years, has been made available ~~is offered annually to support for~~ students ~~entering the first year of~~ in the Indigenous Teacher Education Program (NITEP) who have achieved good academic standing. Preference will be given to mature students with financial need. Recipients should receive the award for multiple years in a row or intermittently, up to a maximum of four academic years total. Each recipient will receive \$3,000 a year. Students in the final year of their degree will receive \$6,000. ~~The award may be renewed for up to two years, subject to the student's satisfactory completion of the previous year and enrolment in a following year of study in the Indigenous Teacher Education Program. Preference will be given to a mature student in financial need.~~ The awards ~~is~~ are made on the recommendation of Indigenous Teacher Education Program.



14 April 2021

To: Vancouver Senate

From: Senate Curriculum Committee

Re: April Curriculum Proposals (approval)

---

The Senate Curriculum Committee has reviewed the material forwarded to it by the Faculties and encloses those proposals it deems as ready for approval.

The following is recommended to Senate:

**Motion:** *“That the new programs, new courses, new course code and revised course codes brought forward by the Faculties of Arts, Graduate and Postdoctoral Studies (Education), Medicine, Pharmaceutical Sciences, and Science be approved.”*

Respectfully submitted,

Dr. Claudia Krebs, Chair  
Senate Curriculum Committee



## **FACULTY OF ARTS**

### *New courses*

SOCI 224 (3) Sociology of Personal Life; SOCI 280 (3) Data and Society; SOCI 290 (3) Global Pandemics; SOCI 314 (3) Sociology of Masculinity

## **FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES**

### Education

### *New courses*

ETEC 543 (3) Understanding Learning Analytics; ETEC 544 (3) Digital Games & Learning

## **FACULTY OF MEDICINE**

### *New course*

OSOT 301 (3) Introduction to Human Occupation

## **FACULTY OF PHARMACEUTICAL SCIENCES**

### *New course*

PHRM 307 (2-6) c Directed Studies in Epidemiology and Health Outcomes

## **FACULTY OF SCIENCE**

### *New programs*

Bachelor of Science in Neuroscience; Minor in Data Science; Minor in Geophysics

### *New courses*

NSCI 200 (3) Fundamentals of Cellular and Molecular Neuroscience; NSCI 201 (3) Fundamentals of Behavioural and Cognitive Neuroscience; NSCI 300 (3) Laboratory Techniques for the Neurosciences; NSCI 301 (3) Neuroscience, Ethics, and Society; NSCI 302 (3) Mechanisms of Nervous System Dysfunction and Recovery; NSCI 311 (3) Advanced Neuroanatomy; NSCI 398 (3) Cooperative Work Placement I; NSCI 399 (3) Cooperative Work Placement II; NSCI 400 (6) Neuroscience Capstone; NSCI 448 (3/6) d Directed Studies in Neuroscience; NSCI 498 (3) Cooperative Work Placement III; NSCI 499 (3) Cooperative Work Placement IV; BIOL 424 (3) Tropical Ecology and Conversation; CPSC 368 (3) Databases in Data Science; DSCI 310 (3) Reproducible and Trustworthy Workflows for Data Science; DSCI 320 (3) Visualization for Data Science; EOSC 325 (3) Principles of Physical Hydrogeology; MATH 319 (3) Introduction to Real Analysis; SCIE 320 (3) Socio-Ecological Systems Research



*New course code*

NSCI: Neuroscience Undergraduate

*Revised course codes*

NRSC: Neuroscience Graduate; GEOS: Geographical Sciences

## UNDERGRADUATE – NEW COURSES

### SOCI – Department of Sociology

#### *SOCI 224 (3) Sociology of Personal Life*

<b>Category:</b> 1 <b>Faculty:</b> Arts <b>Department:</b> Sociology <b>Faculty Approval Date:</b> Feb. 11, 2021 <b>Effective Session (W or S):</b> W <b>Effective Academic Year:</b> 2021-22	<b>Date:</b> October 6, 2020 <b>Contact Person:</b> Silvia Bartolic for Course Author Neil Armitage <b>Phone:</b> 604-827-0684 <b>Email:</b> bartolic@mail.ubc.ca
<b>Proposed Calendar Entry:</b>  <b>SOCI 224 (3) Sociology of Personal Life</b> A sociological examination of everyday life exploring the social in the personal.	<b>URL:</b> <a href="http://www.calendar.ubc.ca/vancouver/courses.cfm?code=SOCI">http://www.calendar.ubc.ca/vancouver/courses.cfm?code=SOCI</a>  <b>Present Calendar Entry:</b> None  <b>Type of Action:</b> New Course  <b>Rationale for Proposed Change:</b>  <p><b>The personal impetus</b> behind the course stems from wanting to demonstrate the benefit of exploring personal life from a sociological perspective, and equip students with the conceptual tools to critically examine aspects of everyday life that are often taken for granted.</p> <p><b>In terms of contributing to the broader curriculum in sociology</b>, the course acts as a gateway to a whole range of upper level courses in the department, and a means to attract students across Faculties. The sociology of personal life cuts across a multitude of sociological sub-disciplines. While this course is not a pre-requisite, on completion students would be able to go in numerous directions to further pursue their interests, most specifically in the following areas and courses:</p> <p>Sociology of Families – SOCI320 &amp; SOCI415          Sociology of Consumption – SOCI342 &amp; SOCI423</p>

	<p>Gender and Sexuality – SOCI312 &amp; SOCI369          Urban Sociology – SOCI364 &amp; SOCI425</p> <p><b>In terms of students learning the sociological perspective,</b> a course at the 200-level dedicated to examining the social in the personal is both an excellent introduction to the discipline, and an opportunity for students that have taken SOCI101 or 102 to practice their sociological imagination.</p> <p><b>Not available for Cr/D/F grading</b></p> <p><input type="checkbox"/> <b>(undergraduate courses only)</b>          (Check the box if the course is NOT eligible for Cr/D/F grading and provide the rationale for this below. Note: Not applicable to graduate-level courses.)</p> <p><b>Rationale for not being available for Cr/D/F:</b> The default is that undergraduate courses are offered for Cr/D/F unless there is a significant reason as to why it should not be so.</p> <p><input type="checkbox"/> <b>Pass/Fail or</b>    <input type="checkbox"/> <b>Honours/Pass/Fail grading</b>          (Check one of the above boxes if the course will be graded on a P/F or H/P/F basis. Default grading is percentage.)</p>
--	--

*SOCI 280 (3) Data and Society*

<p><b>Category:</b> 1 <b>Faculty:</b> Arts  <b>Department:</b> Sociology  <b>Faculty Approval Date:</b> Feb. 11, 2021  <b>Effective Session (W or S):</b> W  <b>Effective Academic Year:</b> 2021</p>	<p><b>Date:</b> March 1, 2020  <b>Contact Person:</b> N Guppy  <b>Phone:</b> 2-3670  <b>Email:</b> neil.guppy@ubc.ca</p>
---	--

<p><b>Proposed Calendar Entry:</b></p> <p><b>SOCI 280 (3) Data and Society</b>          Impacts of changing information and communication technologies on societies and social interactions.</p>	<p><b>URL:</b>  <a href="http://www.calendar.ubc.ca/vancouver/courses.cfm?code=SOCI">http://www.calendar.ubc.ca/vancouver/courses.cfm?code=SOCI</a></p> <p><b>Present Calendar Entry:</b> None</p> <p><b>Type of Action:</b> New Course</p> <p><b>Rationale for Proposed Change:</b>          In the blink of an eye our social and cultural world – the domain of sociologists – has metamorphosed. Both physical maps and physical money have virtually disappeared. Landlines and letter writing are near-relics. Technological innovation is rapidly transforming our very core – from how and with whom we interact to how we shop and play and create. This course explores how advances in information and communication technologies are reconfiguring the production, circulation, and interpretation of data. Ever-more aspects of our social world are implicated. Understanding the sources of these transformations is the objective of this course. Topics include data production, algorithm constructions, big data, ethics, democracy, the digital divide, privacy, ownership, and social trust.</p> <p>This course would be an elective for Sociology Majors who must take Soci 217 plus three credits of other 200 level Soci courses. This course would be an elective course for non-Sociology students.</p> <p><b>Not available for Cr/D/F grading</b>  <input type="checkbox"/> (undergraduate courses only)          (Check the box if the course is NOT eligible for Cr/D/F grading and provide the rationale for this below. Note: Not applicable to graduate-level courses.)</p> <p><b>Rationale for not being available for Cr/D/F:</b>          The default is that undergraduate courses are offered for Cr/D/F unless there is a significant reason as to why it should not be so.</p>
--	---

	<input type="checkbox"/> <b>Pass/Fail or</b> <input type="checkbox"/> <b>Honours/Pass/Fail</b> <b>grading</b> (Check one of the above boxes if the course will be graded on a P/F or H/P/F basis. Default grading is percentage.)
--	---

*SOCI 290 (3) Global Pandemics*

<b>Category:</b> 1 Faculty: Arts <b>Department:</b> Sociology <b>Faculty Approval Date:</b> Feb. 11, 2021 <b>Effective Session (W or S):</b> W <b>Effective Academic Year:</b> 2021	<b>Date:</b> October 1, 2020 <b>Contact Person:</b> Silvia Bartolic for Course Author Katherine Lyon <b>Phone:</b> 604-827-0684 <b>Email:</b> bartolic@mail.ubc.ca
<b>Proposed Calendar Entry:</b>  <b>SOCI 290 (3) Global Pandemics</b> Global pandemics in relation to social inequality, social interaction and social institutions.	<b>URL:</b> <a href="http://www.calendar.ubc.ca/vancouver/courses.cfm?code=SOCI">http://www.calendar.ubc.ca/vancouver/courses.cfm?code=SOCI</a>  <b>Present Calendar Entry:</b> None  <b>Type of Action:</b> New Course  <b>Rationale for Proposed Change:</b> SOCI 290 is an opportunity for students to apply sociological lenses to global pandemic processes related to social inequality, social interaction and social institutions. This course enables students to connect their own pandemic experiences to local and global contexts, in a flexible and supported manner. At the same time, SOCI 290 enhances awareness of the diverse experiences of marginalized groups under global pandemics, potentially creating further opportunities for empathy and social justice. SOCI 290 will launch with an emphasis on COVID-19, and will expand over time to include a broader lens on new and historic pandemics.  SOCI 290 will add a 200-level course to sociology course offerings, and may help to

	<p>track students into various directions within the discipline. We anticipate high levels of interest for this class based on the pilot course launched in summer and fall 2020 (COVID-19 &amp; Society), which attracted students in Arts, Business, Applied Science and Science. There are no other courses devoted entirely to this topic currently available at UBC.</p> <p><b>Not available for Cr/D/F grading</b>  <input type="checkbox"/> <b>(undergraduate courses only)</b>          (Check the box if the course is NOT eligible for Cr/D/F grading and provide the rationale for this below. Note: Not applicable to graduate-level courses.)</p> <p><b>Rationale for not being available for Cr/D/F:</b> The default is that undergraduate courses are offered for Cr/D/F unless there is a significant reason as to why it should not be so.</p> <p><input type="checkbox"/> <b>Pass/Fail or</b>    <input type="checkbox"/> <b>Honours/Pass/Fail grading</b>          (Check one of the above boxes if the course will be graded on a P/F or H/P/F basis. Default grading is percentage.)</p>
--	---

*SOCI 314 (3) Sociology of Masculinity*

<p><b>Category:</b> 1 <b>Faculty:</b> Arts  <b>Department:</b> Sociology  <b>Faculty Approval Date:</b> Feb. 11, 2021  <b>Effective Session (W or S):</b> W  <b>Effective Academic Year:</b> 2021</p>	<p><b>Date:</b> Oct 13 2020  <b>Contact Person:</b> Silvia Bartolic for Course Author Tony Silva  <b>Phone:</b> 604-827-0684  <b>Email:</b> bartolic@mail.ubc.ca</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>SOCI 314 (3) Sociology of Masculinity</b>          How masculinity differs across social contexts and time periods.</p>	<p><b>URL:</b>  <a href="http://www.calendar.ubc.ca/vancouver/courses.cfm?code=SOCI">http://www.calendar.ubc.ca/vancouver/courses.cfm?code=SOCI</a></p> <p><b>Present Calendar Entry:</b> None</p>

<p><i>Prerequisite:</i> One of SOCI 100, SOCI 101, or SOCI 102</p>	<p><b>Type of Action:</b> New Course</p> <p><b>Rationale for Proposed Change:</b>          Although there are several courses that examine gender at UBC, none specifically focus on masculinity. There is a decades-long lineage of research about masculinity, but few opportunities for students to learn about this research. Indeed, few universities in Canada, the United States, or elsewhere in the world offer courses that focus specifically on this topic. In recent years there has been increased interest in studying identities and social phenomena that are socially advantaged or which have been under-examined outside of university settings. The MeToo movement, for instance, has put a spotlight on the relationship between masculinity and gender inequality.</p> <p>The proposed Sociology of Masculinity course would focus specifically on masculinity: how it changes over time and differs across contexts; how it relates to sexuality, race, nationality, religion, age, and global processes; and the relationship between masculinity and various social inequalities. A course that examines masculinity, specifically, complements courses that focus on gender or gender inequality more broadly (e.g. Soci 312: Gender Relations). This course would highlight empirical social science research on masculinity.</p> <p><b>Not available for Cr/D/F grading</b>  <input type="checkbox"/> <b>(undergraduate courses only)</b>          (Check the box if the course is NOT eligible for Cr/D/F grading and provide the rationale for this below. Note: Not applicable to graduate-level courses.)</p>
--	--

	<p><b>Rationale for not being available for Cr/D/F:</b> The default is that undergraduate courses are offered for Cr/D/F unless there is a significant reason as to why it should not be so.</p> <p><input type="checkbox"/> <b>Pass/Fail or</b>    <input type="checkbox"/> <b>Honours/Pass/Fail grading</b> (Check one of the above boxes if the course will be graded on a P/F or H/P/F basis. Default grading is percentage.)</p>
--	---



## UBC Curriculum Proposal Form Change to Course or Program

**Category: 1**

<b>Faculty:</b> Education <b>Department:</b> N/A <b>Faculty Approval Date:</b> Nov. 19, 2020 <b>Effective Session (W or S):</b> S <b>Effective Academic Year:</b> 2021	<b>Date:</b> January 31, 2020 <b>Contact Person:</b> Dr. Leah Macfadyen <b>Phone:</b> 604-822-4607 <b>Email:</b> leah.macfadyen@ubc.ca
<b>Proposed Calendar Entry:</b>  <b>ETEC 543 (3) Understanding Learning Analytics</b>	<b>URL:</b> N/A  <b>Present Calendar Entry:</b> No present calendar entry - new course  <b>Type of Action:</b> Addition of new course: ETEC 543  <b>Rationale for Proposed Change:</b> This 3-credit course fills an existing gap in the Master of Educational Technology (MET) program curriculum: it introduces and surveys the new and significant field of learning analytics (LA), a significant area of technology-enhanced learning that has emerged during the last decade. In recent years there has been a growing interest in moving from LA research to practice, and in implementing analytics to support learning and teaching. Contemporary educators and educational technology specialists need to be able to understand and think critically about the possible advantages and disadvantages of LA in different contexts. This is not a 'data science' course. It is aimed at a scholar-practitioner audience, and examines LA research and practice in the context of other data-focused approaches to educational change. Learners consider definitions of analytics, explore different LA approaches and methods, examine implementation challenges, and think critically about the range of diverse LA tools and claims that already exist.  The course has been successfully piloted under a special topics number. It has been

	<p>fully subscribed and well received by our students each term, and we would like to add it permanently to the MET curriculum.</p> <p><input type="checkbox"/></p> <p><b>Not available for Cr/D/F grading (undergraduate courses only)</b> (Check the box if the course is NOT eligible for Cr/D/F grading and provide the rationale for this below. Note: Not applicable to graduate-level courses.)</p> <p><b>Rationale for not being available for Cr/D/F:</b> The default is that undergraduate courses are offered for Cr/D/F unless there is a significant reason as to why it should not be so.</p> <p><input type="checkbox"/> <b>Pass/Fail or</b> <input type="checkbox"/> <b>Honours/Pass/Fail grading</b> (Check one of the above boxes if the course will be graded on a P/F or H/P/F basis. Default grading is percentage.)</p>
--	---



## THE UNIVERSITY OF BRITISH COLUMBIA

## UBC Curriculum Proposal Form Change to Course or Program

**Category: 1**

<b>Faculty:</b> Education <b>Department:</b> N/A <b>Faculty Approval Date:</b> Nov. 19, 2020 <b>Effective Session (W or S):</b> S <b>Effective Academic Year:</b> 2021	<b>Date:</b> March 10, 2020 <b>Contact Person:</b> Dr. Jennifer Jenson <b>Phone:</b> 604-822-8963 <b>Email:</b> jennifer.jenson@ubc.ca
<b>Proposed Calendar Entry:</b>  <b>ETEC 544 (3) Digital Games &amp; Learning</b>	<b>URL:</b> N/A  <b>Present Calendar Entry:</b> No present calendar entry; new course  <b>Type of Action:</b> Addition of new course: ETEC 544  <b>Rationale for Proposed Change:</b> This 3-credit course has been successfully offered as a Master of Educational Technology (MET) special topics course twice, with full enrolment on each offering. We are proposing it be added permanently as a new course under the prefix/number ETEC 544.  Digital media and learning theorists have suggested that learners may learn best when they are 'at play', where serious play and educative/learning action coincide. This course examines play as it is currently developed and popularly imagined in digital games in order to more closely examine what is "learned" and at play in those immersive environments. Although computer gaming represents, for some people, something unfamiliar, potentially subversive and antithetical to education's intellectual and social goals, play has always been a powerful vehicle for learning. There is little doubt that young people today, who represent computer gaming's largest and fastest-growing audience, are learning a great deal in and through digital play, but what is it they are learning, and how? The purpose of this course is to give serious attention to

	<p>and careful analysis of the contemporary digital forms of gameplay.</p> <p>The topic of the course is hugely relevant for education today, and it does not overlap with other MET courses. The course is based on current research and theory, and it is highly relevant to MET students from diverse backgrounds both within and beyond education.</p> <p style="text-align: center;"><b>Not available for Cr/D/F grading (undergraduate courses only)</b></p> <p>(Check the box if the course is NOT eligible for Cr/D/F grading and provide the rationale for this below. Note: Not applicable to graduate-level courses.)</p> <p><b>Rationale for not being available for Cr/D/F:</b> The default is that undergraduate courses are offered for Cr/D/F unless there is a significant reason as to why it should not be so.</p> <p style="text-align: center;"><b>Pass/Fail or                      Honours/Pass/Fail grading</b></p> <p>(Check one of the above boxes if the course will be graded on a P/F or H/P/F basis. Default grading is percentage.)</p>
--	--



## UBC Curriculum Proposal Form Change to Course or Program

**Category: (1)**

<p><b>Faculty:</b> Medicine  <b>Department:</b> Occupational Science and Occupational Therapy  <b>Faculty Approval Date:</b> 01/19/21  <b>Effective Session (W or S):</b> W  <b>Effective Academic Year:</b> 2021</p>	<p><b>Date:</b> 09/16/2020  <b>Contact Person:</b> Suzanne Huot  <b>Phone:</b> 604-822-7395  <b>Email:</b> suzanne.huot@ubc.ca</p>
<p><b>Proposed Calendar Entry:</b></p> <p><b>OSOT 301 (3) Introduction to Human Occupation</b></p> <p>Explores human occupation, conceptualized as all activities people do based on need, obligation, or preference. As the core construct of the discipline of occupational science and practice of occupational therapy, human occupation is examined for its relation to personal and social determinants of health.</p> <p><b>[3-0-0]</b></p>	<p><b>URL:</b> n/a</p> <p><b>Present Calendar Entry:</b> n/a</p> <p><b>Type of Action:</b> Create new course</p> <p><b>Rationale for Proposed Change:</b> I developed a similar course at another institution to promote visibility of the discipline of occupational science and practice of occupational therapy at the undergraduate level. A course providing foundational knowledge about the practice of occupational therapy and its underlying science is needed at UBC. It can help recruit students to the university's related graduate programs (Masters of Occupational Therapy, Masters of Science and/or PhD in Rehabilitation Sciences). It would also provide important foundational understanding for students entering these programs and could eventually be envisioned as a pre-requisite course for the MOT program. Students will develop a basic understanding of human occupation, conceptualized as the myriad activities that people do based on need, obligation, or preference. As the science of everyday living, occupational science explores the complexity of occupations. As occupational science has an interdisciplinary focus, a consistent offering may also draw students from other programs, departments and faculties.</p>



	<p><input type="checkbox"/> <b>Not available for Cr/D/F grading (undergraduate courses only)</b>          (Check the box if the course is NOT eligible for Cr/D/F grading and provide the rationale for this below. Note: Not applicable to graduate-level courses.)</p> <p><b>Rationale for not being available for Cr/D/F:</b> The default is that undergraduate courses are offered for Cr/D/F unless there is a significant reason as to why it should not be so.</p> <p><input type="checkbox"/> <b>Pass/Fail or</b>    <input type="checkbox"/> <b>Honours/Pass/Fail grading</b>          (Check one of the above boxes if the course will be graded on a P/F or H/P/F basis. Default grading is percentage.)</p>
--	---



## UBC Curriculum Proposal Form Change to Course or Program

### Category: 1

<b>Faculty:</b> Pharmaceutical Sciences <b>Department:</b> n/a <b>Faculty Approval Date:</b> 18 Feb 2021 <b>Effective Session (W or S):</b> S <b>Effective Academic Year:</b> 2021	<b>Date:</b> October 21, 2020 <b>Contact Person:</b> Marion Pearson <b>Phone:</b> 2-4933 <b>Email:</b> marion.pearson@ubc.ca
<b>Proposed Calendar Entry:</b>  PHRM 307 (2-6) c Directed Studies in Epidemiology and Health Outcomes Individual assignments involving scholarly inquiry related to epidemiology or health outcomes.	<b>URL:</b> N/A  <b>Present Calendar Entry:</b> N/A  <b>Type of Action:</b> Create new course  <b>Rationale for Proposed Change:</b>  Epidemiology and health outcomes is a prominent field of research in the Faculty of Pharmaceutical Sciences, and directed study projects in this area are frequently offered by faculty members. Projects in this area do not fit into any of the existing directed study courses, PHRM 302, 303, 304, 305 and 306, so students undertaking these projects are currently being registered in the non-specific course PHRM 300 (2-9) d Special Topics.  <input checked="" type="checkbox"/> <b>Not available for Cr/D/F grading</b> (undergraduate courses only)  <b>Rationale for not being available for Cr/D/F:</b>  This course is only open to Pharmacy students, who are permitted to take non-pharmacy electives, but not pharmacy electives, for Cr/D/F.  <input type="checkbox"/> <b>Pass/Fail or</b> <input type="checkbox"/> <b>Honours/Pass/Fail grading</b> (Check one of the above boxes if the course will be graded on a P/F or H/P/F basis. Default grading is percentage.)

## NEUROSCIENCE

### Category (1)

<b>Faculty:</b> Science <b>Department:</b> Cellular, Anatomical & Physiological Sciences, Zoology, Psychology <b>Faculty Approval Date:</b> March 4, 2021	<b>Date:</b> March 4, 2021 <b>Contact Person:</b> Norm Hutchinson <b>Phone:</b> 604-822-8188 <b>Email:</b> norm@cs.ubc.ca
<b>Effective Date for Change:</b> 21S  <b>Proposed Calendar Entry:</b>  <b>Neuroscience</b>  <p>The departments of Cellular and Physiological Sciences [link to: <a href="https://cps.med.ubc.ca/">https://cps.med.ubc.ca/</a>], Psychology [link to: <a href="https://psych.ubc.ca/">https://psych.ubc.ca/</a>], and Zoology [link to: <a href="https://www.zoology.ubc.ca/">https://www.zoology.ubc.ca/</a>] jointly offer one undergraduate degree in neuroscience. For information on advanced programs in neuroscience, see the Graduate Program in Neuroscience [link to: <a href="http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,209,952,0">http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,209,952,0</a>].</p> <p>Students who are continuing in the B.Sc. program and entering second year and wish to pursue a Neuroscience specialization, and including students who have applied to enter the Faculty of Science and expect to have second-or third-year standing upon admission, must apply using the online coordinated admissions process [link to: <a href="https://science.ubc.ca/students/degree/apply">https://science.ubc.ca/students/degree/apply</a>] administered by the Faculty of Science. Students can check the Student Service Centre to see if they are eligible to register as at least a second-year B.Sc. student (and thus able to use the online coordinated admissions process) in June.</p> <p>Students who are continuing in the B.Sc. program and entering third year and wish to pursue a Neuroscience specialization must apply online through the Neuroscience program website for admission mid-May.</p>	<b>Present Calendar Entry:</b>

## **Co-operative Education Program in Neuroscience**

**Co-operative Education is a process of education which integrates academic study with related and supervised work experience in co-operating employer organizations.**

**An optional Co-operative Education Program is available for students in the Neuroscience specialization. The Program, which is intended to help prepare interested and qualified students for research careers in industry, university, or government settings, includes at least 16 months of work placement (i.e., at least four work terms) supervised by scientists in industrial, academic or governmental positions. Co-op advisors visit students at their place of work and provide advice on work term reports required of all students in the program. The four work terms are normally taken consecutively beginning in Summer Session after third year and ending in Summer Session after fourth year.**

**To be eligible, students must be in a Neuroscience specialization, and they must have completed at least one academic term in this program. Admission is by application to the Science Co-op Office. Selection of students is based on academic performance and general suitability to the work environment, as determined by resumé and interview. The total enrolment is subject to the availability of appropriate work placements. The work placements are arranged by mutual agreement between students and employing organizations. Participating students register for NSCI 398, 399, 498, or 499, as appropriate, and pay the Cooperative Education program fee per course as well as Co-operative Education Program Fees [link to: <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=14,296,0,0#18095>].**

**Graduation in the Co-operative Education Program for Neuroscience requires a student to complete NSCI 398, 399, 498, and 499, in**

**addition to the normal academic requirements. Students may choose appropriate timing for their work terms.**

**Detailed information on the program can be obtained from the Neuroscience Specialization Advisors or from the Co-operative Education Program.**

### **Specialization**

**Major (####): Neuroscience (NSCI)**

#### **First Year**

<b>Communication Requirement<sup>1</sup></b>	<b>6</b>
<b>BIOL 112, 140<sup>2</sup></b>	<b>5</b>
<b>CHEM 110, 111, 120, or 121<sup>3</sup></b>	<b>4</b>
<b>CHEM 123 or 130<sup>3</sup></b>	<b>4</b>
<b>DSCI 100</b>	<b>3</b>
<b>PHYS 117 or 131<sup>4</sup></b>	<b>3</b>
<b>Electives<sup>5</sup></b>	<b>5</b>
<b><i>Total Credits</i></b>	<b><i>30</i></b>

#### **Second Year**

<b>PSYC 277, 278</b>	<b>8</b>
<b>NSCI 200, 201</b>	<b>6</b>
<b>BIOL 200, 234</b>	<b>6</b>
<b>BIOL 201 or BIOC 202</b>	<b>3</b>
<b>CHEM 233, 235</b>	<b>4</b>
<b>Electives<sup>5</sup></b>	<b>3</b>
<b><i>Total Credits</i></b>	<b><i>30</i></b>

#### **Third Year**

<b>NSCI 300, 301, 302, 311</b>	<b>12</b>
<b>BIOL 371, 372</b>	
<b>or PSYC 370, 371<sup>6</sup></b>	<b>6</b>
<b>Electives<sup>5</sup></b>	<b>12</b>
<b><i>Total Credits</i></b>	<b><i>30</i></b>

#### **Fourth Year**

<b>NSCI 400<sup>7</sup></b>	<b>6</b>
<b>9 credits from List A (if</b>	<b>12</b>
<b><i>Behavioural/Cognitive Neuroscience Emphasis</i>) or List</b>	
<b>B (if <i>Cellular/Molecular Neuroscience Emphasis</i>), and</b>	
<b>3 credits from List A (if</b>	
<b><i>Cellular/Molecular Neuroscience Emphasis</i>) or List B (if</b>	
<b><i>Behavioural/Cognitive</i></b>	

***Neuroscience Emphasis)***

- **List A**  
(Behavioural/Cognitive Neuroscience): PSYC 361, PSYC 363, PSYC 365, PSYC 367, PSYC 368, PSYC 409, PSYC 460, PSYC 461, PSYC 462, PSYC 472
- **List B (Molecular/Cellular Neuroscience):** BIOL 453, BIOL 455, BIOL 458, BIOL 459, BIOL 460, CAPS 421, CAPS 426<sup>8</sup>

Electives <sup>5</sup>	12
Total Credits	30

Credits for Degree	120
--------------------	-----

<sup>1</sup> A total of 6 credits of coursework is required to meet the Communication Requirement. For a full list of acceptable courses see Communication Requirement [link to: <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1463#18434>].

<sup>2</sup> Students without one of Biology 11 or Biology 12 must take BIOL 111 before taking BIOL 112 or 140. Students without Chemistry 12 must take CHEM 100, CHEM 110, or CHEM 111 before taking BIOL 112.

<sup>3</sup> Students who do not have B.C. High School Chemistry 12 (or its equivalent) must write the UBC Chemistry Basic Skills Test and may be required to take CHEM 100. If a student elects to take CHEM 110 or 120, and/or CHEM 130, the student will have an extra 1 or 2 elective credits available to them.

<sup>4</sup> Students without Physics 12 must take PHYS 100 before taking PHYS 117 or PHYS 131.

<sup>5</sup> Elective credits together with required courses must fulfill the Faculty of Science's:

- a) Foundational Requirement [link to: <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1465>];
- b) Laboratory Science Requirement [link to: <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1465>];

<p><a href="#">ex.cfm?tree=12,215,410,1465];</a></p> <p>c) <u>Science Breadth Requirement</u> [link to: <a href="http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1663">http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1663</a>];</p> <p>d) <u>Science and Arts Requirements</u> [link to: <a href="http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1464">http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1464</a>];</p> <p>e) <u>Upper-level Requirement</u> [link to: <a href="http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1466">http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1466</a>];</p> <p>f) <u>General Degree Requirements</u> [link to: <a href="http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,408">http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,408</a>].</p> <p><sup>6</sup> For <i>Cellular and Molecular Emphasis</i>, take BIOL 371, 372. For <i>Behavioural and Cognitive Emphasis</i>, take PSYC 370, 371.</p> <p><sup>7</sup> Alternatively, under exceptional circumstances and with prior approval of the Director of the neuroscience specialization, this requirement may be substituted for 6 credits from: (a) NSCI 448; and/or (b) courses on Lists A or B.</p> <p><sup>8</sup> Students should be aware that CAPS 426 has particularly stringent prerequisites. See the calendar entry for details [link to: <a href="http://www.calendar.ubc.ca/vancouver/courses.cfm?code=CAPS">http://www.calendar.ubc.ca/vancouver/courses.cfm?code=CAPS</a>].</p>	<p><b>Action:</b> Create new specialization.</p> <p><b>Rationale:</b> This is a new Faculty of Science undergraduate specialization. It is a joint initiative of the Faculties of Arts, Science, and Medicine.</p> <p>We are requesting that this program be listed in the calendar prior to its approval by the Ministry of Advanced Education and Skills Training and prior to its planned opening date of 2022W. Accordingly, we are also requesting that the following disclaimer be printed on the top of the calendar entry for this new specialization for the 2021S calendar update:</p> <p><b>“Important Note:</b> “As it is still subject to approval by the Ministry of Advanced Education and Skills Training, the B.Sc. specialization in Neuroscience will not be offered until 2022W or later.”</p> <p><b>Supporting Documents:</b> SCI-20-2-Major (XXXX): Neuroscience (NSCI)</p>
--	---



THE UNIVERSITY OF BRITISH COLUMBIA

Proposal:  
Bachelor of Science  
Neuroscience Specialization

Department of Cellular and Physiological Sciences | Faculty of Medicine

Department of Psychology | Faculty of Arts

Department of Zoology | Faculty of Science

University of British Columbia

12 Feb 2021

<b>Proposal:</b>	<b>1</b>
<b>Bachelor of Science</b>	<b>1</b>
<b>Neuroscience Specialization</b>	<b>1</b>
<b>1 Executive Summary</b>	<b>4</b>
1.1 THE CREDENTIAL	4
1.3 FACULTIES OFFERING SPECIALIZATION	4
1.4 SPECIALIZATION START DATE AND COHORT SIZE	4
1.5 SPECIALIZATION COMPLETION TIME	4
1.6 SPECIALIZATION LEARNING OBJECTIVES	4
1.7 CONTRIBUTION TO UBC'S MANDATE AND STRATEGIC PLAN	5
1.8 INSTITUTIONAL CONTACTS	5
<b>Appendix to The Executive Summary (For UBC Internal Purposes Only)</b>	<b>6</b>
SPECIALIZATION BUDGET AND FUNDING	6
SPACE REQUIREMENTS	6
LIBRARY RESOURCES	6
<b>2 Proposal</b>	<b>7</b>
2.1 SPECIALIZATION RATIONALE	7
2.1.1 Introduction	7
2.1.2 Market Analysis	9
2.2 SPECIALIZATION DESCRIPTION AND SPECIFICATIONS	12
2.2.1 Mission	12
2.2.2 Admission Requirements	12
2.2.3 Specialization Learning Objectives	12
2.2.4 Linking Objectives to Learning Activities	12
2.2.5 Curriculum Plan	13
2.2.6 Delivery Methods	14
2.2.7 Specialization Strengths	15
2.2.8 Specialization Management and Assessment	15
2.2.9 Contribution to UBC's Mandate and Strategic Plans	16
2.2.10 Relationship to Established Programs	17
2.2.11 Target Students	20
2.3 QUALIFIED FACULTY	20
2.3.1 Cellular and Physiological Sciences	20
2.3.2 Psychology	21
2.3.3 Zoology	21
<b>3 Neuroscience Specialization Curriculum</b>	<b>22</b>
3.1 OVERVIEW OF THE CURRICULUM	22
3.2 HIGHLIGHTS OF THE CURRICULUM	22
3.3 DEGREE REQUIREMENTS	22
3.4 CURRICULUM MAPPING TO LEARNING OBJECTIVES	25



# 1 Executive Summary

Neuroscience is an interdisciplinary field of study that has displayed accelerated growth in recent decades. UBC has a long history and strong expertise in Neuroscience, but currently no Neuroscience Undergraduate program. The existing BSc in Behavioural Neuroscience does not sufficiently meet student demand, and covers but one subfield of neuroscience--it does not offer the broad scope wanted by students interested in a Neuroscience program.

## 1.1 THE CREDENTIAL

This proposal is for a new 120-credit specialization option for the Bachelor of Science degree. The specialization name, Neuroscience, will appear on the transcript of and the parchment of alumni.

## 1.2 LOCATION

The University of British Columbia's Point Grey campus is the location for classroom education and administration.

## 1.3 FACULTIES OFFERING SPECIALIZATION

The specialization will be offered and administered by the Faculty of Science. Courses within the program will be taught or jointly taught by faculty from the Faculties of Arts, Medicine, and Science through a variety of traditional and technology-assisted methods of instruction.

## 1.4 SPECIALIZATION START DATE AND COHORT SIZE

The BSc. specialization in Neuroscience will admit its first cohort of students in September 2022. The cohort sizes for 2022W and 2023W will be 150 students per year. Thereafter, the cohort sizes will be capped at 200 students per year. As is the case for other BSc. specializations, students will be accepted into the specialization by competitive entry after completion of their first year. Because of the interdisciplinary nature of the field of neuroscience, It is anticipated that the new Neuroscience specialization will be of interest to students from a wide variety of backgrounds and with a wide array of interests.

## 1.5 SPECIALIZATION COMPLETION TIME

Anticipated time for completion of the BSc in Neuroscience is the same as for most BSc specializations: 32 months (8 terms) of full-time study (i.e., approximately 15 credits per term).

## 1.6 SPECIALIZATION LEARNING OBJECTIVES

1. Describe and apply historical and foundational concepts and theories in neuroscience (including basic cellular, systems, behavioral and cognitive underpinnings) in a variety of contexts.
2. Demonstrate a conceptual understanding and procedural knowledge of neuroscience and neuroscience research design and techniques.
3. Describe the behavioural features and explain the neurobiological mechanisms of a range of neurological and psychiatric conditions.
4. Design a well-thought-out neuroscience experiment with human participants and/or animal subjects appropriate for conducting at an undergraduate level, including design, ethical approval, data collection, and statistical analyses.
5. Summarize a primary neuroscience-related academic article, analyze its strengths, identify its limitations, and propose appropriate avenues for further inquiry.
6. Review and integrate a body of neuroscience literature into a concise synopsis.
7. Produce well-crafted instructions, reports, essays, presentations, discussions, and debates aimed at

both neuroscientific and non-neuroscientific audiences.

8. Explain the ethical and societal implications of neuroscience research and theory.
9. Produce a well-substantiated critique based on ethical, design, methodological and interpretive considerations for: (1) a piece of neuroscience research (e.g., a research article); (2) a neuroscientific technique; and (3) a field of study in neuroscience.
10. Develop, reflectively analyze, and edit a personalized curriculum and career plan.
11. Provide, receive, and integrate peer/mentor feedback on academic work.
12. Program effectively for the purposes of data collection, processing, analysis, and presentation.

## 1.7 CONTRIBUTION TO UBC'S MANDATE AND STRATEGIC PLAN

The Neuroscience program aligns with UBC's Mandate and Strategic Plan, incorporating strategies from three of the four core areas (i.e., Interdisciplinary Collaboration & Education, Experiential Learning, and Diverse Community). The program will attract a diverse global community of students, faculty and staff, foster a strong, interdisciplinary research culture, and enhance and expand experiential learning and research opportunities. The program will strengthen UBC's reputation as a leader in the field, contribute to new knowledge and innovation, and transform the impact of this knowledge and technology on tackling complex problems in society.

## 1.8 INSTITUTIONAL CONTACTS

Vanessa Auld, Professor | Head, Dept of Zoology, Faculty of Science, UBC (auld@zoology.ubc.ca)

Steven Barnes, Assoc. Professor of Teaching | Assoc. Head Undergraduate Affairs, Dept of Psychology, Faculty of Arts, UBC (sjb@psych.ubc.ca)

Liisa Galea, Professor, Dept of Psychology, Faculty of Arts | Director of the Graduate Program in Neuroscience, UBC (liisa.galea@ubc.ca)

Timothy O'Connor, Professor, Dept of Cellular and Physiological Sciences, Faculty of Medicine, UBC (timothy.oconnor@ubc.ca)

# Appendix to The Executive Summary (For UBC Internal Purposes Only)

## **SPECIALIZATION BUDGET AND FUNDING**

The budget for the BSc Specialization in Neuroscience has been approved by the Faculties of Arts, Science, and Medicine.

## **SPACE REQUIREMENTS**

The specialization's administrative offices (i.e., office of the director, advising office) will be housed in the UBC Centre for Brain Health, as will the office of the undergraduate neuroscience club. The lab space for the third-year core neuroscience lab course (i.e., NSCI 300) will be housed in the new biosciences building.

The specialization's development team has consulted with facilities about the classroom requirements for the new core courses, which will begin with a class size of 150 that will grow to a size of not more than 200 students by 2024W. It was determined that the additional classroom space would not pose a problem at UBC Vancouver.

## **LIBRARY RESOURCES**

No additional library resources will be required for the specialization.

## 2 Proposal

### 2.1 SPECIALIZATION RATIONALE

#### 2.1.1 Introduction

Neuroscience is an interdisciplinary field of study that has displayed accelerated growth in recent decades. In the past decade, biotechnological advances have dramatically expanded the toolkit of neuroscientists, further fueling this growth. Neuroscience comprises a large number of subdisciplines, including but not limited to: neuroanatomy, neurochemistry, neuroendocrinology, neuropathology, neuropharmacology, neurophysiology, neuropsychology, behavioural neuroscience, and cognitive neuroscience.

#### Neuroscience at the University of British Columbia (UBC)

Neuroscience has been a research area within UBC for at least 6 decades. Currently, there are over 110 research faculty members on the UBC Vancouver campus who either self-identify as being neuroscientists or are involved in neuroscience-related research (see [neuroscience.centreforbrainhealth.ca/members-neuroscience](https://neuroscience.centreforbrainhealth.ca/members-neuroscience)). Neuroscientists at UBC represent over 13 departments from the Faculties of Medicine, Science, and Arts at the University of British Columbia. Laboratory and teaching areas are located across the UBC campus, at UBC Hospital, and at Vancouver General Hospital.

Since 1984, there has been a graduate program in neuroscience at UBC, offering MSc and PhD degrees. The graduate program in neuroscience is a multidisciplinary, research-oriented program administered through the Faculty of Medicine and the Djavad Mowafaghian Centre for Brain Health at UBC, and aims to provide students with a broad knowledge of Neuroscience as well as intensive program in at least one area of research.

#### Behavioural Neuroscience Specialization is Not Enough

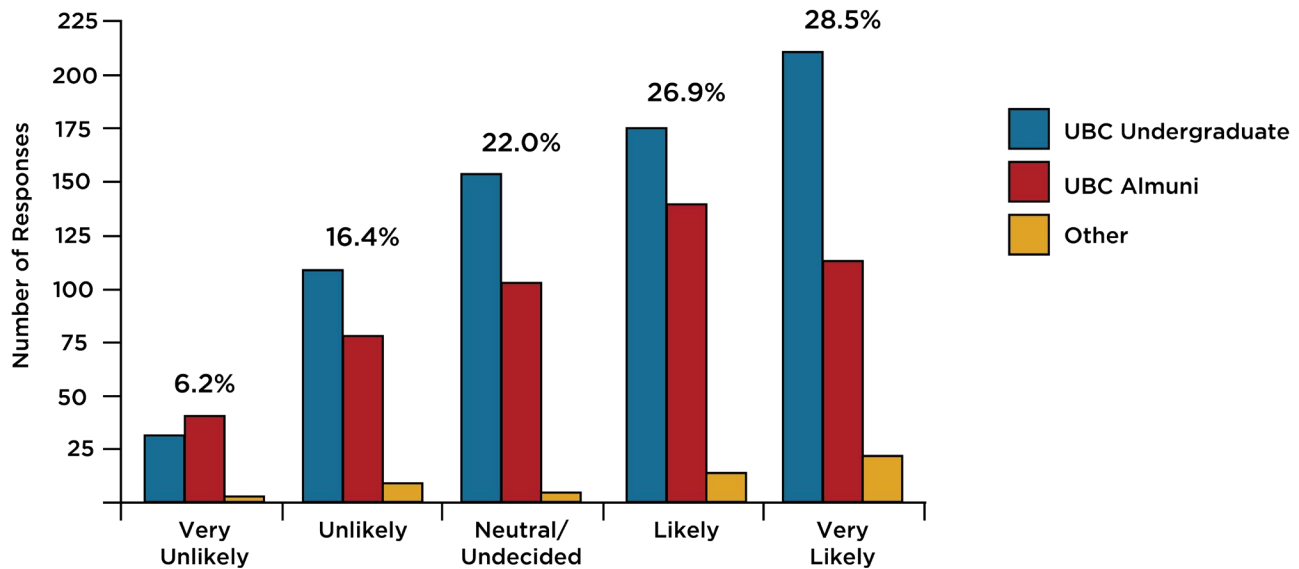
Since 1974, there has been an undergraduate Bachelor of Science specialization in Behavioural Neuroscience (formerly titled 'Biopsychology'). This specialization has been very popular with students (as evidenced by the high entrance averages and number of applications per year), but seats have been limited--with not more than 100 students entering the specialization per year (the specialization only allowed the entry of 50 students per year up until 2018W). The BSc in Behavioural Neuroscience is offered by the Faculty of Science, but administered by the Faculty of Arts, Department of Psychology.

Student engagement in neuroscience and enthusiasm for a neuroscience undergraduate major is significant. In 2017, the executive members of the UBC Neuroscience Club, a student-led initiative for students interested in Neuroscience, administered an informal survey to their 127 members (both alumni and current students): 80% of respondents would have chosen/would choose a neuroscience major if one had been available, even in place of the current behavioural neuroscience specialization. Only 1% of respondents felt the behavioural neuroscience major in its current form was sufficient. The primary issue being that behavioural neuroscience is but one of many subfields of neuroscience, and thus the specialization does not capture the breadth of interests of those who want to study neuroscience. Nearly half of the respondents felt that the neuroscience courses currently offered at UBC are inadequate, and over three-quarters felt that current courses do not comprehensively cover all relevant/necessary topics. Given that the existing neuroscience offerings at UBC do not sufficiently align with the needs and interests of a substantial portion of students, we set out to gain feedback from students and potential employers and designed a curriculum to address their concerns and stated needs.

## High Demand for Neuroscience Specialization at UBC

Inspired by the informal survey conducted by the UBC Neuroscience Club, UBC launched a large-scale survey in 2019 to assess interest in an undergraduate neuroscience specialization. Students and alumni from over 40 different majors spanning the Faculties of Arts, Medicine, and Science were surveyed. Of the 1,198 respondents, 94.8% of the current students and 93.6% of the alumni either strongly supported or supported the development of the proposed specialization. Moreover, 56% of the current students and 53% of the alumni, when asked “How likely is it that you would have chosen to major in Neuroscience over your current major, had the option been available to you?”, indicated they were very likely or likely to have chosen to major in Neuroscience had the option been available (see figure below; question was: “How likely is it that you would have chosen to major in Neuroscience over your current major, had the option been available to you?”).

### How likely is it that you would have chosen to major in Neuroscience over your current major, had the option been available to you? (n = 1,198)



## A Neuroscience Specialization for UBC

The Faculties of Arts, Science, and Medicine are proposing to create a BSc. in Neuroscience. The rationale for such a new specialization at this time includes:

1. Addressing the absence of an undergraduate Neuroscience specialization despite considerable growth in this field of Science over the past 5 decades. Most research-intensive universities have an undergraduate program in Neuroscience or something comparable.
2. Addressing the results of a 2019 large-scale formal survey of current UBC students and UBC alumni from a wide variety of related majors. That survey found that a majority of respondents would have been ‘likely’ or ‘very likely’ to choose to major in neuroscience over their current major.
3. Attracting those students who might have applied to another university with a neuroscience program.
4. Supporting the neuroscientific research being carried out by myriad faculty members spanning multiple Faculties (e.g., Arts, Science, Medicine). By giving undergraduates training in neuroscience, we support UBC researchers looking for high quality talent in their research labs; and we also give those neuroscience undergraduates valuable research experience.
5. Strengthening UBC’s reputation by offering an undergraduate specialization in Neuroscience that would both compliment the existent graduate program in Neuroscience and also broaden the impact of UBC as a leader in the field of Neuroscience.

## 2.1.2 Market Analysis

### 2.1.2.1 Market Research Approach

To determine the viability of the proposed specialization, the following activities were undertaken:

- 1) Market Research
  - a. A review of relevant recent Labour Market reports, including ESMI Labour Market trends analysis, completed with the assistance of UBC Extended Learning
  - b. A Canadian, US, and International Educational Program Comparator Analysis with the assistance of UBC Extended Learning
- 2) Validation by industry advisors

We consulted with and received feedback from many organizations in the region, in order to better understand both the demand in the labour market for our graduates and to understand the skills and knowledge that would be valued by potential employers of our graduates. Industry consulting partners included:

- Dr. Sam Wadsworth, Chief Scientific Officer, Aspect Biosystems (Microfluidic 3D bioprinting)
- Dr. Chris Fibiger, Chief Scientific Officer, HLS Therapeutics (CNS and cardiovascular pharmaceuticals)
- Dr. Steven Pelech, President and Chief Scientific Officer, Kinexus
- Dr. Kelly Sakaki, Systems Engineer, R&D, Scientifica Ltd
- Dr. Erin Knock, Senior Scientist, R&D Team Lead, Stemcell Technologies
- Catherine Roome, President and Lead Executive Officer, Technical Safety BC
- Dr. JP Johnson, VP Biology, Xenon Pharmaceuticals Inc.

### 2.1.2.2 Market Insights

#### General market trends:

- The life sciences sector contributes significantly to B.C.'s economy<sup>1</sup>
  - The sector in BC employs over 17,300 (numbers as of 2018, most recent data available)
  - The sector recorded almost \$5.4 billion in revenue, produced \$1.6 billion in GDP, and exported \$484 million in life sciences goods and services (in 2018)
- The life sciences sector is rapidly growing in BC
  - The sector included approximately 1,120 businesses with employees in 2018, an increase of 4.8% over 2017, exceeding the national growth rate of 2.9%
  - The number of people employed in life sciences grew by 5.6% between 2017 and 2018, well above the 1.1% total employment growth in the province
  - Access to talent is one of the top challenges to growing the sector in BC
- Health and Life Sciences is a key focus area in the BC Jobs Plan

#### Specific insights:

- As in many scientific research fields, work is increasingly data-centric, with a call for greater data science skills among graduates (skills which are highly transferable/help increase graduate

---

<sup>1</sup> *Life Sciences British Columbia* (2020). [Life Sciences in British Columbia: Sector Profile](https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/initiatives-plans-strategies/technology-industry/lifesciencesinbc_sectorprofile_finalweb.pdf). Available June 2020 at [https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/initiatives-plans-strategies/technology-industry/lifesciencesinbc\\_sectorprofile\\_finalweb.pdf](https://www2.gov.bc.ca/assets/gov/british-columbians-our-governments/initiatives-plans-strategies/technology-industry/lifesciencesinbc_sectorprofile_finalweb.pdf)

employability).<sup>2</sup> The UBC BSc. in Neuroscience specialization learning objectives and curriculum have integrated data science skill building.

- Research publication statistics reflect the increasing focus on interdisciplinary work within the field. This shift is also reflected in reports from national and international neuroscience institutions, including the Canadian Association for Neuroscience and the Canadian Institute of Neurosciences, Mental Health, and Addiction. The UBC Neuroscience specialization emphasizes interdisciplinary knowledge and skill development, with courses from seven departments across three faculties.

**Industry experts:** The specialization proposal and curriculum was well-received by our industry experts. Some key insights from industry experts include:

- Experts anticipate that the specialization will produce graduates who will meet an unmet need in their organization/industry.
- Students with a BSc in Neuroscience would be more competitive than related but less-specialized fields (e.g. Biology, Psychology); it is likely demand for such training will increase in the coming years.
- Feedback was mixed with regards to the importance of graduate work in this field – some suggested that graduate education is essential while others noted that job experience after an undergraduate program such as the proposed program is considered equivalent to graduate training and does not limit an individual.
- It was noted that this specialization would generate strong applicants for graduate programs.
- Curriculum considerations:
  - Graduates who have a solid understanding of both the psychological and molecular sides of neuroscience would be very helpful and welcomed by industry.
  - A specialization offering a varied selection of courses and concentrations within this large field would provide students with specialized skills no one with a more general degree would have.
  - Teaching neuroethics as a strong value is critical.
  - Lab-based courses/skills would give students an advantage over other candidates.
- Potential for co-op and employment opportunities:
  - Co-op and other experiential opportunities were strongly encouraged – many were interested in partnering with UBC to provide opportunities.
  - Each industry employer estimated at least 1-10 new positions annually for graduates of this specialization.
  - Highlighted that this specialization provides access to a pool of talent of individuals who check all the boxes and are interested in industry.
  - Highlighted that this specialization will generate strong candidates for grad programs as well as industry, and that there will be a demand for both.

**Some key quotes from industry experts:**

“I believe a student with a degree in neuroscience [compared to other BSc degrees such as Behavioural Neuroscience or Biology] would be more competitive. Laboratory techniques, experimental design, data interpretation and other such skills are taught across many

---

<sup>2</sup>Forum on Neuroscience and Nervous System Disorders; Board on Health Sciences Policy; Institute of Medicine. (2015). *Developing a 21st Century Neuroscience Workforce: Workshop Summary*. Washington (DC): National Academies Press (US); doi: 10.17226/21697.

Goldman, M. S., & Fee, M. S. (2017). Computational training for the next generation of neuroscientists. *Current Opinion in Neurobiology*, 46, 25-30. doi:10.1016/j.conb.2017.06.007

disciplines. The advantage of a neuroscience degree is the very specialized and complex theory behind all the techniques and knowledge of the field. This is more difficult to acquire through on-the-job experience.”

(Dr. Erin Knock, Senior Scientist, Research and Development, Stemcell)

“We believe students graduating from UBC with a Bachelor of Science Major in Neuroscience will have gained specialized skills that a more general degree does not provide. STEMCELL will be pleased to participate in the training of co-op students working towards this Major, and we feel confident that graduates from this program will be strong candidates for positions across our company.”

(Dr. Sharon Louis, Senior Vice President, Research and Development, Stemcell)

“I think they would be more competitive. Currently a bad climate, but in 4 years time, when we would be launching our first graduates, the climate will have changed and there will be a real demand for these people with this kind of background. That would include people with a bachelor’s degree, looking for tech or project management positions. For them to have a good solid understanding of neuroscience (both the psychological and molecular sides) would be very helpful and welcomed by industry. There will be a demand for both. The program will also generate strong candidates for grad programs. Those folks will also be needed. I think there will be lots of opportunities for these young people.”

(Dr. Chris Fibigier, Chief Scientific Officer, HLS)

“The program will unequivocally shape undergraduates to be better prepared for the Industry, not only with a comprehensive Neuroscience curriculum, but also with development of interpersonal skills to be an effective contributor in the workplace.”

(Christine Mazzucco, Associate Director, Clinical Operations, Johnson & Johnson)

#### **2.1.2.4 Potential Sectors of Employment for Graduates**

Undergraduate Neuroscience students take many different pathways upon graduation, including graduate school in Neuroscience, advanced/professional degrees in related fields, medical school, research, and industry. For those that go on to employment, neuroscientists are employed in educational settings, hospitals and other healthcare settings, industrial and government research and development facilities, and government and regulatory agencies.

They work as scientists, medical education specialists, statistical officers (and related research-support occupations), educational policy researchers, consultants, program officers, medical laboratory technicians, biological technologists, and more. This translates to work in designing, developing, and evaluating biopharmaceuticals, biotherapeutics, and medical technology/devices, preventative health assessments, and clinical patient care. They collaborate with other science and health professionals to solve complex problems and improve patient care and quality of life.

The lower mainland alone includes dozens of hospitals, post-secondary institutions, and highly-ranked biomedical and pharmaceutical companies.

## 2.2 SPECIALIZATION DESCRIPTION AND SPECIFICATIONS

### 2.2.1 Mission

To provide an engaging, interdisciplinary, and enriched undergraduate experience in the neurosciences. The BSc. specialization in neuroscience is intended to serve as a living lab for new educational techniques for the neurosciences in particular, and for the sciences in general. It will also serve as a model for an interdisciplinary and multi-faculty undergraduate program at UBC.

### 2.2.2 Admission Requirements

Students must have second-year status in a Bachelor of Science degree at UBC and have completed the following UBC courses: (1) BIOL 112 (Biology of the Cell); (2) BIOL 140 (Laboratory Investigations in Life Science); (3) CHEM 110 (Structure, Bonding, and Equilibrium in Chemistry), CHEM 111 (Structure, Bonding and Equilibrium in Chemistry–Lecture), CHEM 120 (Structure and Bonding in Chemistry–Lecture), or CHEM 121 (Structure and Bonding in Chemistry); and (4) CHEM 123 (Thermodynamics, Kinetics, and Organic Chemistry) or CHEM 130 (Thermodynamics, Kinetics and Organic Chemistry–Lecture). Students will be admitted to the specialization via the [Faculty of Science Coordinated Admissions Process](#).

### 2.2.3 Specialization Learning Objectives

1. Describe and apply historical and foundational concepts and theories in neuroscience (including basic cellular, systems, behavioral and cognitive underpinnings) in a variety of contexts.
2. Demonstrate a conceptual understanding and procedural knowledge of neuroscience and neuroscience research design and techniques.
3. Describe the behavioural features and explain the neurobiological mechanisms of a range of neurological and psychiatric conditions.
4. Design a well-thought-out neuroscience experiment with human participants and/or animal subjects appropriate for conducting at an undergraduate level, including design, ethical approval, data collection, and statistical analyses.
5. Summarize a primary neuroscience-related academic article, analyze its strengths, identify its limitations, and propose appropriate avenues for further inquiry.
6. Review and integrate a body of neuroscience literature into a concise synopsis.
7. Produce well-crafted instructions, reports, essays, presentations, discussions, and debates aimed at both neuroscientific and non-neuroscientific audiences.
8. Explain the ethical and societal implications of neuroscience research and theory.
9. Produce a well-substantiated critique based on ethical, design, methodological and interpretive considerations for: (1) a piece of neuroscience research (e.g., a research article); (2) a neuroscientific technique; and (3) a field of study in neuroscience.
10. Develop, reflectively analyze, and edit a personalized curriculum and career plan.
11. Provide, receive, and integrate peer/mentor feedback on academic work.
12. Program effectively for the purposes of data collection, processing, analysis, and presentation.

### 2.2.4 Linking Objectives to Learning Activities

The number of core courses available to students is purposely limited to: (1) ensure that the core courses are tightly aligned with the learning objectives; (2) allow students the flexibility to explore other courses and areas of inquiry; which will in turn (3) encourage the creative thinking that is so fundamental to the interdisciplinary

nature of neuroscience. The learning objectives for this program are diverse and thorough, and research experiences are woven into the fabric of the program, as is advising and peer mentoring. Each learning objective was a core driver for the design of the courses that compose the program. The capstone project brings the course-work and research experience together to demonstrate that the key learning goals have been achieved.

### 2.2.5 Curriculum Plan

Consistent with other BSc specializations, the neuroscience specialization will require the completion of 120 credits. The following are the mandatory courses (see Section 3 for further details of the curriculum). New courses are in green.

#### Year 1:

- BIOL 112 (Biology of the Cell)
- BIOL 140 (Laboratory Investigations in Life Science)
- CHEM 110 (Structure, Bonding, and Equilibrium in Chemistry), CHEM 111 (Structure, Bonding and Equilibrium in Chemistry-Lecture), CHEM 120 (Structure and Bonding in Chemistry-Lecture), or CHEM 121 (Structure and Bonding in Chemistry)
- CHEM 123 (Thermodynamics, Kinetics and Organic Chemistry) or CHEM 130 (Thermodynamics, Kinetics and Organic Chemistry-Lecture)
- DCSI 100 (Introduction to Data Science)
- PHYS 117 (Dynamics and Waves) or PHYS 131 (Energy and Waves-Lecture)

#### Year 2:

- NSCI 200 (Fundamentals of Cellular and Molecular Neuroscience)
- NSCI 201 (Fundamentals of Behavioural and Cognitive Neuroscience)
- PSYC 277 (Research Methods for the Neurosciences)
- PSYC 278 (Statistics for the Neurosciences)
- BIOL 200 (Fundamentals of Cell Biology)
- BIOL 201 (Introduction to Biochemistry) or BIOC 202 (Introductory Medical Biochemistry)
- BIOL 234 (Fundamentals of Genetics)
- CHEM 233 (Organic Chemistry for the Biological Sciences)
- CHEM 235 (Organic Chemistry Laboratory)

#### Year 3:

- NSCI 300 (Neuroscience Lab)
- NSCI 301 (Neuroscience, Ethics, and Society)
- NSCI 302 (Mechanisms of Nervous System Dysfunction)
- NSCI 311 (Advanced Neuroanatomy)
- BIOL 371 (Principles of Neurobiology I) and BIOL 372 (Principles of Neurobiology II), or PSYC 370 (Behavioural Neuroscience I) and 371 (Behavioural Neuroscience II)

#### Year 4:

- NSCI 400 (Neuroscience Capstone)
- Three courses from List A (for *Behavioural/Cognitive Emphasis*) or from List B (for *Cellular/Molecular Emphasis*) below, and one course from List B (for *Cellular/Molecular Emphasis*) or from List A (for *Behavioural/Cognitive Emphasis*).

*List A: Behavioural and Cognitive Neuroscience Emphasis*

PSYC 361 (Neuroscience of Motivation), 363 (Neuroscience of Simple Learning), PSYC 365 (Cognitive Neuroscience), PSYC 367 (Sensory Systems), PSYC 368 (Perceptual Systems), PSYC 409 (Cognitive Neuropsychology), PSYC 460 (Behavioural Neuroendocrinology), PSYC 461 (Neuroplasticity and Behaviour), PSYC 462 (Drugs and Behavioural Neuroscience), PSYC 472 (Advanced Neuroscience of Motivation)

*List B: Cellular and Molecular Neuroscience Emphasis*

BIOL 453 (Insect Physiology [in development]), BIOL 455 (Comparative Neurobiology), BIOL 458 (Developmental Neurobiology), BIOL 459 (Neurobiology of Sensory and Motor Systems), BIOL 460 (Visual System), CAPS 421 (Advanced Cellular and Molecular Physiology), CAPS 426 (Physiological Basis of Central Nervous System Functions)

## 2.2.6 Delivery Methods

In general, the delivery methods will be comparable to most BSc specializations in the biomedical sciences, with the exceptions noted below.

### Neuroscience specialization delivery methods highlights:

- Two second-year competency-focused courses in introductory neuroscience.
- Integrated curriculum and career planning, both at the course- and specialization-level, with supports from peers, instructors, and advisors.
- A third-year three-credit neuroscience lab course that will provide students with experience using a wide range of modern neuroscience research techniques.
- Course-integrated interdisciplinary personal narrative development, and curriculum and career planning, that builds over the course of their degree. This personal narrative development will be guided by input from senior peers in the specialization and the specialization administrators and faculty, and will be an iterative process. The major goals of building such a personal narrative are to: (1) encourage students to integrate, share, and reflect on what they are learning both within their specialization courses and also in their electives; (2) encourage students to continuously build their degree and career goals as they progress through their degree; and (3) provide a source of longitudinal data that will enable faculty and staff to make iterative improvements to the specialization over time.
- Courses will include a mix of lecture-format classes, seminar-style classes, classes that use a blended format, and research-experience-focused courses.
- All students will take a fourth-year capstone-project course. This capstone project could take any one of a number of formats that will depend on student interests and post-graduation goals (e.g., if a student plans to go to graduate school for neuroscience, the obvious choice would be a lab-based research project). Students will be supervised by a faculty member for their capstone project.

### **2.2.7 Specialization Strengths**

The specialization offers a curriculum that is expansive yet grounded in the foundational principles of neuroscience. The specialization was developed in consultation with faculty expertise within the Faculties of Medicine (Department of Cellular and Physiological Sciences), Science (Department of Zoology) and Arts (Department of Psychology), with broad consultation with students. See also the box in section 1.11, above.

### **2.2.8 Specialization Management and Assessment**

The specialization will be offered and administered by the Faculty of Science and be headed by a Specialization Director. The Director will be appointed by a Steering Committee.

#### **2.2.8.1 Steering Committee**

The Steering Committee will be Chaired by the Associate-Provost Teaching and Learning (ex officio) (Provost's office). Composition of the committee will include the Head from the Department of Psychology, the Head from the Department of Cellular, Anatomical and Physiological Sciences, the Head from the Department of Zoology, the Director of the Graduate Program in Neuroscience, the Director of the David Mowafaghian Centre for Brain Health, the Associate Deans Academic from Arts, Medicine, and Science (or delegates, ex officios), the Undergraduate Neuroscience Club President or Vice-President (ex officio), a Science Undergraduate Society Representative (ex officio), and a Dean of Science office administrator (ex officio). The Specialization Director reports to the Steering Committee. Designates will require the approval of the committee.

The steering committee will be responsible for decisions on Specialization direction; integration of new academic units; and the hiring and appointment of the Specialization Director. The committee will meet every other month before specialization launch and annually after specialization launch. The committee will facilitate the review and evaluation of the specialization.

An annual report outlining the specialization budget, enrollment and other details of the specialization will be generated once a year for presentation to the Steering Committee. The Specialization Director will be responsible for the generation and presentation of this report.

#### **2.2.8.2 Specialization Committee**

A Specialization Committee will be convened with composition of the Head from the Department of Psychology, the Head from the Department of Cellular, Anatomical and Physiological Sciences, the Head from the Department of Zoology, and the Specialization Director. Designates will require the approval of the Committee. The Specialization Director will chair this Committee. The Committee will be responsible for decisions on course instructor assignments; oversight of financials; approval of major curriculum (Category 1) changes; ensuring integration of courses from the Departments of Cellular, Anatomical and Physiological Sciences, Zoology, and Psychology; overseeing the peer review of teaching of Specialization faculty; hiring of new dedicated faculty members; and oversight of interventions for faculty with low SEOT scores. The committee will meet every other month.

For the purposes of making teaching assignments, the specialization committee will meet each year in February. Heads will assign teaching for faculty in their department. Teaching loads for individual instructors will vary based on the particular workload policies of each Faculty/Department for each rank of instructor. Individual course workloads will be negotiated and agreed upon jointly by the Heads of Departments and the Specialization Director. The need to hire Lecturers will be a unanimous decision of the Heads of Departments based on course/specialization requirements.

#### **2.2.8.2 Specialization Director**

The Specialization Director is responsible for the oversight of the specialization; day-to-day decisions;

supervision of Specialization staff; coordination of student-cohort events; oversight of student-led programs; investigating instances of alleged academic misconduct in specialization courses (NSCI courses) and reporting such cases to the Associate Dean Students in the Faculty of Science; curriculum changes; teaching-funds application coordination; coordination of undergraduate research activities; TA allocations and coordination; and new initiatives.

## 2.2.9 Contribution to UBC's Mandate and Strategic Plans

### 1) Interdisciplinary collaboration and education

**Strategy 14: Interdisciplinary Education:** *Facilitate the development of integrative, problem-focused learning*

As a collaboration between the faculties of Arts, Science, and Medicine, the specialization brings together people and resources across a number of disciplines. The comprehensive, interdisciplinary curriculum for the specialization draws on the wealth of expertise of faculty members from multiple departments, including chemistry, biology, psychology, math, physics, and cellular and physiological sciences. The specialization integrates theory and experiential learning across these departments to equip students with the knowledge, skills, and disciplinary attitudes and behaviours they need to succeed in this fast-growing field.

### 2) Experiential Learning

**Strategy 8: Student Research:** *Broaden access to, and enhance, student research experiences*

**Strategy 13: Practical Learning:** *Expand experiential, work-integrated and extended learning opportunities for students, faculty, staff and alumni*

With a curriculum that encourages student-directed research experiences, and builds up to capstone and co-op experiences, the specialization will establish and strengthen relationships between students, industry stakeholders, and faculty. These partnerships provide a greater breadth of opportunities for research, experiential learning, mentorship, and collaboration. Support from industry partners provides valuable experiential learning opportunities for students, as well as employment opportunities post-graduation.

Here at UBC, there are myriad labs and/or faculty with potential capacity for supervising undergraduate neuroscience directed-studies and capstone projects, in a wide range of areas from pure wet lab research, to working with clinical populations, to technology development, etc.

The UBC Strategic Plan further includes a core strategy (Strategy 6) of “enabl[ing] collaborative clusters of research excellence in pursuit of societal impact.” The specialization will expand opportunities for innovative, interdisciplinary research, research funding, and dissemination within the scholarly community as well as to the general public. Expanding UBC's scholarship in neuroscience will contribute to new knowledge and exciting developments in the field as well as transform the impact this knowledge and technology has on solving real-world issues. Graduates of the specialization will be perfectly positioned to apply their unique interdisciplinary training to tackle complex problems in health and medicine.

### 3) Student Experience and Diverse Community

**Strategy 1: Great People:** *Attract, engage and retain a diverse global community of outstanding students, faculty and staff*

**Strategy 3: Thriving Communities:** *Support the ongoing development of sustainable, healthy and connected campuses and communities*

**Strategy 15: Student Experience:** *Strengthen undergraduate and graduate student communities and experience*

With a globally renowned Graduate Program in Neuroscience and first-rate neuroscience faculty, UBC is already a Canadian and global leader in the field. The Neuroscience BSc will attract top students from across the province and around the world with a diverse range of interests and skills. With a strong cohort model, and dedicated staff and space, the specialization will establish supportive, collaborative communities of students working and learning together. The specialization provides opportunities for undergraduate-undergraduate, undergraduate-graduate student, and undergraduate-faculty mentorships, undergraduate Neuroscience conferences and journals, and similar initiatives, all of which current students and alumni have expressed strong support for.

## 2.2.10 Relationship to Established Programs

### 2.2.10.1 The University of British Columbia

Since 1974, there has been an undergraduate BSc. in Behavioural Neuroscience specialization (formerly titled 'Biopsychology') which has been very popular with students and which would be replaced by this new degree. The Behavioural Neuroscience specialization currently receives approximately 250 applicants for its 100 seats annually. Unlike the proposed Neuroscience specialization, the Behavioural Neuroscience specialization represents only one of many subfields of neuroscience, and thus the specialization does not capture the breadth of interests of those who want to study neuroscience.

The Graduate Program in Neuroscience at UBC has also been growing steadily, with an increase in the MSc and PhD programs in the past 25 years.

### 2.2.10.2 Other British Columbia and Canadian Universities

The proposed specialization in Neuroscience would be the only undergraduate degree in Neuroscience in British Columbia.

**Simon Fraser University** offers a BSc in Behavioural Neuroscience (Major and Honours). This program is offered in collaboration by the Department of Psychology and the Department of Biomedical Physiology and Kinesiology (BPK), leading to a Bachelor of Science in the Faculty of Arts and Social Sciences or the Faculty of Science. The program does not offer any neuroscience-program-specific courses, but rather consists of courses shared by students in Psychology and/or BPK.

**The University of Victoria** does not offer an undergraduate program in Neuroscience. The closest offering is a Psychology BA or BSc within one of four streams, including "Mind and Brain," which is a combination of cognitive psychology and neuropsychology.

**The University of Northern British Columbia** does not offer an undergraduate program in Neuroscience.

There are only 9 Canadian post-secondary institutions currently offering an undergraduate degree in Neuroscience.

University	Undergraduate Degrees	Degree Options	Academic Home

<b>University of Toronto (Scarborough), ON</b>	<a href="#">BSc Neuroscience</a>	Honours Major Specialist or Co-Op Specialist	Faculty of Arts & Science - Life Sciences - Department of Psychology
<b>University of Alberta</b>	<a href="#">BSc (Honours) Neuroscience</a>	Honours	Offered jointly by the Faculty of Science and the Neuroscience and Mental Health Institute
<b>McGill University, QC</b>	<a href="#">BSc Neuroscience</a>	Major Honours Minor	Faculty of Science - Neuroscience Group - The undergraduate Neuroscience programs are coordinated by three departments: Biology, Physiology and Psychology
<b>Dalhousie University, NS</b>	<a href="#">BA Neuroscience</a> <a href="#">BSc Neuroscience</a>	Major Double major Honours Combined Honours	Faculty of Science - Department of Psychology & Neuroscience
<b>McMaster University, ON</b>	<a href="#">B.Sc. (Honours) Neuroscience</a>	Honours	Program offered through Faculty of Science but jointly administered by Department of Biology (Faculty of Science) and Department of Psychology, Neuroscience & Behaviour (Faculty of Social Science).
<b>University of Calgary, AB</b>	<a href="#">B.Sc. Honours in Neuroscience</a>	Honours (Major is not open for enrollment but may be awarded if students do not meet Honours requirements)	Program listed under Faculty of Science but described as a collaboration between Faculties of Science, Arts, the Cumming School of Medicine and the Hotchkiss Brain Institute.
<b>Carleton University, ON</b>	<a href="#">B.Sc. Neuroscience, Combined Honours</a>	Combined Honours with Biology	Faculty of Science - joint offering from Department of Biology and Department of Neuroscience
<b>University of Lethbridge, AB</b>	<a href="#">B.Sc. in Neuroscience</a>	Major Honours	Faculty of Arts & Science - Neuroscience
<b>Western University, ON</b>	<a href="#">B.Sc Program in Neuroscience</a>	Honours program	Program listed under Faculty of Science but Honours BSc granted by Schulich School of Medicine & Dentistry.
<b>Brock University, ON</b>	<a href="#">B.Sc. Neuroscience</a>	Major Honours	Faculty of Mathematics and Science - Centre for Neuroscience

In addition to the UBC Graduate Program in Neuroscience, graduates of a BSc Neuroscience program would be well positioned for application to other Canadian graduate programs in neuroscience, including:

University	Department	Program
<b>Carleton University</b>	Department of Neuroscience	MSc and PhD in Neuroscience
<b>Concordia University</b>	Center for studies in behavioral neurobiology	MSc and PhD in Behavioural Neurobiology
<b>Dalhousie University</b>	Department of Psychology & Neuroscience	MSc and PhD in Psychology Neuroscience (Experimental Stream or Neuroscience Stream)
<b>McGill University</b>	Integrated Program in Neuroscience	MSc and PhD in Neuroscience
<b>McMaster University</b>	Faculties of Science, Health Sciences, Engineering, Humanities	MSc and PhD in Neuroscience
<b>Memorial University</b>	Division of BioMedical Sciences	MSc and PhD in Neuroscience
<b>Queen's University</b>	Center for Neuroscience Studies	MSc and PhD in Neuroscience
<b>Simon Fraser University</b>	Translational and Integrative Neuroscience (TRAIN) graduate specialization	Does not issue a specific degree neuroscience; rather, it is a specialization that students can elect to take as part of their graduate studies in the Departments of Biological Sciences, Biomedical Physiology & Kinesiology, Molecular Biology and Biochemistry, and Psychology.
<b>Université de Montréal</b>	Département de Neurosciences	MSc and PhD in Neuroscience
<b>Université Laval</b>	Programme de neurobiologie	MSc and PhD in Neuroscience
<b>Université Laval</b>	Centre de Recherche CERVO de Québec	PhD in Neuroscience
<b>University of Alberta</b>	Neuroscience and Mental Health Institute	MSc and PhD in Neuroscience
<b>University of British Columbia</b>	Graduate Program in Neuroscience	MSc and PhD in Neuroscience
<b>University of Calgary</b>	Department of Neuroscience	MSc and PhD in Neuroscience
<b>University of Guelph</b>	Collaborative Program in Neuroscience	Does not issue a degree - is an inter-departmental program for graduate students
<b>University of Lethbridge</b>	Department of Neuroscience	MSc and PhD in Neuroscience
<b>University of Ottawa</b>	Cellular and Molecular Medicine	MSc and PhD in Neuroscience
<b>University of Toronto</b>	Collaborative Program in Neuroscience (CPIN): Number of departments across faculties of art and science, dentistry, medicine, music, pharmacy, public health	Does not issue a degree - is an inter-departmental program for graduate students
<b>University of Victoria</b>	Division of medical sciences, departments of Biochemistry, Microbiology, Biology, School of Exercise Science, Physical and Health Education	MSc and PhD in Neuroscience
<b>University of Waterloo</b>	Psychology; Centre for Theoretical	MSc and PhD in Cognitive

	Neuroscience	Neuroscience; Theoretical Neuroscience Diploma
<b>University of Windsor</b>	Department of Integrative Biology and the Department of Biomedical Sciences	MSc and PhD in Biological Sciences - Neuroscience and Behaviour
<b>Western University</b>	Schulich School of Medicine and Dentistry	MSc and PhD in Neuroscience
<b>Wilfrid Laurier University</b>	Psychology	MSc and PhD in Cognitive and Behavioural Neurosciences
<b>York University</b>	Psychology, Kinesiology and Health Sciences, Philosophy, Physics, Electrical engineering and Computer Science and Biology	Graduate Diploma

In addition to Canadian graduate programs in neuroscience, graduates of a BSc Specialization Neuroscience would be well positioned for application to any one of the many graduate programs in neuroscience that are available worldwide.

## 2.2.11 Target Students

### 2.2.11.1 Enrolment Predictions and Capacity

For the first two years (i.e., 2022W and 2023W), the neuroscience specialization will have capacity for 150 students per year. For the third year (i.e., 2024W) and thereafter, the specialization will have capacity for 200 students per year. Based on enrolment and application numbers for the Behavioural Neuroscience specialization alone, there is every reason to believe that seats in the specialization will be in high demand.

### 2.2.11.2 Tuition Rationale

Tuition for the BSc specialization in neuroscience will be the same as for most other UBC Faculty of Science specializations.

## 2.3 QUALIFIED FACULTY

Qualified faculty are numerous. A list of over 110 research-stream faculty can be found at this link: [neuroscience.centreforbrainhealth.ca/members-neuroscience](https://neuroscience.centreforbrainhealth.ca/members-neuroscience). Any of those faculty would be qualified to teach courses in the specialization and/or supervise students who are taking the capstone course or taking a directed studies course. In addition, there are many educational-leadership-stream faculty, lecturers, and sessional instructors in many UBC departments who would be qualified to teach courses in the specialization.

With respect to the departments that are co-teaching or teaching the core courses in the specialization, the following individuals from the departments of Cellular and Physiological Sciences, Psychology, and Zoology are particularly well suited to teach either part of or one of the new NSCI courses.

### 2.3.1 Cellular and Physiological Sciences

The following faculty members from the Department of Cellular and Physiological Sciences are particularly well suited to teach either part of or all of one or more of the new NSCI courses:

Eric Accili, Associate Professor

Doug Allan, Associate Professor  
 Shernaz Bamji, Professor  
 Mark Cembrowski, Assistant Professor  
 Kurt Haas, Professor  
 Claudia Krebs, Professor of Teaching  
 Barry Mason, Associate Professor of Teaching  
 Hakima Moukhles, Associate Professor  
 Timothy O'Connor, Professor  
 Victor Viau, Professor  
 Chris West, Associate Professor

### **2.3.2 Psychology**

The following faculty members from the Department of Psychology are particularly well suited to teach either part of or all of one or more of the new NSCI courses:

Steven Barnes, Associate Professor of Teaching  
 Kalina Christoff, Professor  
 Stan Floresco, Professor  
 Liisa Galea, Professor  
 Deborah Giaschi, Professor  
 Todd Handy, Professor  
 Jay Hosking, Lecturer  
 Catherine Rankin, Professor  
 Noah Silverberg, Assistant Professor  
 Jason Snyder, Associate Professor  
 Kiran Soma, Professor  
 Rebecca Todd, Associate Professor  
 Lawrence Ward, Professor  
 Catharine Winstanley, Professor

### **2.3.3 Zoology**

The following faculty members from the Department of Zoology are particularly well suited to teach either part of or all of one or more of the new NSCI courses:

Doug Altshuler, Professor  
 Vanessa Auld, Professor  
 Irene Ballaugh, Lecturer  
 Michael Gordon, Associate Professor  
 Robert Harris, Lecturer  
 Agnes Lacombe, Associate Professor of Teaching  
 Stella Lee, Lecturer  
 Duncan Leitch, Assistant Professor  
 Ben Matthews, Assistant Professor  
 Kota Mizumoto, Assistant Professor  
 Angie O'Neill, Associate Professor of Teaching  
 Matt Ramer, Associate Professor  
 Jane Roskams, Professor  
 Patricia Schulte, Professor  
 Wolfram Tetzlaff, Professor

## 3 Neuroscience Specialization Curriculum

### 3.1 OVERVIEW OF THE CURRICULUM

The proposed curriculum for the BSc in Neuroscience will be comprised of several core courses that all majors must take in their second and third years. In the second year of their degree, students who enter this specialization will receive training in statistics, research methods, and the fundamentals of neuroscience. After their second year, students are free to tailor their degree according to their interests, although they would be advised to concentrate their coursework in one of two areas: Cellular and Molecular Neuroscience (see List A, below), or Behavioural and Cognitive Neuroscience (see List B, below).

### 3.2 HIGHLIGHTS OF THE CURRICULUM

Some highlights of the proposed curriculum include:

- The removal of redundancies (e.g., introductory neuroanatomy, introductory neurophysiology) across the courses in the specialization.
- Integrated personal narrative development, curriculum and career advising, and peer mentoring.
- Opportunities for co-op learning.
- Opportunities to gain research experience in neuroscience labs through either or both of directed studies and their 4<sup>th</sup>-year capstone course.
- A focus on the development of 'soft skills' (e.g., critical/creative thinking skills, writing skills, reflection, mentoring).
- Significant number of electives in third and fourth year to allow students to customize their degree to align with their current goals.

### 3.3 DEGREE REQUIREMENTS

Courses that are required for admission into the specialization are **in GREEN**.

New courses are **in BLUE**.

#### Course requirement(s):

#### Credits:

#### First Year

Communication Requirement	6
BIOL 112 (Biology of the Cell)	3
BIOL 140 (Laboratory Investigations in Life Science)	2
CHEM 110 (Structure, Bonding, and Equilibrium in Chemistry), CHEM 111 (Structure, Bonding and Equilibrium in Chemistry-Lecture), CHEM 120 (Structure and Bonding in Chemistry-Lecture), or CHEM 121 (Structure and Bonding in Chemistry)	4
CHEM 123 (Thermodynamics, Kinetics and Organic Chemistry) or CHEM 130 (Thermodynamics, Kinetics and Organic Chemistry-Lecture)	4
DCSI 100 (Introduction to Data Science)	3
PHYS 117 (Dynamics and Waves) or PHYS 131 (Energy and Waves-Lecture)	3

Electives	5
<i>Total Credits</i>	30

**Second Year<sup>3</sup>**

NSCI 200 (Fundamentals of Cellular and Molecular Neuroscience) 3

NSCI 201 (Fundamentals of Behavioural and Cognitive Neuroscience)

3

PSYC 277 (Research Methods for the Neurosciences) 4

PSYC 278 (Statistics for the Neurosciences) 4

BIOL 200 (Fundamentals of Cell Biology) 3

BIOL 201 (Introduction to Biochemistry) or BIOC 202 (Introductory Medical Biochemistry) 3

BIOL 234 (Fundamentals of Genetics) 3

CHEM 233 (Organic Chemistry for the Biological Sciences)

3

CHEM 235 (Organic Chemistry Laboratory) 1

Electives 3

*Total Credits* 30

**Third Year<sup>4</sup>**

NSCI 300 (Neuroscience Lab) 3

NSCI 301 (Neuroscience, Ethics, and Society) 3

NSCI 302 (Mechanisms of Nervous System Dysfunction) 3

NSCI 311 (Advanced Neuroanatomy)<sup>5</sup> 3

*Cellular and Molecular Emphasis:*

BIOL 371 (Principles of Neurobiology I) and BIOL 372 (Principles of Neurobiology II);

or *Behavioural and Cognitive emphasis:*

PSYC 370 (Behavioural Neuroscience I) and 371 (Behavioural Neuroscience II) 6

Electives 12

*Total Credits* 30

**Fourth Year**

NSCI 400 (Neuroscience Capstone) 6

9 credits from List A (for Behav/Cog Emphasis) or from List B (for Cell/Mol Emphasis), and

12

3 credits from List B (for Cell/Mol Emphasis) or from List A (for Behav/Cog Emphasis)

Electives 12

*Total Credits* 30

*Credits for Degree* 120

**Course Lists:*****List A: Behavioural and Cognitive Neuroscience Emphasis***

PSYC 361 (Neuroscience of Motivation), 363 (Neuroscience of Simple Learning), PSYC 365 (Cognitive Neuroscience), PSYC 367 (Sensory Systems), PSYC 368 (Perceptual Systems), PSYC 409 (Cognitive Neuropsychology), PSYC 460 (Behavioural Neuroendocrinology), PSYC 461 (Neuroplasticity and Behaviour), PSYC 462 (Drugs and Behavioural Neuroscience), PSYC 472 (Advanced Neuroscience of Motivation)

<sup>3</sup> NSCI 200, NSCI 201, PSYC 277, and PSYC 278 must be completed for advancement to third year.

<sup>4</sup> NSCI 300 and NSCI 311 must be completed for advancement to fourth year.

<sup>5</sup> This course will be cross-listed as CAPS 311 and NSCI 311.

***List B: Cellular and Molecular Neuroscience Emphasis***

BIOL 453 (Insect Physiology), BIOL 455 (Comparative Neurobiology), BIOL 458 (Developmental Neurobiology), BIOL 459 (Neurobiology of Sensory and Motor Systems), BIOL 460 (Visual System), CAPS 421 (Advanced Cellular and Molecular Physiology), CAPS 426 (Physiological Basis of Central Nervous System Functions)

**NSCI Directed Studies Course:**

[NSCI 448 \(Neuroscience Directed Studies\)](#)

**NSCI Co-op Courses:**

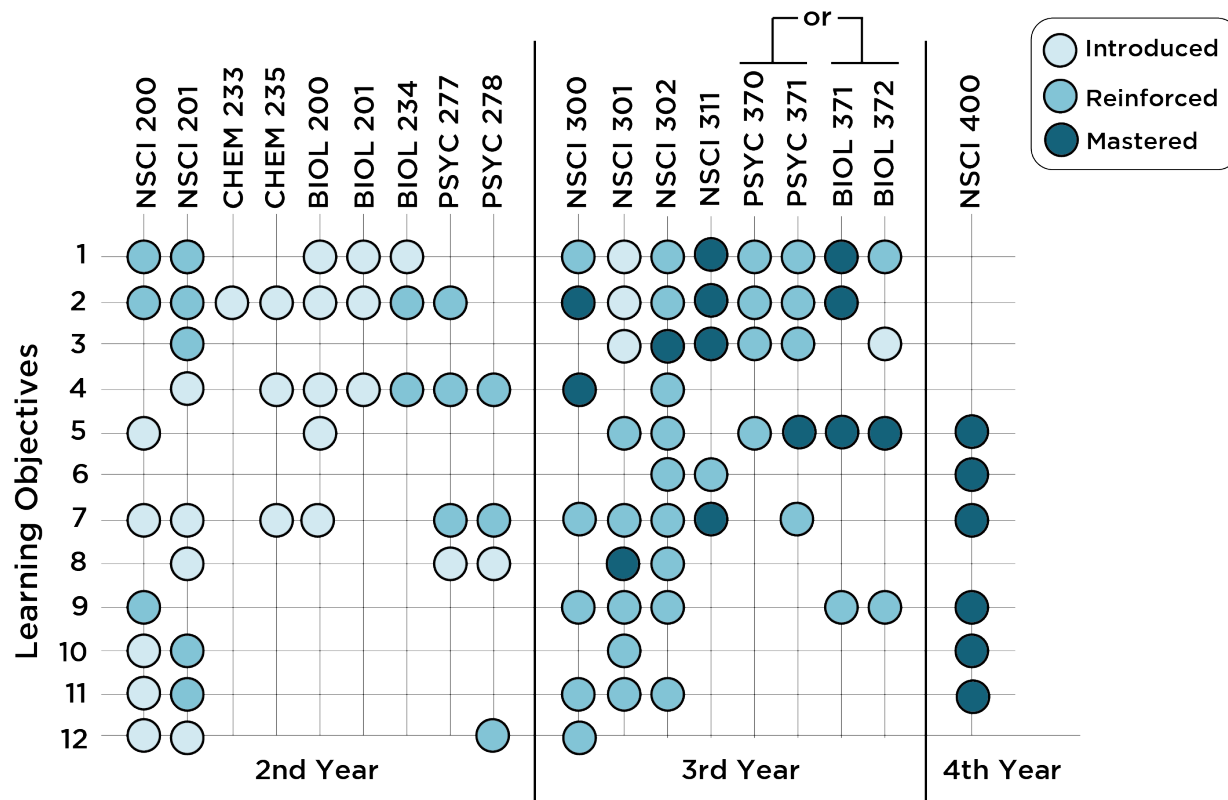
[NSCI 398 \(Co-operative Work Placement I\)](#)

[NSCI 399 \(Co-operative Work Placement II\)](#)

[NSCI 498 \(Co-operative Work Placement III\)](#)

[NSCI 499 \(Co-operative Work Placement IV\)](#)

### 3.4 CURRICULUM MAPPING TO LEARNING OBJECTIVES



#### Learning Objectives

- 1 Describe and apply historical and foundational concepts and theories in neuroscience (including basic cellular, systems, behavioral and cognitive underpinnings) in a variety of contexts.
- 2 Demonstrate a conceptual understanding and procedural knowledge of neuroscience and neuroscience research design and techniques.
- 3 Describe the behavioural features and explain the neurobiological mechanisms of a range of neurological and psychiatric conditions.
- 4 Design a well-thought-out neuroscience experiment with human participants and/or animal subjects appropriate for conducting at an undergraduate level, including design, ethical approval, data collection, and statistical analyses.
- 5 Summarize a primary neuroscience-related academic article, analyze its strengths, identify its limitations, and propose appropriate avenues for further inquiry.
- 6 Review and integrate a body of neuroscience literature into a concise synopsis.
- 7 Produce well-crafted instructions, reports, essays, presentations, discussions, and debates aimed at both neuroscientific and non-neuroscientific audiences.
- 8 Explain the ethical and societal implications of neuroscience research and theory.
- 9 Produce a well-substantiated critique based on ethical, design, methodological and interpretive considerations for: (1) a piece of neuroscience research (e.g., a research article); (2) a neuroscientific technique; and (3) a field of study in neuroscience.
- 10 Develop, reflectively analyze, and edit a personalized curriculum and career plan.
- 11 Provide, receive, and integrate peer/mentor feedback on academic work.
- 12 Program effectively for the purposes of data collection, processing, analysis, and presentation.

**Category: (1)**

<b>Faculty:</b> Science <b>Department:</b> Cellular and Physiological Sciences, Psychology, Zoology <b>Faculty Approval Date:</b> March 4, 2021	<b>Date:</b> March 4, 2021 <b>Contact Person:</b> Norm Hutchinson <b>Phone:</b> 604-822-8188 <b>Email:</b> norm@cs.ubc.ca
<b>Effective Date for Change:</b> 21S  <b>Proposed Calendar Entry:</b>  Courses by Subject Code  ANB: Applied Animal Biology  ...  NEUR: Neurosurgery  NRSC: Neuroscience <b>Graduate</b>  <b>NSCI: Neuroscience Undergraduate</b>  OBMS: Oral Biological Medical Sciences ....	<a href="http://www.calendar.ubc.ca/vancouver/courses.cfm?page=code">http://www.calendar.ubc.ca/vancouver/courses.cfm?page=code</a> <b>Present Calendar Entry:</b>  Courses by Subject Code  ANB: Applied Animal Biology  ...  NEUR: Neurosurgery  NRSC: Neuroscience  OBMS: Oral Biological Medical Sciences ....  <b>Action:</b> Create new course code, and change name associated with the NRSC course code to 'Neuroscience Graduate.'  <b>Rationale:</b> The Faculty of Science proposes a new course code to identify required courses within the new undergraduate Bachelor of Science specialization in Neuroscience. Neuroscience is a new Faculty of Science undergraduate specialization. It is a joint initiative of the Faculties of Arts, Science, and Medicine.  <b>Supporting Documents:</b> SCI-20-2-NSCI

**Category: (1)**

<b>Faculty:</b> Science <b>Department:</b> Cellular and Physiological Sciences, Psychology, Zoology <b>Faculty Approval Date:</b> March 4, 2021	<b>Date:</b> March 4, 2021 <b>Contact Person:</b> Norm Hutchinson <b>Phone:</b> 604-822-8188 <b>Email:</b> norm@cs.ubc.ca
<b>Effective Date for Change:</b> 21S <b>Proposed Calendar Entry:</b>	<b>Present Calendar Entry:</b>
<b>NSCI 200 (3) Fundamentals of Cellular and Molecular Neuroscience</b>	
<b>Introduction to the field of neuroscience in general, and the fields of cellular and molecular neuroscience in particular, with emphasis on neuroanatomy, neurophysiology, and neuropsychopharmacology. [2-2-0]</b>	
<b>Prerequisite: Second-year standing in the Neuroscience specialization.</b>	
	<b>Action:</b> Create new course.
	<b>Rationale:</b> This new 3-credit second-year course is a core course in the new Neuroscience specialization, and will provide students entering the specialization with their first exposure to the fields of cellular and molecular neuroscience.
	<b>Not available for Cr/D/F grading.</b>
	<b>Rationale for not being available for Cr/D/F):</b> This is a core course of the new neuroscience specialization.
	<b>Supporting Documents:</b> SCI-20-2-NSCI 200

**Category: (1)**

<p><b>Category:</b> (1)  <b>Faculty:</b> Science  <b>Department:</b> Cellular and Physiological Sciences, Psychology, Zoology  <b>Faculty Approval Date:</b> March 4, 2021</p>	<p><b>Date:</b> March 4, 2021  <b>Contact Person:</b> Norm Hutchinson  <b>Phone:</b> 604-822-8188  <b>Email:</b> norm@cs.ubc.ca</p>
<p><b>Effective Date for Change:</b> 21S  <b>Proposed Calendar Entry:</b></p> <p><b>NSCI 201 (3) Fundamentals of Behavioural and Cognitive Neuroscience</b></p> <p><b>Emphasis on the relationship between behaviour or cognition and nervous system function. [2-2-0]</b></p> <p><b>Prerequisite:</b> NSCI 200.</p>	<p>Present Calendar Entry:</p> <p><b>Action:</b> Create new course.</p> <p><b>Rationale:</b> This new 3-credit second-year course is a core course in the new Neuroscience specialization, and will provide students entering the specialization with their first exposure to the fields of behavioural and cognitive neuroscience.</p> <p>This core course is based in part of an existing course (PSYC 270) that is currently part of the Behavioural Neuroscience specialization. The Behavioural Neuroscience specialization will close once the Neuroscience specialization begins. Accordingly, PSYC 270 will no longer be offered once this course commences. Note that the discontinuation of PSYC 270 will not affect students, since it is restricted to students in the Behavioural Neuroscience specialization.</p> <p>■ <b>Not available for Cr/D/F grading.</b></p> <p><b>Rationale for not being available for Cr/D/F):</b> This is a core course of the new neuroscience specialization.</p> <p><b>Supporting Documents:</b> SCI-20-2-NSCI 201</p>

**Category: (1)**

<p><b>Faculty:</b> Science  <b>Department:</b> Cellular and Physiological Sciences, Psychology, Zoology  <b>Faculty Approval Date:</b> March 4, 2021</p>	<p><b>Date:</b> March 4, 2021  <b>Contact Person:</b> Norm Hutchinson  <b>Phone:</b> 604-822-8188  <b>Email:</b> norm@cs.ubc.ca</p>
<p><b>Effective Date for Change:</b> 21S  <b>Proposed Calendar Entry:</b></p> <p><b>NSCI 300 (3) Laboratory Techniques for the Neurosciences</b></p> <p>Laboratory techniques for investigating nervous system function, and for establishing relationships between nervous system function, behaviour, and cognition. [1-3-0]</p> <p><b>Prerequisite:</b> Third-year status in the neuroscience specialization.</p>	<p><b>Present Calendar Entry:</b></p> <p><b>Action:</b> Create new course.</p> <p><b>Rationale:</b> This new 3-credit third-year course is a core course in the new Neuroscience specialization and will provide students in the specialization with hands-on learning experience with a variety of techniques for studying nervous system function, and relationships between nervous system function, behaviour, and cognition.</p> <p>■ Not available for Cr/D/F grading.</p> <p><b>Rationale for not being available for Cr/D/F):</b></p> <p>This will be a core course for the neuroscience specialization.</p> <p><b>Supporting Documents:</b> SCI-20-2-NSCI 300</p>

**Category: (1)**

<p><b>Category:</b> (1)</p> <p><b>Faculty:</b> Science</p> <p><b>Department:</b> Cellular, Anatomical &amp; Physiological Sciences, Zoology, Psychology</p> <p><b>Faculty Approval Date:</b> March 4, 2021</p>	<p><b>Date:</b> March 4, 2021</p> <p><b>Contact Person:</b> Norm Hutchinson</p> <p><b>Phone:</b> 604-822-8188</p> <p><b>Email:</b> norm@cs.ubc.ca</p>
<p><b>Effective Date for Change:</b> 21S</p> <p><b>Proposed Calendar Entry:</b></p> <p><b>NSCI 301 (3) Neuroscience, Ethics, and Society</b></p> <p><b>Ethical issues associated with neuroscience, and the impact of neuroscience on society. [3-0-0]</b></p> <p><b>Prerequisites:</b> NSCI 201, PSYC 277</p>	<p><b>Present Calendar Entry:</b></p> <p><b>Action:</b> Create new course.</p> <p><b>Rationale:</b> This new 3-credit third-year core course is part of the new Neuroscience specialization and will provide students in the specialization with a thorough understanding of the ethical issues surrounding the use of technologies that emerge from neuroscience research.</p> <p><b>■ Not available for Cr/D/F grading.</b></p> <p><b>Rationale for not being available for Cr/D/F):</b> This is a core course of the new neuroscience specialization.</p> <p><b>Supporting Documents:</b> SCI-20-2-NSCI 301</p>

**Category: (1)**

<p><b>Faculty:</b> Science  <b>Department:</b> Cellular, Anatomical &amp; Physiological Sciences, Zoology, Psychology  <b>Faculty Approval Date:</b> March 4, 2021</p>	<p><b>Date:</b> March 4, 2021  <b>Contact Person:</b> Norm Hutchinson  <b>Phone:</b> 604-822-8188  <b>Email:</b> norm@cs.ubc.ca</p>
<p><b>Effective Date for Change:</b> 21S  <b>Proposed Calendar Entry:</b></p> <p><b>NSCI 302 (3) Mechanisms of Nervous System Dysfunction and Recovery</b></p> <p><b>Physiological mechanisms of neurological and psychiatric disorders and recovery from those disorders. [2-2-0]</b></p> <p><b>Prerequisite:</b> NSCI 201</p>	<p><b>Present Calendar Entry:</b></p> <p><b>Action:</b> Create new course.</p> <p><b>Rationale:</b> This new 3-credit third-year core course is part of the new Neuroscience specialization and will provide students in the specialization with a thorough understanding of neurological and psychiatric disorders, and the theories of their neurobiological mechanisms.</p> <p><b>■ Not available for Cr/D/F grading.</b></p> <p><b>Rationale for not being available for Cr/D/F):</b> This is a core course of the new neuroscience specialization.</p> <p><b>Supporting Documents:</b> SCI-20-2-NSCI 302</p>

**Category: (1)**

<b>Faculty:</b> Science <b>Department:</b> Cellular, Anatomical & Physiological Sciences, Zoology, Psychology <b>Faculty Approval Date:</b> March 4, 2021	<b>Date:</b> March 4, 2021 <b>Contact Person:</b> Norm Hutchinson <b>Phone:</b> 604-822-8188 <b>Email:</b> norm@cs.ubc.ca
<b>Effective Date for Change:</b> 21S <b>Proposed Calendar Entry:</b>  <b>NSCI 311 (3) Advanced Neuroanatomy</b>  <b>Detailed coverage of neuroanatomy, with applications. [3-0-0]</b>  <b>Prerequisite(s): NSCI 200</b>	<b>Present Calendar Entry:</b>          <b>Action:</b> Create new course.  <b>Rationale:</b> This new 3-credit course is a core course for the new B.Sc. specialization in Neuroscience. It will also be a new elective course for CAPS (cross listed as CAPS 311) when the new CAPS curriculum comes online.  <b>Supporting Documents:</b> SCI-20-2-NSCI 311

**Category: (1)**

<p><b>Faculty:</b> Science  <b>Department:</b> Cellular, Anatomical &amp; Physiological Sciences, Zoology, Psychology  <b>Faculty Approval Date:</b> March 4, 2021</p>	<p><b>Date:</b> March 4, 2021  <b>Contact Person:</b> Norm Hutchinson  <b>Phone:</b> 604-822-8188  <b>Email:</b> norm@cs.ubc.ca</p>
<p><b>Effective Date for Change:</b> 21S</p> <p><b>Proposed Calendar Entry:</b></p> <p><b>NSCI 398 (3) Cooperative Work Placement I</b></p> <p><b>Approved and supervised relevant work experience in an industrial, academic, or government setting for a minimum of 13 weeks, full-time. Normally taken in Summer Session after third year. Work term report required. Restricted to students admitted to the Co-op Program in Neuroscience.</b></p> <p><b>Prerequisite: Co-op workshops, and third-year standing in the neuroscience specialization.</b></p>	<p><b>Present Calendar Entry:</b></p> <p><b>Action:</b> Create new course.</p> <p><b>Rationale:</b> This new course, along with three other proposed new courses (i.e., NSCI 399, 498, 499) will comprise the co-op course options for students in the B.Sc. Neuroscience specialization.</p> <p><b>■ Not available for Cr/D/F grading.</b></p> <p><b>Rationale for not being available for Cr/D/F):</b> Co-op courses are not eligible for Cr/D/F.</p> <p><b>Supporting Documents:</b> SCI-20-2-NSCI 398</p>

**Category: (1)**

<p><b>Category:</b> (1)  <b>Faculty:</b> Science  <b>Department:</b> Cellular, Anatomical &amp; Physiological Sciences, Zoology, Psychology  <b>Faculty Approval Date:</b> March 4, 2021</p>	<p><b>Date:</b> March 4, 2021  <b>Contact Person:</b> Norm Hutchinson  <b>Phone:</b> 604-822-8188  <b>Email:</b> norm@cs.ubc.ca</p>
<p><b>Effective Date for Change:</b> 21S  <b>Proposed Calendar Entry:</b></p> <p><b>NSCI 399 (3) Cooperative Work Placement II</b></p> <p>Approved and supervised relevant work experience in an industrial, academic, or government setting for a minimum of 13 weeks, full-time. Normally taken in Term 1 of the 4th Year Winter Session. Work term report required. Restricted to students admitted to the Co-op Program in Neuroscience.</p> <p><b>Prerequisite:</b> NSCI 398</p>	<p><b>Present Calendar Entry:</b></p> <p><b>Action:</b> Create new course.</p> <p><b>Rationale:</b> This new course, along with three other proposed new courses (i.e., NSCI 398, 498, 499) will comprise the co-op course options for students in the B.Sc. Neuroscience specialization.</p> <p>■ <b>Not available for Cr/D/F grading.</b></p> <p><b>Rationale for not being available for Cr/D/F):</b> Co-op courses are not eligible for Cr/D/F.</p> <p><b>Supporting Documents:</b> SCI-20-2-NSCI 399</p>

**Category: (1)**

<p><b>Category:</b> (2)</p> <p><b>Faculty:</b> Science</p> <p><b>Department:</b> Cellular, Anatomical &amp; Physiological Sciences, Zoology, Psychology</p> <p><b>Faculty Approval Date:</b> March 4, 2021</p>	<p><b>Date:</b> March 4, 2021</p> <p><b>Contact Person:</b> Norm Hutchinson</p> <p><b>Phone:</b> 604-822-8188</p> <p><b>Email:</b> norm@cs.ubc.ca</p>
<p><b>Effective Date for Change:</b> 21S</p> <p><b>Proposed Calendar Entry:</b></p> <p><b>NSCI 400 (6) Neuroscience Capstone</b></p> <p><b>A capstone course to provide students with a rigorous neuroscience research experience under the supervision of one or more faculty members. Integrated support and feedback is provided by peers and faculty.</b> [3-0-0;3-0-0]</p> <p><b>Prerequisite: Restricted to students in the neuroscience specialization.</b></p>	<p><b>Present Calendar Entry:</b></p> <p><b>Action:</b> Create new course.</p> <p><b>Rationale:</b> This new 6-credit fourth-year course is a core course in the new Neuroscience specialization, and will have students engage in a capstone research experience.</p> <p><b>■ Not available for Cr/D/F grading.</b></p> <p><b>Rationale for not being available for Cr/D/F):</b> This is a core course of the new neuroscience specialization.</p> <p><b>Supporting Documents:</b> SCI-20-2- NSCI 400</p>

**Category: (1)**

<p><b>Faculty:</b> Science</p> <p><b>Department:</b> Cellular, Anatomical &amp; Physiological Sciences, Zoology, Psychology</p> <p><b>Faculty Approval Date:</b> March 4, 2021</p>	<p><b>Date:</b> March 4, 2021</p> <p><b>Contact Person:</b> Norm Hutchinson</p> <p><b>Phone:</b> 604-822-8188</p> <p><b>Email:</b> norm@cs.ubc.ca</p>
<p><b>Effective Date for Change:</b> 21S</p> <p><b>Proposed Calendar Entry:</b></p> <p><b>NSCI 448 (3/6) d Directed Studies in Neuroscience</b></p> <p><b>Directed investigation of a neuroscience research question requiring a report of the findings.</b></p> <p><b>Prerequisite:</b> At least a 70% average in the preceding 30 credits, permission of the supervisor, and permission of the director of the neuroscience specialization.</p>	<p><b>Present Calendar Entry:</b></p> <p><b>Action:</b> Create new course.</p> <p><b>Rationale:</b> This new course is a directed studies course for students in the B.Sc. Neuroscience specialization.</p> <p><b>Supporting Documents:</b> SCI-20-2-NSCI 448</p>

**Category: (1)**

<p><b>Category:</b> (1)  <b>Faculty:</b> Science  <b>Department:</b> Cellular, Anatomical &amp; Physiological Sciences, Zoology, Psychology  <b>Faculty Approval Date:</b> March 4, 2021</p>	<p><b>Date:</b> March 4, 2021  <b>Contact Person:</b> Norm Hutchinson  <b>Phone:</b> 604-822-8188  <b>Email:</b> norm@cs.ubc.ca</p>
<p><b>Effective Date for Change:</b> 21S  <b>Proposed Calendar Entry:</b></p> <p><b>NSCI 498 (3) Cooperative Work Placement III</b></p> <p><b>Approved and supervised relevant work experience in an industrial, academic, or government setting for a minimum of 13 weeks, full-time. Normally taken in Term 2 of the 4th Year Winter Session. Work term report required. Restricted to students admitted to the Co-op Program in Neuroscience.</b></p> <p><b>Prerequisite:</b> NSCI 399</p>	<p><b>Present Calendar Entry:</b></p> <p><b>Action:</b> Create new course.</p> <p><b>Rationale:</b> This new course, along with three other proposed new courses (i.e., NSCI 398, 399, 499) will comprise the co-op course options for students in the B.Sc. Neuroscience specialization.</p> <p><b>■ Not available for Cr/D/F grading.</b></p> <p><b>Rationale for not being available for Cr/D/F):</b> Co-op courses are not eligible for Cr/D/F.</p> <p><b>Supporting Documents:</b> SCI-20-2-NSCI 498</p>

**Category: (1)**

<p><b>Faculty:</b> Science  <b>Department:</b> Cellular, Anatomical &amp; Physiological Sciences, Zoology, Psychology  <b>Faculty Approval Date:</b> March 4, 2021</p>	<p><b>Date:</b> March 4, 2021  <b>Contact Person:</b> Norm Hutchinson  <b>Phone:</b> 604-822-8188  <b>Email:</b> norm@cs.ubc.ca</p>
<p><b>Effective Date for Change:</b> 21S  <b>Proposed Calendar Entry:</b></p> <p><b>NSCI 499 (3) Cooperative Work Placement IV</b></p> <p><b>Approved and supervised relevant work experience in an industrial, academic, or government setting for a minimum of 13 weeks, full-time. Normally taken in the Summer Session after 4th year. Work term report required. Restricted to students admitted to the Co-op Program in Neuroscience.</b></p> <p><b>Prerequisite:</b> NSCI 498.</p>	<p><b>Present Calendar Entry:</b></p> <p><b>Action:</b> Create new course.</p> <p><b>Rationale:</b> This new course, along with three other proposed new courses (i.e., NSCI 398, 399, 498) will comprise the co-op course options for students in the B.Sc. Neuroscience specialization.</p> <p><b>■ Not available for Cr/D/F grading.</b></p> <p><b>Rationale for not being available for Cr/D/F):</b> Co-op courses are not eligible for Cr/D/F.</p> <p><b>Supporting Documents:</b> SCI-20-2-NSCI 499</p>



## UBC Curriculum Proposal Form Change to Course or Program

### Category: (1)

<b>Faculty:</b> Science <b>Department:</b> Computer Science/Statistics <b>Faculty Approval Date:</b> March 4, 2021	<b>Date:</b> March 4, 2021 <b>Contact Person:</b> Norm Hutchinson <b>Phone:</b> 604-822-8188 <b>Email:</b> norm@cs.ubc.ca
<b>Effective Date for Change:</b> 21S  <b>Proposed Calendar Entry:</b>  <b>Data Science</b>  <p>The Data Science Minor is an interdisciplinary specialization that enables students to gain the skills necessary to perform data science tasks in conjunction with the skills that they learn in their major. In this Minor, students gain an understanding of key data science concepts such as how to program using data, use statistics on data, and how to use machine learning and statistical models. The Minor in Data Science is an interdisciplinary and interdepartmental undergraduate specialization administered through the Faculty of Science.</p> <p>Admission to the Minor in Data Science: Students must apply to enter the Minor in Data Science through a process administered jointly by the Departments of Computer Science and Statistics. Applications are accepted once per year, in spring. Applicants must already have a primary specialization, and applications will not be accepted once the student has gained 4th year standing. See Faculty of Science Minor Options [link to <a href="http://www.calendar.ubc.ca/Vancouver/index.cfm?tree=12,215,410,410">http://www.calendar.ubc.ca/Vancouver/index.cfm?tree=12,215,410,410</a>]. The application can be accessed at the Data Science Minor website [link to <a href="https://datascience.ubc.ca/">https://datascience.ubc.ca/</a>].</p>	<a href="http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,0">http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,0</a>  <b>Present Calendar Entry:</b>



## Minor in Data Science

This minor consists of 33 credits, of which 18 must be at the 300-level or above.

### Lower-Level Requirements

- **Data Science: 3 credits of DSCI 100.**
- **Statistical Inference: 3 credits of STAT 201.**
- **Pre-requisites for required upper-level courses**
  - **Programming: 6 credits given by the prerequisites for CPSC 330** [link to <https://courses.students.ubc.ca/cs/courseschedule?pname=subjarea&tname=subj-course&dept=CPSC&course=330>]. For most non-CS majors, we recommend CPSC 103 followed by CPSC 203.
  - **Math: 3 credits given by the prerequisites for STAT 301** [link to <https://courses.students.ubc.ca/cs/courseschedule?pname=subjarea&tname=subj-course&dept=STAT&course=301>].

### Upper-Level Requirements

18 credits from the following:

STAT 301, CPSC 330, and four of the following six options:

- **DSCI 310**
- **DSCI 320**

**Action:** Create a Minor degree specialization in Data Science.

Please create a new specialization page for Minor in Data Science. Please include the link on all appropriate Calendar pages (Undergraduate Academic specializations, Science, etc.)

**Rationale:** University graduates now and into the future will need skills to organize, interact with and extract meaning from data. Currently, UBC has a Master of Data



- CPSC 416
- One of CPSC 368, CPSC 304, COMM 437
- CPSC 430
- One in-discipline data science course selected from COMM 335, COMM 365, COMM 414, COMM 415, CPSC 322, CPSC 340, CPSC 406, ECON 323, ECON 398, ECON 425, EOSC 410, INFO 419, LING 342, MATH 441, MATH 442, MICB 405, MICB 425, PHYS 410, PSYC 359, STAT 406, STAT 447B, STAT 450.

Science program but does not have an undergraduate Data Science program. There is a single undergraduate course under the DSCI course code, namely DSCI 100: Introduction to Data Science, which launched in 2018W. Furthermore, there are a handful of other courses across the university with significant data science content, but we are lacking a core undergraduate Data Science curriculum.

**Supporting Documents: SCI-20-2-Minor in Data Science**

# Proposal: Minor in Data Science at UBC

Executive Summary

Minor in Data Science

Faculty of Science, The University of British Columbia

<b>Overview</b>	<b>2</b>
<b>Proposed Credential to be Awarded</b>	<b>3</b>
<b>Location where the new specialization will be offered</b>	<b>3</b>
<b>Faculty offering the proposed new specialization</b>	<b>3</b>
<b>Anticipated specialization start date</b>	<b>3</b>
<b>Summary of the proposed specialization</b>	<b>3</b>
Specialization learning outcomes	3
Governance	4
Course requirements	4
<b>Course development plan</b>	<b>5</b>
<b>Appendices</b>	<b>6</b>
Proposals for Calendar Entries	6
Planned courses	8
STAT 301 – Statistical modelling for Data Science	8
DSCI 320 – Visualization for Data Science	9
CPSC 368 – Databases in Data Science	9
DSCI 310 – Reproducible and trustworthy workflows for data science	10
DSCI 400 – Ethics for Data Science	10
CPSC 4xx – Cloud computing and Data Science applications for Big Data	10
Example route through the minor	11

## Overview

We propose the creation of a Minor in Data Science at UBC.

University graduates now and into the future will need skills to organize, interact with and extract meaning from data. Currently, UBC has a Master of Data Science program but does not have an undergraduate Data Science specialization. There is a single undergraduate course under the DSCI course code, namely DSCI 100: Introduction to Data Science, which launched in 2018W. Furthermore, there are a handful of other courses across the university with significant data science content, but we are lacking a core undergraduate Data Science curriculum.

The proposed minor will be created by and administered within the Faculty of Science but aims to reach students across the University. The requirements are set up to maximize the accessibility of the minor to a broad range of students.

## Proposed Credential to be Awarded

The proposed credential is a Minor in Data Science that will be available to all undergraduate degree programs that allow their students to complete Minor specializations within the Faculty of Science. It is anticipated that initially most students will be within the Bachelor of Science, though the goal is for students in the minor to come from a broad range of Faculties and specializations. .

## Location where the new specialization will be offered

The Point Grey Campus of UBC in Vancouver.

## Faculty and departments offering the proposed new specialization

The departments of Computer Science and Statistics in the Faculty of Science. These departments currently jointly offer the Master of Data Science.

## Anticipated specialization start date

September 2021

## Anticipated contribution to UBC's mandate and strategic plan

The Data Science Minor will contribute to Strategies 11, 13, and 14. For Strategy 11, Education Renewal, the new courses designed specifically for the Minor will use evidence-informed pedagogies, and innovate to contribute to knowledge about how best to provide learning experiences in data science to a broad range of students. For Strategy 13, Practical Learning, the Minor is designed to help students develop practical skills in data science that they could apply in any field they enter post-university. One of the strengths of the Minor is the ability to pair it with any specialization, to strengthen a student's applicable skills. For Strategy 14, Interdisciplinary Education, this Minor is designed to be accessible to students from across UBC, leading to students from different disciplines working together. One category of elective in the Minor that students may choose is a data-intensive course in the discipline of their primary

specialization. With this option, students will be able to integrate their data science skills to enrich their capabilities in their primary discipline.

## Summary of the proposed specialization

specialization learning outcomes:

1. Identify and collect data necessary to answer a given research question through sampling and/or through extracting data from pre-existing sources (relational databases, html web pages, web APIs, etc)
2. Manipulate messy, ill-formed data to extract meaningful insights.
3. Map and apply an appropriate data analysis approach to a given research question and the data at hand.
4. Select data science methods to work with diverse data types across diverse subject-area domains.
5. Build statistical models that are appropriate given the distribution(s) of the data, and appropriately quantify uncertainty of resulting estimates and predictions.
6. Apply fundamental programming principles in the data analysis process to make analysis code readable, modular, accurate and scalable.
7. Communicate results of data science experiments to diverse audiences through data visualizations, written work and oral presentations.
8. Employ best practices for collaboration for projects that involve both code and people.
9. Perform and communicate results from analyses that are fair, equitable and honest.
10. Employ workflows that facilitate reproducible and transparent data analyses.

## Governance

The Departments of Computer Science and Statistics will offer, administer, and deliver the specialization via a governing committee appointed by the Heads of these two departments. The initial governance committee for the data science minor will consist of Gabriela Cohen Freue (Associate Professor, Statistics), Mike Gelbart (Assistant Professor of Teaching, Computer Science), Ian Mitchell (Professor, Computer Science) and Tiffany Timbers (Assistant Professor of Teaching, Statistics).

## Consultations

Between April 2018 and September 2019, the Faculty of Science led a series of discussions and surveys involving faculty, staff, and students. Participants were largely from Science, but also included Applied Science, Arts, Medicine and others (via surveys). The group identified nine data science themes (listed below) that represented an ideal set of skills a data literate student would have upon graduation. The themes include specific data skills, but also communication, ethics and scientific reasoning. We surveyed faculty across campus (n=64, including respondents from 6 different Faculties) and each of these nine themes was rated by the majority of faculty respondents as “important” or “very important” for a data-literate graduate in their discipline.

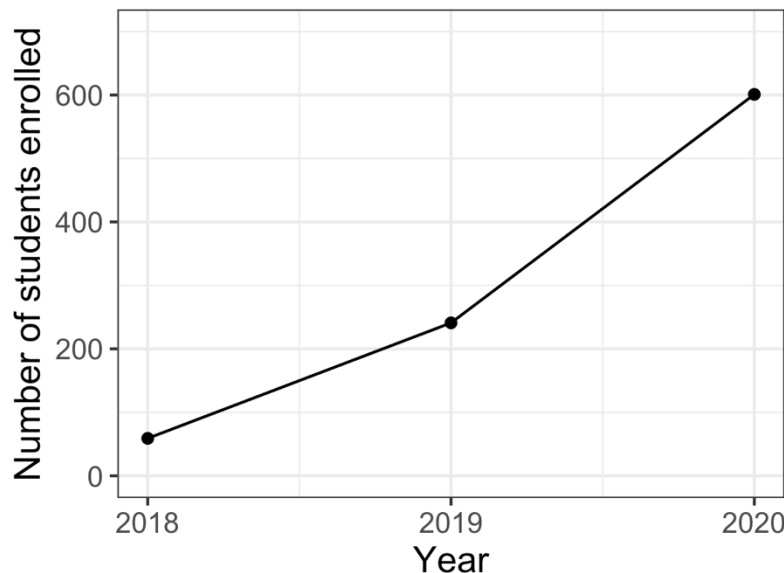
Nine data science themes that represented the ideal set of skills a data literate student would have upon graduation:

1. Communication of data and interpretations
2. Ethical data use
3. Using software (e.g. SPSS, Excel, open-source software...)
4. Mathematical foundations and reasoning (e.g. linear algebra, calculus, probability...)
5. Computational foundations and reasoning (e.g. algorithms, programming...)
6. Statistical foundations and reasoning
7. Scientific reasoning & process, in context
8. Data management
9. Data visualization

The minor proposed here was developed as a result of this process. A key feature is that the minor consists of new courses designed specifically for this minor to enable success by a wide range of students, both within Science and other Faculties across campus. The proposed minor also integrates existing data-driven courses into the framework of the minor to enable students from diverse fields of inquiry to participate in the minor.

## Student Demand

DSCI 100 has grown in enrollment from ~ 60 students in the first year it was offered to ~ 600 in 2020. We anticipate offering an additional section in 2022 and having it grow to at least 800 students a year by then.

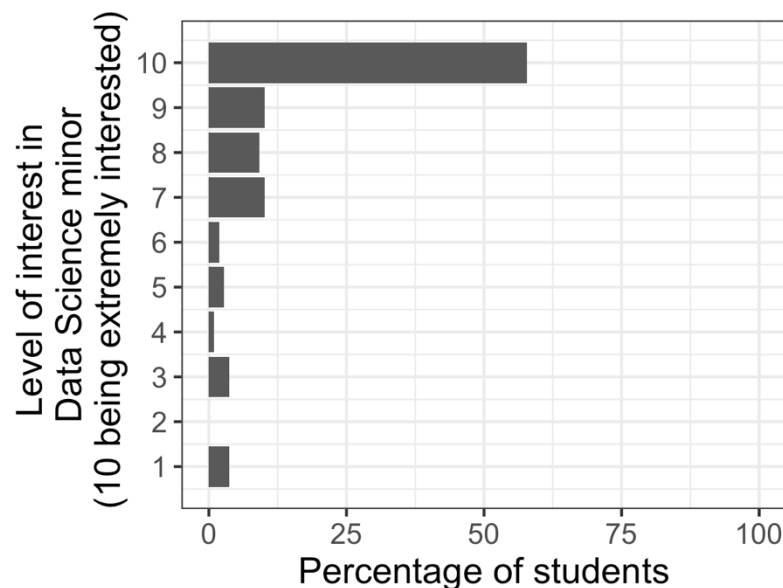


**Figure 1.** Course enrollment for DSCI 100 since its first offering.

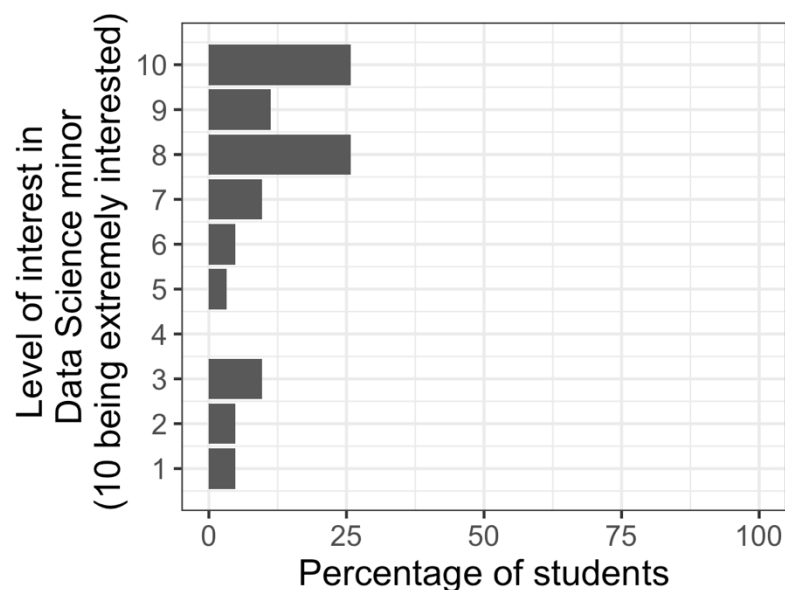
In 2019W T2, students enrolled in DSCI 100 and CPSC 330 were asked the following on an anonymous survey: “UBC is planning to create a minor in Data Science. Please rate your

interest in adding this to your degree plan on a scale of 1-10, with 10 being extremely interested and 1 being not at all interested.” 109 students from DSCI 100, and 62 students from CPSC 330 answered the survey. The majority of students who responded from both courses answered that they would be very interested in adding this to their degree plan if it were available to them (Figure 2 & 3).

We can use this information to project the student demand when we launch the minor. Given that 77% of DSCI 100 students, and 62% of CPSC 330 students, expressed a high interest in taking the minor if it were available (students that rated this as 8/10 or higher), and that we plan to offer DSCI 100 to ~ 800 students in 2022, we would very roughly estimate that just over 500 students may be interested in taking this minor. For the first year the minor is offered, we anticipate making 60 seats available, then ramping up to 100 students per year, after which we will reassess.



**Figure 2.** Survey results from 2019W T2 DSCI 100 students to assess interest in the DSCI minor.



**Figure 3.** Survey results from 2019W T2 CPSC 330 students to assess interest in the DSCI minor.

The group also conducted a small survey (16 respondents) of students graduating from the BSc in May 2019. Looking back at their university experience, they also highly rated the nine themes that emerged from consultations. These studies revealed that there was substantial interest for more data science learning opportunities at many levels. A key outcome was the enthusiasm for creating a data science minor.

## Similar specializations at UBC or other institutions

UBC-Okanagan offers a Data Science Minor

[<http://www.calendar.ubc.ca/okanagan/index.cfm?tree=18,360,1102,1448>]. While the structure of the UBC-O minor is different from this proposal, they share the inclusion of data-intensive courses from other disciplines as an option for students to integrate their data science skills in context.

Large public universities in the United States that offer a data science minor include:

University of Washington: <https://www.washington.edu/uaa/advising/single-pages/data-science-minor/>

University of California, Berkeley: <https://data.berkeley.edu/academics/data-science-undergraduate-studies/data-science-minor>

## Course requirements

The requirements for the minor are described below. We divide them into two sections, the lower-level requirements/prerequisites (100 and 200-level courses; 15 credits) and the upper-level requirements (300 and 400-level courses; 18 credits).

The lower-level requirements for the proposed minor are DSCI 100, 2<sup>nd</sup> year programming and 2<sup>nd</sup> year statistics, and 1<sup>st</sup> year differential calculus. Note that many students in Science will take a number of these courses anyway to complete specialization or BSc requirements. In addition to the prerequisites, the minor requires 18 upper-level credits. These credits include two required courses (6 credits) and four elective courses (12 credits); for electives, there may be multiple UBC courses that fulfill the requirements.

### Lower-Level Requirements

In order to enrol in STAT 301 and CPSC 330, which are required upper-level courses for the minor, one would need the following prerequisite courses:

- **Data Science:** 3 credits of DSCI 100.
- **Statistical Inference:** 3 credits of STAT 201.
- **Programming:** 6 credits given by the prerequisites for CPSC 330; see [here](#) for the possible paths. For most non-CS majors, we recommend CPSC 103 followed by CPSC 203.
- **Math:** 3 credits given by the prerequisites for STAT 301; see attached proposal for the possible paths. In short, the requirement is differential calculus.

### Upper-Level Requirements

The following are 18 credits of upper-level requirements for the data science minor:

- **Statistical modeling:** 3 credits from STAT 301 (to launch in 2021W)
- **Machine learning:** 3 credits from CPSC 330 (existing course)
- **Data Science Electives:** Students complete four of the following six options. For options 1-5, the goal of the team developing the Data Science Minor is to grow the number of elective options over time. For option 6, we anticipate that more in-discipline data science courses will be added to the list as those types of courses emerge across campus:
  1. **Visualization for Data Science** (3 credits): DSCI 320 (to launch in 2021W)
  2. **Databases** (3 credits): One of (a) CPSC 368 (to launch in 2021W) or (b) CPSC 304 or (c) COMM 437
  3. **Reproducible Workflows** (3 credits): DSCI 310 (to launch in 2021W)
  4. **Ethics** (3 credits): CPSC 430 (existing course)
  5. **Cloud computing** (3 credits): CPSC 416 (existing course)
  6. **In-discipline data science courses** (max 3 credits): one of
    - COMM 335: Information Systems Technology and Development
    - COMM 365: Market Research
    - COMM 414: Data Visualization and Business Analytics
    - COMM 415: Quantitative Policy
    - CPSC 322: Introduction to Artificial Intelligence
    - CPSC 340: Machine Learning and Data Mining
    - CPSC 406: Computational Optimization

- CPSC 447: Introduction to Information Visualization (to launch in 2021W)
- ECON 323: Quantitative Economic Modeling with Data Science Applications
- ECON 398: Introduction to Applied Economics
- ECON 425: Introduction to Econometrics
- EOSC 410: Geoscientific Data Analysis and Empirical Modelling
- INFO 419: Information Visualization
- LING 342: Computational Models of Language
- MATH 441: Mathematical Modelling: Discrete Optimization Problems
- MATH 442: Graphs and Networks
- MICB 405: Bioinformatics
- MICB 425: Microbial Ecological Genomics
- STAT 406: Methods for Statistical Learning
- STAT 447B Special Topics in Statistics - STAT COMPUTING
- STAT 450: Case Studies in Statistics
- PHYS 410: Computational Physics
- PSYC 359: Advanced Research Methods in Behavioural Sciences

## Curriculum map

The table below shows how the courses in the Minor align with the specialization learning outcomes. The numbers on the left-hand column correspond to the numbered specialization learning outcomes that appear earlier in this document.

L.O.	DSCI 100	CPSC 103/203	STAT 201	CPSC 330	STAT 301	DSCI 310	DSCI 320	CPSC 368	CPSC 430	CPSC 416
1	X							X		X
2	X			X				X		
3	X				X		X			
4	X			X	X		X			
5	X		X		X					
6		X		X	X	X				X
7	X		X		X	X	X		X	
8	X		X			X				
9				X		X			X	
10	X					X		X		X

## Course development plan

- STAT 301 is being developed by Gabriela Cohen Freue, in collaboration with Alexi Rodriguez-Arelis (MDS). The course will launch in 2021W.
- CPSC 368 (Databases) is being developed by Jessica Wong (Computer Science), in collaboration with Rachel Pottinger (Computer Science) and a Postdoctoral Teaching and Learning Fellow. The course will launch in 2021W.
- DSCI 320 (Visualization for Data Science) is being developed by Kemi Ola (Computer Science), Vincenzo Coia (Statistics), and a Postdoctoral Teaching and Learning Fellow. The course will launch in 2021W.
- DSCI 310 (Reproducible Workflows) is being developed by Tiffany Timbers and Tomas Beuzen (MDS). The course will launch in 2021W.
- DSCI 400 (Ethics) will be developed next year to launch in 2022W. This course will be added as an option for electives in the Ethics category. Prior to the launch of DSCI 400, students taking an Ethics elective will take CPSC 430
- CPSC 4xx (Cloud Computing) will be developed next year to launch in 2022W. This course will be added as an option for electives in the Cloud Computing category. Prior to the launch of CPSC 4xx, students taking a Cloud Computing elective will take CPSC 416.

This course development work is partially funded by a Large Teaching and Learning Enhancement Fund (TLEF) grant awarded to the following group:

- Tiffany Timbers, Assistant Professor of Teaching, Statistics - Principal Investigator
- Gabriela Cohen Freue, Associate Professor, Statistics
- Mike Gelbart, Assistant Professor of Teaching, Computer Science
- Rachel Pottinger, Associate Professor, Computer Science
- Ian Mitchell, Professor, Computer Science
- Phil Austin, Associate Professor, Earth, Ocean & Atmospheric Sciences
- Patrick Walls, Associate Professor of Teaching, Mathematics
- Gülnur Birol, Director, Science Centre for Learning and Teaching
- Warren Code, Associate Director, Science Centre for Learning and Teaching

Part of the grant includes funding to hire a postdoctoral Teaching and Learning Fellow to assist with course development for one year of full-time work. This hiring is currently in progress and is nearing completion.

Name, title, phone number and e-mail address of the institutional contact person in case more information is required.

Patrice Belleville, 604-822-9870, patrice@cs.ubc.ca

## Planned courses

DSCI 320 – Visualization for Data Science

See attached course proposal.

CPSC 368 - Databases for Data Science

See attached course proposal.

DSCI 310 – Workflows for reproducible and trustworthy Data Science

See attached course proposal.

DSCI 400 – Ethics for Data Science (to launch in 2022W)

Legal and ethical issues concerning data, including aggregated data. Proactive compliance with rules, and in their absence, principles for the responsible management of sensitive data. Case studies.

CPSC 4xx – Cloud computing and Data Science applications for Big Data (to launch in 2022W)

How to use the web as a platform for data collection, computation, and publishing. Accessing Data via scraping and APIs. Using the cloud for tasks that are beyond the capability of local computing resources.

## Example route through the minor

In general, we expect students will take the newly developed courses. However, we provide additional options that will mostly be taken by those majoring in a related field.

As an example path, consider a student in Microbiology who is interested in the Data Science minor. Then, this example student might take the following courses:

- Prerequisite (data science): DSCI 100
- Prerequisite (statistical inference): STAT 201
- Prerequisite (programming): CPSC 103 and 203
- Prerequisite (math): MATH 102
- Statistical modeling: STAT 301
- Machine learning: CPSC 330
- Databases: CPSC 368
- Ethics: CPSC 430
- Workflows: DSCI 310
- In-discipline: MICB 405

## UBC Curriculum Proposal Form Change to Course or Program

### Category: (1)

<b>Faculty:</b> Science <b>Department:</b> Earth, Ocean & Atmospheric Sciences <b>Faculty Approval Date:</b> March 4, 2021	<b>Date:</b> March 4, 2021 <b>Contact Person:</b> Norm Hutchinson <b>Phone:</b> 604-822-8188 <b>Email:</b> norm@cs.ubc.ca
<b>Effective Date for Change:</b> 21S  <b>Proposed Calendar Entry:</b>  Geophysics  The Department of Earth, Ocean and Atmospheric Sciences offers majors, honours, combined honours, <b>and minor</b> specializations in Geophysics. For information on graduate degrees see Geophysics.  Geophysics is an interdisciplinary physical science of <b>the Earth</b> , the planets and their environments. Geophysics applies the knowledge and techniques of physics, mathematics, <b>computing</b> and chemistry to understand planetary structure, <b>climate and surface processes, and their evolution through time. The specialization provides the rigorous foundation in physical sciences and mathematics necessary for studying or addressing challenges related to Earth and planetary systems, natural hazards, and the stewardship of energy, material resources and the natural environment.</b>  Those who wish to undertake graduate studies or apply for professional registration as a geophysicist in industry are encouraged to enrol in Major or Honours Geophysics specializations, <b>or combine the minor with another science discipline.</b> Students who desire to register as Professional Geoscientists (P.Geo.) should contact Engineers and Geoscientists	<a href="http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1517">http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,1517</a> <b>Present Calendar Entry:</b>  Geophysics  The Department of Earth, Ocean and Atmospheric Sciences offers majors, honours <b>and</b> combined honours specializations in Geophysics. For information on graduate degrees see Geophysics.  Geophysics is an interdisciplinary physical science of the planets and their environments, <del>in particular the Earth.</del> Geophysics applies the knowledge and techniques of physics, mathematics, and chemistry to understand planetary structure, <del>dynamic behavior and</del> evolution through time.  Those who wish to undertake graduate studies or apply for professional registration as a geophysicist in industry are encouraged to enrol in Major or Honours Geophysics specializations. Students who desire to register as Professional Geoscientists (P.Geo.) should contact <del>the Association of Professional</del> Engineers and Geoscientists of British Columbia to ascertain course and other

<p>of British Columbia (EGBC) to ascertain course and other requirements.</p> <p>...</p> <p>Specializations</p> <p>...</p> <p><b>Minor (XXXX): Geophysics (GEOP)</b></p> <p>The minor consists of 18 credits, including all of EOSC 352, EOSC 354, EOSC 410, EOSC 453, and two of EOSC 329, 353, 450, 429, ATSC 404. See Minor Options [Link to: <a href="http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,410">http://www.calendar.ubc.ca/vancouver/index.cfm?tree=12,215,410,410</a>].</p>	<p>requirements. <del>The Major Earth and Ocean Sciences specialization is available for students who have a broad interest in the Earth Sciences as it relates to geophysics.</del></p> <p>...</p> <p>Specializations</p> <p>...</p> <p><b>Action:</b> Add a minor in Geophysics.</p> <p>Reword preamble to reflect broadening of the geophysics specializations.</p> <p>Update name of professional organization.</p> <p><b>Rationale:</b> Students wishing to do a minor in geophysics currently organize this through consultation with the program advisor and many are not aware of this option. With growing interest in quantitative degree programs, our intention is to make the option of a geophysics minor more visible and easier to plan for and complete. The geophysics major and honours program already contain a set of clearly recognizable core courses taught within the Department of Earth, Ocean and Atmospheric Sciences. The same courses also constitute a natural minor program at 18 credits. Defining the minor through that set of courses is a natural step, and removes the disincentive of the student having to define their minor from scratch.</p>
--	---

	<p>The organization responsible for professional registration, formerly known as the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC) is now called Engineers and Geoscientists of British Columbia (EGBC).</p> <p><b>Supporting Documents: SCI-20-2-Minor (XXXX): Geophysics (GEOP)</b></p>
--	--

Students wishing to do a minor in geophysics currently organize this through consultation with the program advisor and many are not aware of this option. With growing interest in quantitative degree programs, our intention is to make the option of a geophysics minor more visible and easier to plan for and complete. The geophysics major and honours program already contain a set of clearly recognizable core courses taught within the Department of Earth, Ocean and Atmospheric Sciences. The same courses also constitute a natural minor program at 18 credits.

Defining the minor through that set of courses is a natural step, and removes the disincentive of the student having to define their minor from scratch.

We note that minors usually do not have specialization Objectives or Learning Goals in the Calendar, but students pursuing a minor in geophysics will have the following objectives and learning goals:

### **Specialization Objectives**

Mastery of the curriculum will provide a thorough background in a wide range of geophysics that will:

1. qualify students for a wide range of careers in, or involving, the quantitative natural and applied sciences and the analysis of data;
2. help students towards registration as a Professional Geoscientist (P.Geo.) with Engineers and Geoscientists of British Columbia (EGBC);
3. qualify students for graduate school in geophysics and other quantitative Earth Sciences.

### **Learning Goals**

Students completing this specialization will be able to:

1. demonstrate basic knowledge of the physics of the Earth and other planets;
2. use analytical problem solving and mathematical techniques for model development;
3. use numerical problem solving, computer programming skills, statistical approaches and inverse theory for data analysis and modelling;
4. illustrate the distinctions between data, experiment, theory, and model;
5. integrate theory, observations, and/or numerics to solve geophysics and related geoscience or technical problems;
6. apply geophysical approaches to understand the structure and dynamics of Earth and other planetary bodies, including their climates, surface evolution and internal composition;
7. use relevant scientific and technical literature, write reports and communicate through oral presentations.

# BIOLOGY

**Category: (1)**

[illegible]

	<p>(via online seminars) for added perspective in real-world conservation challenges. This course was taught as a pilot in Winter Term 2 of 2019 and 2020.</p> <p>The current curriculum in Biology provides students with a foundation in ecology, evolutionary biology, biogeography and conservation biology, but these courses primarily draw from temperate ecosystems in their exploration of concepts, case studies and conservation attention; none of these courses covers tropical systems in depth. Yet, tropical systems are critical strongholds of biodiversity, showcase a wide diversity of ecological interactions, give added perspective on global biogeographic patterns and face a multitude of unique anthropogenic pressures. With its lens focused on tropical systems, <i>Tropical Ecology and Conservation</i> fills this gap and helps students attain a well-rounded base from which to approach ecological questions and conservation issues.</p> <p>The course will be an elective within the Biology Specialization, but is open to students in other majors who have completed the prerequisites. The course format will be two hours of lecture classes per week, with one two-hour tutorial session weekly to allow small group activities (e.g., in-class discussion of primary literature, data and literature reviews and synthesis).</p> <p><b>Supporting Documents: SCI-20-2-BIOL 424</b></p>
--	--

# COMPUTER SCIENCE

**Category: (1)**

[illegible]

## DATA SCIENCE

### Category: (1)

<p>Faculty: Science  <b>Department:</b> Computer Science/Statistics  <b>Faculty Approval Date:</b> March 4, 2021</p>	<p><b>Date:</b> March 4, 2021  <b>Contact Person:</b> Norm Hutchinson  <b>Phone:</b> 604-822-8188  <b>Email:</b> norm@cs.ubc.ca</p>
<p><b>Effective Date for Change:</b> 21S  <b>Proposed Calendar Entry:</b></p> <p><b>DSCI 310 (3) Reproducible and trustworthy workflows for data science</b></p> <p><b>Data science methods to automate the running and testing of code and analytic reports, manage data analysis software dependencies, package and deploy software for data analysis, and collaborate with others using version control. [3-0-1]</b></p> <p><b>Prerequisite: DSCI 100 and either (a) one of CPSC 203, CPSC 210 or CPEN 221 or (b) one of MATH 210, ECON 323 and one of CPSC 107, CPSC 110</b></p>	<p><b>Present Calendar Entry:</b></p> <p><b>Action:</b> Create new Course.</p> <p><b>Rationale:</b> In the last few years, data science skills and tools have been increasingly in demand across a large variety of disciplines. The intended audience for this course will be students who want to further refine and develop data science skills, with particular focus on how to perform data analysis that is efficient, reproducible and trustworthy.</p> <p>This course demonstrates workflows for writing reproducible, robust and valid computer scripts, analytic reports and data analysis pipelines, as well as packaging, automated testing and deployment of software written for data analysis. Emphasis is placed on how to collaborate on the above tasks effectively with others using version control tools, such as Git and GitHub. Concepts are learned and applied using real data and case studies.</p> <p>Currently, a course that covers the important topics listed above in the data science setting and at the undergraduate level does not exist. Thus, a new course is need to address this gap.</p> <p><b>Supporting Documents: SCI-20-2-DSCI 310</b></p>

**Category: (1)**

<p>Faculty: Science  <b>Department:</b> Computer Science/Statistics  <b>Faculty Approval Date:</b> March 4, 2021</p>	<p><b>Date:</b> March 4, 2021  <b>Contact Person:</b> Norm Hutchinson  <b>Phone:</b> 604-822-8188  <b>Email:</b> norm@cs.ubc.ca</p>
<p><b>Effective Date for Change:</b> 21S  <b>Proposed Calendar Entry:</b></p> <p><b>DSCI 320 (3) Visualization for Data Science</b></p> <p><b>Analysis, design, and implementation of static and interactive visual representations; visualization literacy; data communication; exploratory Data Analysis; application of theoretical principles to visualization development. [3-1.5-0]</b></p> <p><b>Prerequisites: STAT 201 and one of CPSC 203, CPSC 210, CPEN 221</b></p>	<p><b>Present Calendar Entry:</b></p> <p><b>Action:</b> Create new course.</p> <p><b>Rationale:</b> While data continues to grow exponentially, there is a need for tools and techniques to exploit its benefits. Visualizations have the potential to be an effective medium to support the communication and analysis of data as they capitalize on the strength of our visuoperceptual system. This potential, however, is reliant on the design and use of well-suited visualizations. Poorly designed visualizations can end up negatively affecting data analysis tasks. As Data Science programs crop up all across the continent, most of these programs follow the ACM Data Science Task Force's recommendation that details the importance of visualization courses. This outline proposes a course that will provide students with both the technical and theoretical skills necessary to select the most effective visualization or create novel visualizations to support their tasks.</p> <p><b>Supporting Documents: SCI-20-2-DSCI 320</b></p>

# EARTH, OCEAN & ATMOSPHERIC SCIENCES

**Category: (1)**

<p>Faculty: Science  <b>Department:</b> Earth, Ocean &amp; Atmospheric Sciences  <b>Faculty Approval Date:</b> March 4, 2021</p>	<p><b>Date:</b> March 4, 2021  <b>Contact Person:</b> Norm Hutchinson  <b>Phone:</b> 604-822-8188  <b>Email:</b> norm@cs.ubc.ca</p>
<p><b>Effective Date for Change:</b> 21S  <b>Proposed Calendar Entry:</b></p> <p><b>EOSC 325 (3) Principles of Physical Hydrogeology</b></p> <p>Theories of storage and movement of water within groundwater systems; Groundwater-surface water interaction; Role of groundwater systems in watershed management and regulating the environmental impacts of global change; Groundwater sustainability; Impacts of climate &amp; land use changes on groundwater resources [3-0-0]</p> <p><b>Prerequisites:</b> (a) 3<sup>rd</sup> year standing in Science, Land and Food Systems or Forestry; (b) One of MATH 101, MATH 103, MATH 105, MATH 121, SCIE 001.</p>	<p><b>Present Calendar Entry:</b></p> <p><b>Action:</b> Create new course.</p> <p><b>Rationale:</b> EOSC 325 will be a new science-focused version of EOSC 329 with a primary focus on the application of physical hydrogeology in geological and environmental sciences tailored specifically towards science students. EOSC 329 will be retained as a quantitative groundwater focused course for engineering and geophysics students.</p> <p>There are three principal rationales for developing EOSC 325 in addition to the existing course EOSC 329: 1) many science students found the current version of EOSC 329 challenging due to lacking background in fluid mechanics and soil mechanics; 2) there has been a great interest among students from geography,</p>

environmental science, land and food systems, and forestry to take a science-focused groundwater related course, and 3) with the approval of the environmental engineering program at UBC, we expect 40 – 60 new students to take an engineering-focused groundwater related course as part of their core curriculum and thus the size of the current EOSC 329 will increase to ~150 students. We therefore are going to develop a new science-student groundwater focused course (EOSC 325) for geological science, environmental science, geography, land and food systems and forestry students, and will retain the more quantitative groundwater-focused course (EOSC 329) for geological engineering, environmental engineering students, geophysics and other engineering students.

EOSC 325 will serve as a prerequisite for EOAS hydrology field school (EOSC 428) and groundwater contamination course (EOSC 429). A wide range of new topics will be included in EOSC 325, while more quantitative aspects and engineering-specific concepts will be removed, distinguishing the course from EOSC 329. These new topics include: 1) The concepts of subsurface travel time and travel time distribution, b) climate change and land-use change (e.g., agriculture, forestry) impact assessment on groundwater resources, c) groundwater-ecosystem interaction, and d) the role of groundwater in watershed management and regulating the impacts of global changes. These topics will replace complex quantitative topics at EOSC 329 including (5 weeks of lecture material): the transient 3-D groundwater flow, parameter estimation and calibration, pumping test analysis and engineering design, slug tests and land subsidence and settlement, and engineering preloading design. In addition, all the labs will be removed and replaced by assignments.

These new topics make EOSC 325 a suitable course for geological science and environmental science students in EOAS as well as for students of geography, land and food systems, and forestry. This course will replace EOSC 329 in the undergraduate specializations in Geology,

	<p>Geological Science and Environmental Science programs. Colleagues at Department of Geography and Faculty of Forestry were also supportive of this course proposal and found the course attractive for their students.</p> <p><b>Supporting Documents: SCI-20-2-EOSC 325</b></p>
--	--

## GEOGRAPHICAL SCIENCES

### Category: (1)

<b>Faculty:</b> Science (on behalf of Arts) <b>Department:</b> Geography <b>Faculty Approval Date:</b> March 4, 2021	<b>Date:</b> March 4, 2021 <b>Contact Person:</b> Norm Hutchinson <b>Phone:</b> 604-822-8188 <b>Email:</b> norm@cs.ubc.ca
<b>Effective Date for Change:</b> 21S <b>Proposed Calendar Entry:</b>  Geography, Faculty of Arts  GEOS: Geographical Sciences  All GEOB and <b>GEOS</b> courses carry Science credit and therefore may not be used by B.Sc. students to satisfy the Faculty of Science requirements <b>for</b> credits <b>in</b> Arts. Only Geography courses carrying the GEOG designation may be used to satisfy the Faculty of Science requirements <b>for</b> credits <b>in</b> Arts.  <b>As of Summer Session 2021, all GEOB courses have been renamed GEOS</b> [link to new GEOS courses page] <b>with equivalent course numbers.</b>  ...	<b>Present Calendar Entry:</b>  Geography, Faculty of Arts  GEOB: Geographical Sciences  All GEOB courses carry Science credit and therefore may not be used by B.Sc. students to satisfy the Faculty of Science requirements <b>of 18</b> credits <b>of</b> Arts. Only Geography courses carrying the GEOG designation may be used to satisfy the Faculty of Science requirements <b>of 18</b> credits <b>of</b> Arts.  ...  <b>Action:</b> Change course code. Update statement regarding Arts credits needed to satisfy the Faculty of Science requirement.  <b>Rationale:</b> The course code GEOB was originally created in the early 2000's to distinguish our Geographical Sciences specialization B.Sc. courses (those with Faculty of Science designation) from GEOG (those within Arts) courses. The GEOB name was decided upon as a way to signal Biogeosciences. However, as the Geography's B.Sc. specialization has shaped its sub-discipline name into Geographical Sciences, GEOS better reflects what we call ourselves and has a more reasonable connection to the discipline. Further, it is unclear what the GEOB course code now stands for, and according to Arts advisors and geography faculty, the GEOB course code has only served to confuse students. This change will assist students in "finding" our discipline.  <b>This change is being made on behalf of Arts with their approval. Course code will stay in</b>

	<p data-bbox="841 100 1138 134"><b>Arts. Consult attached.</b></p> <p data-bbox="841 170 1401 210"><b>Supporting Documents: SCI-20-2-GEOS</b></p>
--	---



them with the mathematical maturity needed to succeed in many of our fourth-year courses. We envision that this course will become a core 300-level course in our majors specialization - a natural extension of ideas in MATH 220 to higher mathematics.

Additionally the course will place a strong emphasis on core skills such as proof writing and mathematical rigour. The proposed course will provide a path for our mathematics major students to some of the Mathematics Department's fourth year courses. These courses are listed below. By providing a bridge to these 400-level courses, the proposed MATH 319 will give our Majors students exposure to a much wider range of mathematical ideas.

At this stage, MATH 319 will not be a prerequisite for any courses. However, we anticipate that MATH 319 will provide helpful background for the following mathematics courses:

- \* MATH 300 (3) Introduction to Complex Variables
- \* MATH 322 (3) Introduction to Group Theory
- \* MATH 401 (3) Green's Functions and Variational Methods
- \* MATH 402 (3) Calculus of Variations
- \* MATH 403 (3) Stabilization and Optimal Control of Dynamical Systems
- \* MATH 412 (3) Advanced Linear Algebra
- \* MATH 424 (3) Classical Differential Geometry
- \* MATH 428 (3) Mathematical Classical Mechanics I
- \* MATH 437 (3) Number Theory
- \* MATH 440 (3) Complex Analysis
- \* MATH 441 (3) Mathematical Modelling: Discrete Optimization Problems
- \* MATH 442 (3) Graphs and Networks
- \* MATH 443 (3) Graph Theory
- \* MATH 444 (3) Mathematical Research and Writing
- \* MATH 450 (3) Asymptotic and Perturbation Methods

**Supporting Documents: SCI-20-2-MATH 319**

# SCIENCE

**Category: (1)**

[illegible]



To: Senate  
From: Ad-Hoc Committee to Review Student Appeal Procedures and Structures  
Re: Interim Report  
Date: 9 April 2021

---

## Introduction

Earlier this academic year, the Senate established an Ad Hoc Committee to consider comments and concerns raised over the past triennium regarding how the University's quasi-judicial appeals tribunals function. Appointed to this Ad Hoc Committee were Ms Natasha Rygnestad-Stahl (Chair), Dr Christopher "Toph" Marshall, and Dr Lance Rucker. The terms of reference for the Ad Hoc Committee are as follows:

- 1) To review the policies and procedures for appeals of academic and non-academic discipline, academic standing, and admissions with particular attention to:
  - the means whereby appeal panel members gain knowledge of principles of administrative justice, procedural fairness and issues of equity as they relate to appeals;
  - the composition of the committees (both the absolute and relative numbers of students, faculty, and convocation members), including but not limited to the desire to constitute hearing panels with a diversity of members;
  - the procedures followed before, during and after an appeal is considered, and the time allowed for each step;
  - the infrastructural support provided to the Senate Office and the Appeals Committees, including:
    - ☐ support to appellants throughout the appeal process, from learning about the grounds for appeal and appropriately preparing an appeal through to receiving and understanding the decision;
    - ☐ the support provided for the wellbeing of both appellants and appeal panel members.
- 2) To submit a report to the Senate Nominating Committee by April 15, 2021 with recommendations with a view to ensuring fairness and transparency of process, specifically:
  - recommendations for changes, as appropriate, to the committees' compositions, policies and procedures;
  - recommendations for changes, as appropriate, to the infrastructural support provided for the appeals processes by the Senior Administration through the Senate Office; and
  - any recommendations deemed appropriate for matters to be subject to a further, external review

As Senators are aware, the Senate has three committees which consider appeals: the Committee on Appeals on Academic Standing, the Committee on Student Appeals on

Academic Discipline, and the Admissions Committee. References in this report to “Appeals Committees” only refer to the first two bodies. Recommendations applicable to the Admissions Committee will make specific reference to that body given the differences in structure and process used for consideration of appeals by admissions applicants versus those for current and former students.

The Senate Ad Hoc Committee has met on eight occasions since January. The Committee has consulted with the chairs of both the academic standing and academic discipline appeals committees, as well as the chair of the admissions committee. The Committee has also met with the Ombudsperson and academic governance officers from both the UBC Vancouver and UBC Okanagan Senate Appeals Committees. A request for feedback has also been sent to the last two triennium’s membership of both Appeals Committees and several past and current members have supplied comments, which are still being received and considered by the Ad Hoc Committee. The Committee continues to consult with relevant members of the campus community, and writes now to the Senate with its preliminary recommendations for comment from Senate and senators. These recommendations will continue to be revised over the next month and the Ad Hoc Committee hopes to present a final list of recommendations in May. The Committee would appreciate Senate’s comments on both the specific suggestions below as well as any general comments Senators may have. The Committee appreciates that its final report will be one month later than expected and appreciates Senate’s understanding as it works through this complex series of matters.

### **Preliminary Recommendations of the Ad Hoc Committee on Student Appeals Processes and Structures**

#### **1.0 Training**

##### **1.1**

Enhancements are needed to the training regime offered to members of Appeals Committees. In particular, the Ad Hoc Committee believes that sufficient training opportunities must be offered so as to make it reasonable to have all members of Appeals Committees attend a full training session prior to hearing a matter and for such training to be mandatory.

##### **1.2**

While Admissions Committee members should not be required to attend the same training regime as offered to the Appeals Committees, all senators should be welcome and encouraged to attend, in particular but not limited to members of the Admissions Committee.



## 1.3

The Ad Hoc Committee has noted that various amounts of training have been offered to appeals committee members over the past decade. The Ad Hoc Committee believes that to properly address the amount of material needed by Appeals Committee members, an in-depth two-day training course should be offered at least annually for all Appeals Committee members; in year 1 of the triennium this should occur in the fall, and in years 1, 2 & 3 in the spring, to allow participation by properly trained student senators for their following year-long term on the Senate.

## 1.4

In addition to the detailed introductory training offered in S 1.3, in-service training should be offered at least once per term to allow for detailed focus on issues and application for matters both generally and as arise from time to time at each committee.

## 1.5

In addition to the current focus on administrative law and procedural fairness, both annual and in-service training should be expanded, as appropriate for each Appeals Committee, to include trauma-informed approaches, student mental health issues, sexual assault, cultural competency, and more practical information such as practice and conduct at hearings.

## 1.6.

In addition to the annual and in-service training recommended above, specialized mandatory training for Appeals Committee chairs and vice-chairs, especially in regard to procedures and the writing of reasons should be developed, to be supplemented, where possible, with one-on-one coaching and mentorship from previous chairs. The Ad Hoc Committee suggests that this should be at least two half-days near the start of their terms of office and additionally as required.

## 1.7

Where possible, on-line and printed training resources should be made available both for recitation and to benefit those who cannot attend in-person sessions.

## 1.8

Templates should be maintained for chairs and vice-chairs of Appeals Committees and of the admissions committee for both the conduct of hearings and reporting of decisions and reasons for decisions.



## 2.0 Composition of Appeals Panels

### 2.1

The Ad Hoc Committee does not believe that the Appeals Committees should be joined (Such as they are at the Okanagan campus) given the differences in the jurisdictions and mandates and the relative differences in scale between the campuses.

### 2.2

The Ad Hoc Committee believes that the current sizes and quorums of the Appeals Committees and the admissions committee are appropriate.

### 2.3

To encourage a diversity of backgrounds on appeals panels while ensuring timely consideration of appeals, every Appeals Committee panel should better represent the breadth of senate membership, with at least one student, one faculty member, and one convocation senator on each panel wherever possible.

### 2.4

The Ad Hoc Committee notes that senators who are associate deans who act on student matters are presently excluded from membership on the Appeals Committees in practice. This restriction should be codified.

### 2.5

The Ad Hoc Committee notes that presently, Appeals Committee chairs are generally elected triennially. The Committee recommends that this be changed to an annual (re)election for chairs and vice-chairs of each committee and that a simpler mechanism for removing committee chairs than that provided in Roberts Rules of Order Newly Revised be made available to Appeals Committees.

## 3.0 Resources for Appellants

### 3.1

The Ad Hoc Committee believes that former members of Appeals Committees should be permitted and encouraged to make themselves available to appellants and potential appellants to guide them in appeals processes. The Ad Hoc Committee recognizes that there may be legal and ethical considerations for this suggestion that need to be further explored, but also recognizes the need of appellants to have better advice on University processes that this may address.

### 3.2

While recognizing the need for specific language in appeals regulations, the Ad Hoc Committee proposes that plain language explanations should be developed to describe and educate appellants, respondents, and committee members of appeals processes.



### 3.3

All faculty-level final decisions on matters of academic standing should include language noting both that finality at the faculty level as well as the Senate appeals process and resources available to students.

## 4.0 Committee Functioning

### 4.1

Greater clarity is needed regarding the roles of a panel chair, panel members, and panel secretary in the drafting and review of reasons for decisions.

### 4.2

Mechanisms must be created to ensure more timely consideration of appeals by Appeals Committees, including availability and completion of training of Appeals Committee members, and availability of appellants, respondents, and witnesses. The committee is exploring if summary judgments to grant appeals to students if their appeal is not heard in a reasonable time may be implemented.

### 4.2

The Ad Hoc Committee believes that “blended” hearings where some persons are in attendance in person and some remotely are not advantageous to committee functioning. The Ad Hoc Committee suggests that should the Registrar or the Chair permit an appellant to attend remotely, the hearing should be conducted remotely.

### 4.3

Specific language should be added to appeals regulations reminding all attending, either in person or remotely, of the confidentiality of proceedings and the prohibition of audio, visual or other recording of hearings. Presently, while confidentiality is stated in the rules, there is no explicit reference to a prohibition on recordings, although this is stated by the chair at the start of each hearing.

### 4.4

The Ad Hoc Committee believes that the Appeals Committees and admissions committee rules should specify timelines for the distribution of reasons for decisions to appellants and respondents. The Ad Hoc Committee suggests that reasons for decision should take no more than 60 days from the conclusion of the hearing to be finalized.

# STUDENT EVALUATION OF TEACHING 2019W REPORT TO SENATE

## **EXECUTIVE SUMMARY**

This report summarizes the results for 8,241 instructor ratings administered in 2019W. Due to low response rates in term 2, overall response rates in 2019 were lower than in previous years. Almost half of the instructor ratings in 2019W had an interpolated median for all 6 UMIs of 4.5 or higher (on a 5-point scale), with favourable ratings (sum of 'agree' and 'strongly agree' responses) greater than 75%. On the other hand, less than 10% of ratings had an interpolated median below 3.5 and with favourable rating of less than 50%. These results are similar to those obtained in previous years.

For most University Module Items (UMI) in 2019W, instructor ratings in term 2 were higher than in term 1. Though differences were statistically significant, they were of low magnitude (less than 0.1) and of little practical significance.

## SECTION 1

### SCOPE OF IMPLEMENTATION

A total of 8,241 instructor ratings were submitted to the University, for 6,892 course sections in which the University Module Items (UMI) were administered. This represents a 5.8% decrease in the number of instructor ratings compared to 2018W.

In 2019W, the number of evaluations overall and by Faculty, is more or less evenly split between the two winter terms, with 49% of the 2019W evaluations in term 1 and 51% in term 2. The only exceptions were Dentistry with significantly more evaluations in term 1 and Vantage College with significantly more evaluations in term 2.

A summary of the scope of implementation, by Faculty and year level, is shown in Table 1.

**Table 1. Scope of 2019W Implementation<sup>1</sup>**

FACULTY	NUMBER OF INSTRUCTORS EVALUATED <sup>2</sup>					
	100 Level	200 Level	300 Level	400 Level	Grad	Total
Applied Science	74	168	165	210	356	973
Arts	628	418	838	452	378	2,714
Commerce	19	145	252	157	168	741
Dentistry	4	29	23	166	41	263
Education	46	41	290	256	213	846
Forestry	11	32	41	41	40	165
Land & Food Systems	10	27	65	45	39	186
Law	0	42	78	95	29	244
Medicine <sup>3</sup>	11	20	80	124	307	542
Pharmaceutical Sciences	41	30	29	29	7	136
Science	294	254	337	199	209	1,293
Vantage College	90	48	0	0	0	138
<b>TOTAL</b>	1,228	1,254	2,198	1,774	1,787	8,241

<sup>1</sup> In accordance with the Senate Policy, courses of an independent nature, sections with very small enrolments and those where other forms of evaluation are more appropriate are not included in this analysis.

<sup>2</sup> Unique course section/instructor combination.

<sup>3</sup> Includes Medicine courses evaluated by Science.

## SECTION 2

### RESPONSE RATES

Overall response rates were lower in 2019W compared to previous years. Response rates meeting or exceeding those recommended are shown in Tables 2 and 3, respectively (including comparative data for 2018W).

In term 1 (2019W1), 57% of evaluations met the minimum recommended response rate. As could be seen in the last two columns of Table 2, these rates were similar to term 1 in 2018. However, in term 2 (2019W2), only 32% of evaluations met the recommended minimum response rate; this is significantly lower than term 2 in previous years. This could be attributed to the sudden pivot to remote instruction, due to the COVID-19 epidemic.

**Table 2. Sections Meeting or Exceeding the Recommended Response Rate in 2019 Term 1**

Class Size <sup>1</sup>	Course Sections	Number of Evaluations	Total Enrolment	Recommended Minimum Response Rate <sup>1</sup>	% meeting minimum recommended	
					2019W1	2018W1
≤ 10	239	301	1,828	75%	37%	28%
11 -19	579	658	8,683	65%	37%	36%
20 -34	862	999	22,784	55%	41%	47%
35 - 49	624	675	25,668	40%	63%	68%
50 -74	344	476	20,817	35%	57%	52%
75 -99	211	239	18,457	25%	92%	96%
100 -149	249	333	29,947	20%	93%	100%
150 - 299	218	323	44,232	15%	87%	96%
300 - 499	19	25	6,696	10%	100%	100%
> 500	1	1	766	5%	100%	
<b>Overall</b>	<b>3,346</b>	<b>4,030</b>	<b>179,878</b>		<b>57%</b>	<b>57%</b>

<sup>1</sup> Zumrawi, A., Bates, S. & Schroeder, M (2014). What response rates are needed to make reliable inferences from student evaluations of teaching? Educational Research and Evaluation: An International Journal on Theory and Practice, 20:7-8, 557-563

More than half of the sections in term 2 with 75 or less students did not meet the minimum recommended response rate. These sections accounted for 47% of the total enrollment in the term.

**Table 3. Sections Meeting or Exceeding the Recommended Response Rate in 2019 Term 2**

Class Size <sup>1</sup>	Course Sections	Number of Evaluations	Total Enrolment	Recommended Minimum Response Rate	% meeting minimum recommended	
					2019W2	2018W2
≤ 10	303	351	2,362	75%	19%	22%
11 -19	677	825	10,328	65%	11%	30%
20 -34	917	1,063	23,942	55%	16%	39%
35 - 49	599	694	24,414	40%	32%	57%
50 -74	388	436	23,007	35%	34%	65%
75 -99	210	247	18,162	25%	66%	84%
100 -149	236	294	28,309	20%	80%	94%
150 - 299	196	277	39,269	15%	88%	94%
300 - 499	19	23	6,678	10%	100%	100%
> 500	1	1	1,451	5%	100%	100%
<b>Overall</b>	3,546	4,211	177,922		32%	51%

## Section 3

### RESULTS

Statistics reported and used to summarize instructor ratings in this section include: The Interpolated Median (IM), Dispersion Index (DI), and Percent Favorable Rating (PFR).

The interpolated median (adjusted median) is an appropriate measure for the center of the data, and is computed by adjusting the median. The extent of the adjustment depends on the distribution of students' ratings relative to the customary median i.e., how many of the students' scores are greater than, equal to, or less than the customary median.

The dispersion index is a measure of variability in student scores. It ranges in value from zero to 1.0. A value of zero is obtained when all student respondents agree on the same instructor rating. A value of 1.0, on the other hand, occurs when respondents split 50/50 between scores of strongly disagree and strongly agree. (This rarely happens in practice; values for the dispersion index in 2019W range from 0-0.83, but dispersion was higher than 0.7 in only 45 of 3,666 evaluations meeting minimum expected response rates).

Percent favourable rating reflects the ratio of students who responded with 'Agree' or 'Strongly Agree' as a percentage of all respondents.

Term 1 interpolated median scores for the 6 UMI questions, by year level, are shown in Table 4. Average percent favourable rating (agree and strongly agree) is given in parenthesis. Results were comparable to those obtained in 2018. Term 2 is shown in Table 5.

The distribution of the six UMI median ratings are shown in Appendix A, and percentiles of the distributions are summarized, by academic term, in Appendix B.

For most UMI questions, 2019W term 2 instructor ratings were higher than those in term 1. Though differences were statistically significant, they were low in magnitude (less than 0.1) and of little practical significance, if any.

**Table 4. 2019 Term 1 Median Score and (Percent Favourable Rating) by Year Level<sup>1, 2, 3</sup>**

UMI	Year Levels						2018W Median
	100 Level	200 Level	300 Level	400 Level	Grad	Overall	
1. The instructor made it clear what students were expected to learn	4.3 (82%)	4.3 (80%)	4.3 (81%)	4.4 (82%)	4.4 (87%)	4.3 (83%)	4.3
2. The instructor communicated the subject matter effectively	4.2 (80%)	4.3 (78%)	4.3 (80%)	4.4 (81%)	4.5 (85%)	4.3 (81%)	4.3
3. The instructor helped inspire interest in learning the subject matter	4.2 (74%)	4.2 (75%)	4.4 (78%)	4.5 (80%)	4.5 (85%)	4.3 (79%)	4.3
4. Overall evaluation of student learning (through exams, essays, presentations, etc.) was fair	4.2 (80%)	4.2 (80%)	4.3 (81%)	4.5 (84%)	4.5 (86%)	4.3 (82%)	4.3
5. The instructor showed concern for student learning	4.2 (81%)	4.3 (82%)	4.4 (83%)	4.5 (85%)	4.5 (89%)	4.3 (84%)	4.3
6. Overall the instructor was an effective teacher	4.2 (80%)	4.3 (79%)	4.3 (80%)	4.4 (82%)	4.5 (86%)	4.3 (82%)	4.3

<sup>1</sup> Based on a 5-point scale, where 1= Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

<sup>2</sup> Interpolated Median

<sup>3</sup> Percent favourable rating (in parenthesis) defined as the percentage of respondents who rated the instructor a 4 or 5.

**Table 5. 2019 Term 2 Median Score and (Percent Favourable Rating) by Year Level**

UMI	Year Levels						2018W Median
	100 Level	200 Level	300 Level	400 Level	Grad	Overall	
1. The instructor made it clear what students were expected to learn	4.3 (84%)	4.4 (82%)	4.4 (83%)	4.4 (83%)	4.5 (87%)	4.4 (84%)	4.3
2. The instructor communicated the subject matter effectively	4.3 (81%)	4.4 (80%)	4.4 (81%)	4.4 (82%)	4.5 (85%)	4.4 (82%)	4.3
3. The instructor helped inspire interest in learning the subject matter	4.2 (77%)	4.3 (76%)	4.4 (80%)	4.5 (80%)	4.6 (85%)	4.4 (80%)	4.3
4. Overall evaluation of student learning (through exams, essays, presentations, etc.) was fair	4.3 (83%)	4.4 (81%)	4.4 (83%)	4.5 (85%)	4.6 (87%)	4.4 (84%)	4.3
5. The instructor showed concern for student learning	4.3 (84%)	4.5 (84%)	4.5 (86%)	4.5 (87%)	4.6 (90%)	4.5 (86%)	4.3
6. Overall the instructor was an effective teacher	4.3 (82%)	4.4 (81%)	4.4 (82%)	4.4 (83%)	4.5 (86%)	4.4 (83%)	4.3

## MAGNITUDE AND VARIABILITY OF RATINGS

In this section we consider all 3 key statistics (IM, DI and PFR) in summarizing instructor ratings. Table 6 provides an analysis of UMI question 5 (the instructor showed concern for student learning) in term 1, for evaluations meeting minimum response rates. Average percent favourable rating, within each cell in the table, is given in parenthesis.

As an example of how to interpret this, consider the middle row in the table. There are 318 instructor ratings within this rating band of UMI 5 score between 3.5 and 4.0. Of these, 56 have a dispersion index between 0.3 and 0.4, and within these 56 instructor ratings, there is (on average) 71% of respondents who rated their instructors favourably (the sum of 'agree' and 'strongly agree' categories on UMI 5).

As would be expected, percent favourable rating decreases as dispersion increases in the first three rows (interpolated median of 3.5 or more), but increases with dispersion in the lower two rows (interpolated median less than 3.5). Thus, evaluations in the upper left cells have high ratings, with low variability, resulting in higher percentages of favourable ratings. Whereas the lower left cells show low ratings, with low variability in students' scores, resulting in low percentages of favourable ratings. Furthermore, instructor evaluations in the bottom two rows, corresponding to an interpolated median of less than 3.5, have percent favourable ratings not exceeding 50%.

Table 6: 2019 Winter Term 1 - Distribution of Instructor Ratings for UMI Question 5 for Surveys Meeting the Recommended response Rate (% favourable rating in parenthesis).

Meeting the Recommended Response Rate (% Favourable Rating in Parenthesis):										
		Variability in Instructor Rating (dispersion)								
		0	< 0.2	0.2 - 0.3	0.3 - 0.4	0.4 -0.55	0.55-0.70	0.7-0.85	> 0.85	Total
IMedian		Number of Evaluations (% Favourable Rating in Parenthesis)								
	< 5.0	40 (100%)	270 (100%)	391 (97%)	274 (90%)	103 (83%)	13 (75%)			1,091
	< 4.5		4 (97%)	85 (96%)	328 (87%)	336 (79%)	42 (73%)	1 (70%)		796
	< 4.0			3 (66%)	56 (71%)	169 (64%)	81 (60%)	9 (56%)		318
	< 3.5			2 (34%)	3 (29%)	29 (41%)	31 (44%)	11 (44%)		76
	< 3.0						15 (25%)	3 (34%)		18
										2,299

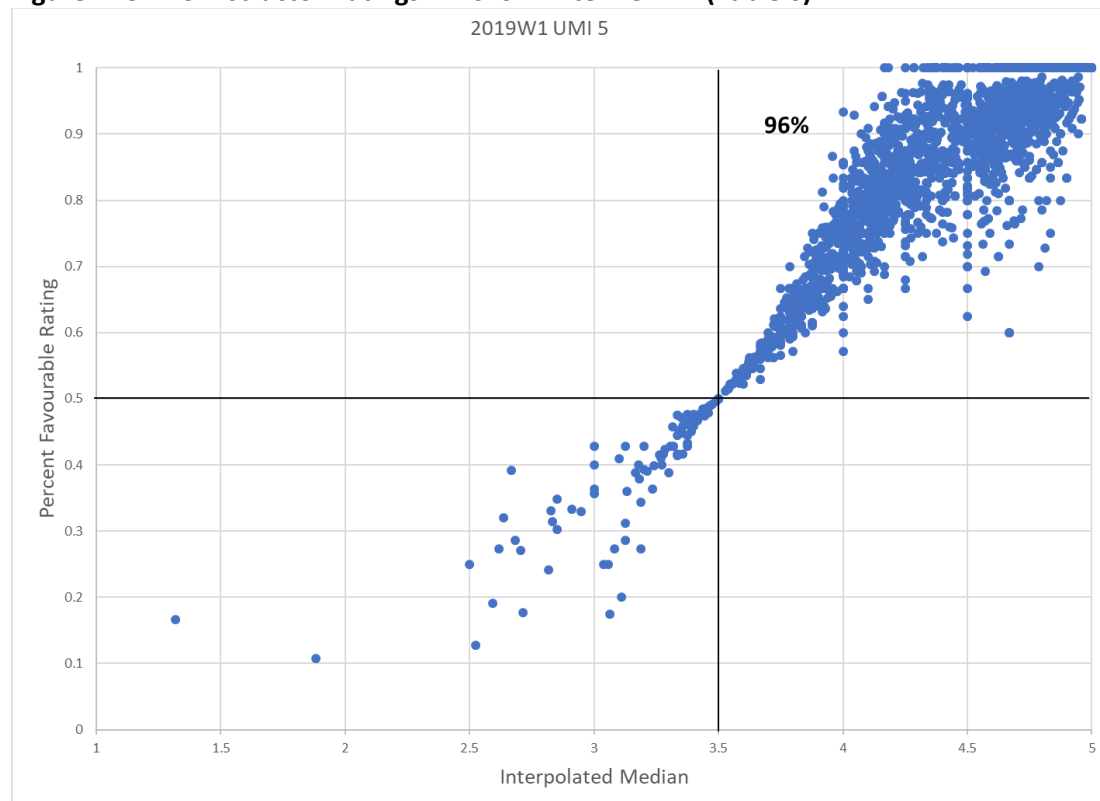
As evident in Table 6, most of the low ratings with low dispersion index (lower left cells of the table) are from surveys that did not meet the minimum recommended response rates, i.e., few or no evaluations that met the minimum recommended response rates are found in these cells.

Within this subset of the dataset, it would be plausible to find a median UMI score of e.g. 3.7, where more than two thirds of the student respondents rated the instructor favourably. This illustrates the additional insight gained from considering both the interpolated median of the UMI score and the variability in instructor rating that this measure of dispersion provides.

Low ratings with high dispersion should be interpreted within context, considering factors such as response rate, class size and the magnitude of the dispersion. Few, if any, instructor ratings with extreme dispersion index, met the minimum recommended response rate (last column in Table 6). It is worth noting that such extreme distributions, indicative of polarized ratings, are not common and mostly occur in smaller classes; often where the minimum recommended response rate is not met.

Figure 1 is a graphical depiction of the data in Table 6, plotting two of the key statistics – IM against PFR.

**Figure 1: UMI 5 Instructor Ratings in 2019 Winter Term 1 (Table 6).**



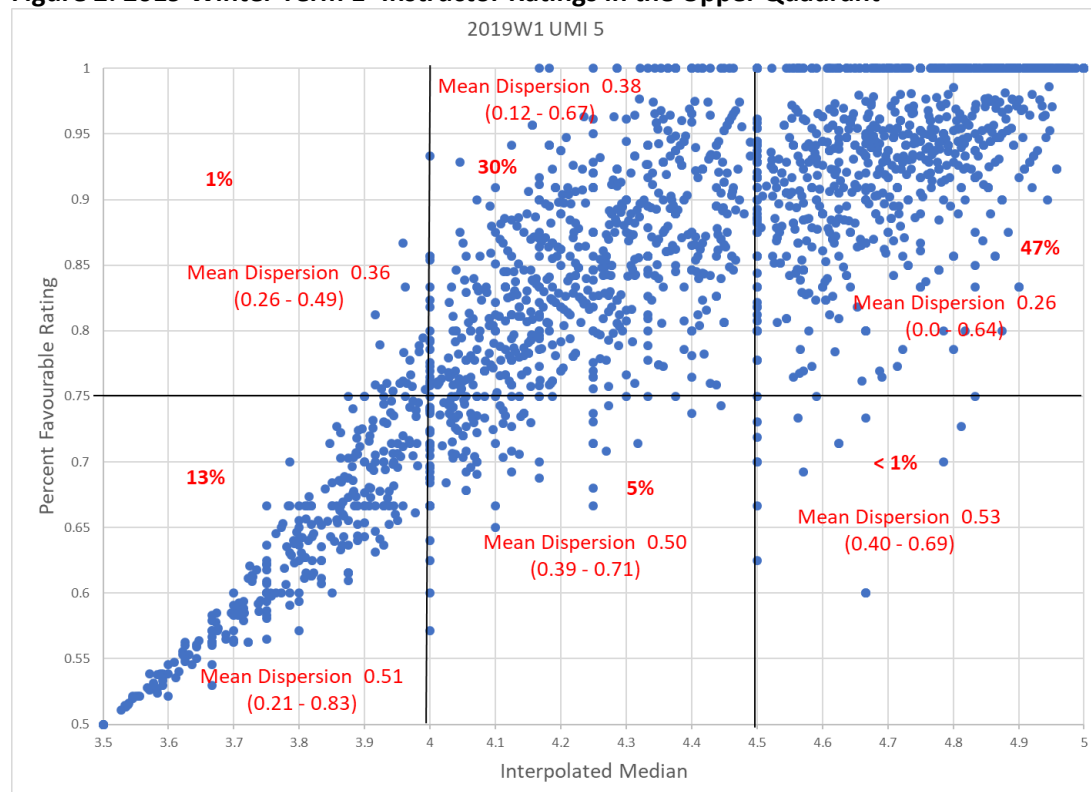
As evident in Figure 1, the pivot point in the relationship between the interpolated median and percent favourable rating, on a 5-point scale, is an interpolated median of 3.5 and 50% favourable rating. This relationship is such that, no instructor evaluation with an interpolated median below 3.5 would have a percent favourable rating above 50%, nor would evaluations with an interpolated median above 3.5 ever have favourable ratings below 50%.

As such, the upper right quadrant in Figure 1 corresponds to the first three rows in Table 5: 96% of all term 1 UMI 5 instructor ratings are in this quadrant. Likewise, the lower left quadrant corresponds to the bottom two rows in the table and includes evaluations with favourable ratings not exceeding 50%.

Figure 2 is a closer look at the instructor ratings in the upper right quadrant of Figure 1. More than 75% of ratings are in the two upper right sub-quadrants, with interpolated medians above 4.0 and over 75% favourable rating. Of these, almost half of instructor ratings are in the upper rightmost sub-quadrant (47% in term 1 and 52% in term 2), with low dispersions and interpolated medians above 4.5.

This visualization illustrates a remarkable feature that is often obscured in tables of data: in just over three-quarters of all evaluations in Winter Term 1, 75% or more student respondents 'agree' or 'strongly agree' that the instructor showed concern for student learning.

**Figure 2: 2019 Winter Term 1- Instructor Ratings in the Upper Quadrant**



Term 2 data for UMI question 5 is qualitatively equivalent; a summary and a graphical representation is shown in Appendix C. Graphical representation of instructor ratings for UMI questions 1, 2, 3 and 6 are shown in Appendix D. UMI question 4 has been consistently answered by fewer students and was not included in this analysis.

## **Section 4**

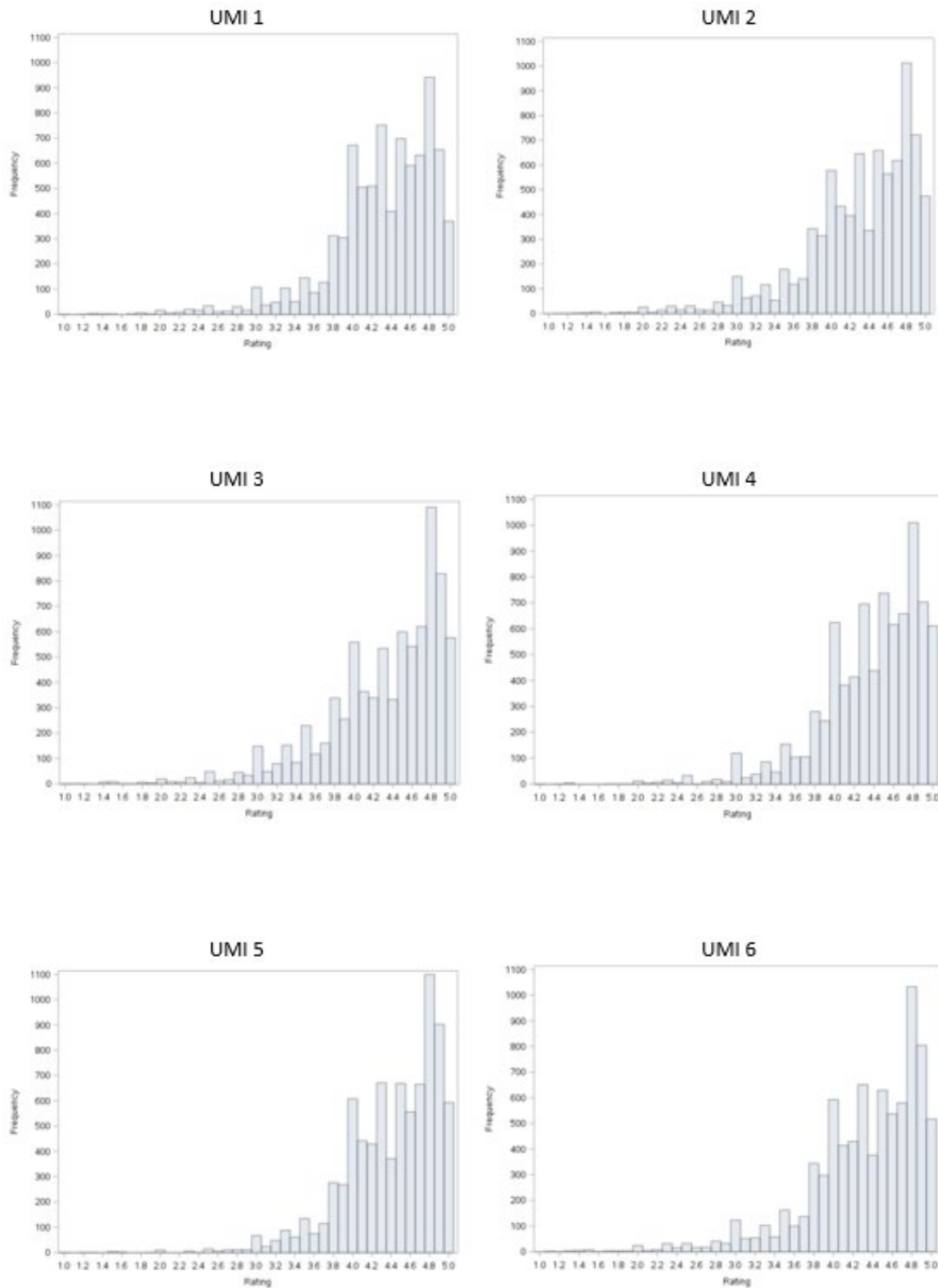
### **LOOKING FORWARDS**

The Student Evaluation of Teaching Working Group Recommendations were endorsed by both UBC Vancouver and UBC Okanagan Senates in May 2020. A committee is currently planning for the implementation of the working group recommended changes. Both the UBC-Vancouver Senate Teaching and Learning Committee and the UBC-Okanagan Learning and Research Committee have agreed to defer the implementation of recommended changes to the summer of 2021.

Information about Student Evaluation of Teaching at UBC is available at <http://teacheval.ubc.ca>.

## APPENDIX A

### UMI Frequency Distribution of Median Ratings in 2019W



**APPENDIX B****2019W UMI Interpolated Median Percentiles**

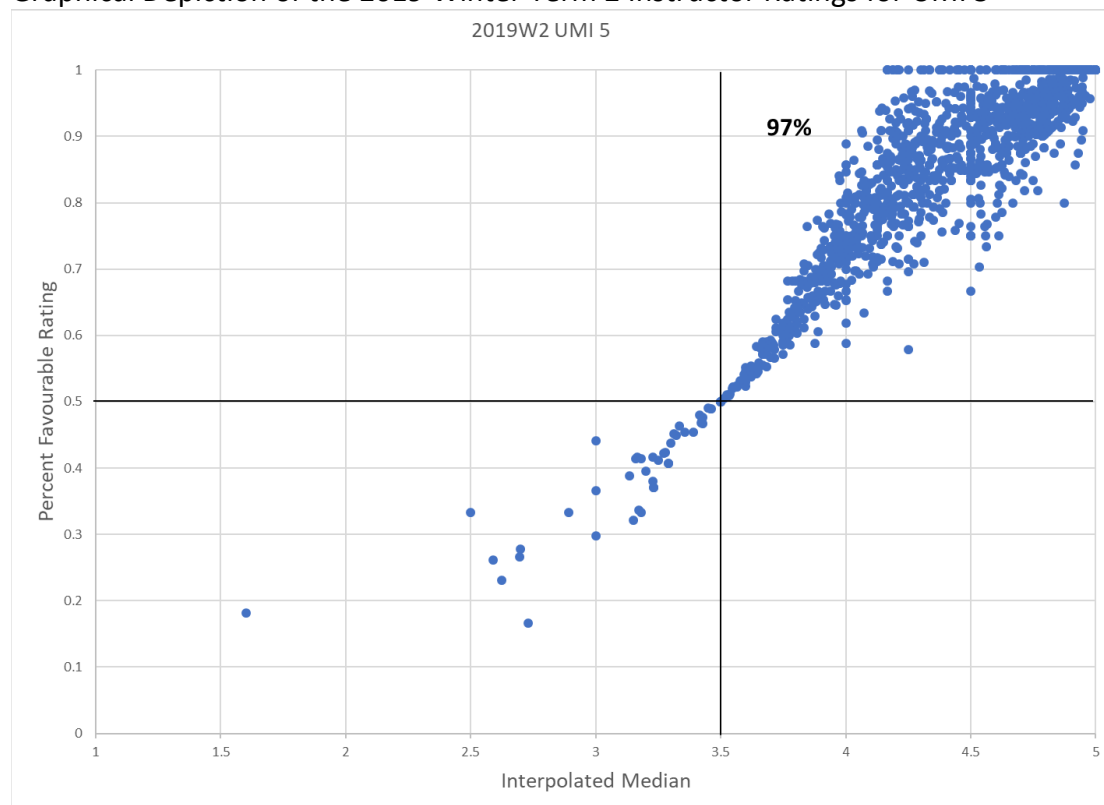
<b>UMI</b>	<b>Term</b>	<b>5<sup>th</sup> Percentile</b>	<b>25<sup>th</sup> Percentile</b>	<b>50<sup>th</sup> Percentile</b>	<b>75<sup>th</sup> Percentile</b>	<b>95<sup>th</sup> Percentile</b>	<b>Interquartile Range</b>
<b>1</b>	<b>2019W1</b>	3.3	4.0	4.4	4.7	4.9	0.7
	<b>2019W2</b>	3.3	4.0	4.4	4.8	5.0	0.7
<b>2</b>	<b>2019W1</b>	3.0	4.0	4.4	4.7	4.9	0.7
	<b>2019W2</b>	3.1	4.0	4.5	4.8	5.0	0.8
<b>3</b>	<b>2019W1</b>	3.1	4.0	4.5	4.8	5.0	0.8
	<b>2019W2</b>	3.1	4.0	4.5	4.8	5.0	0.8
<b>4</b>	<b>2019W1</b>	3.4	4.1	4.5	4.8	5.0	0.7
	<b>2019W2</b>	3.3	4.1	4.5	4.8	5.0	0.7
<b>5</b>	<b>2019W1</b>	3.5	4.1	4.5	4.8	5.0	0.7
	<b>2019W2</b>	3.5	4.1	4.5	4.8	5.0	0.7
<b>6</b>	<b>2019W1</b>	3.1	4.0	4.4	4.8	5.0	0.8
	<b>2019W2</b>	3.1	4.0	4.5	4.8	5.0	0.8

## APPENDIX C

2019 Winter Term 2 - Distribution of Instructor Ratings for UMI Question 5 for Surveys Meeting the Recommended response Rate (% favourable rating in parenthesis).

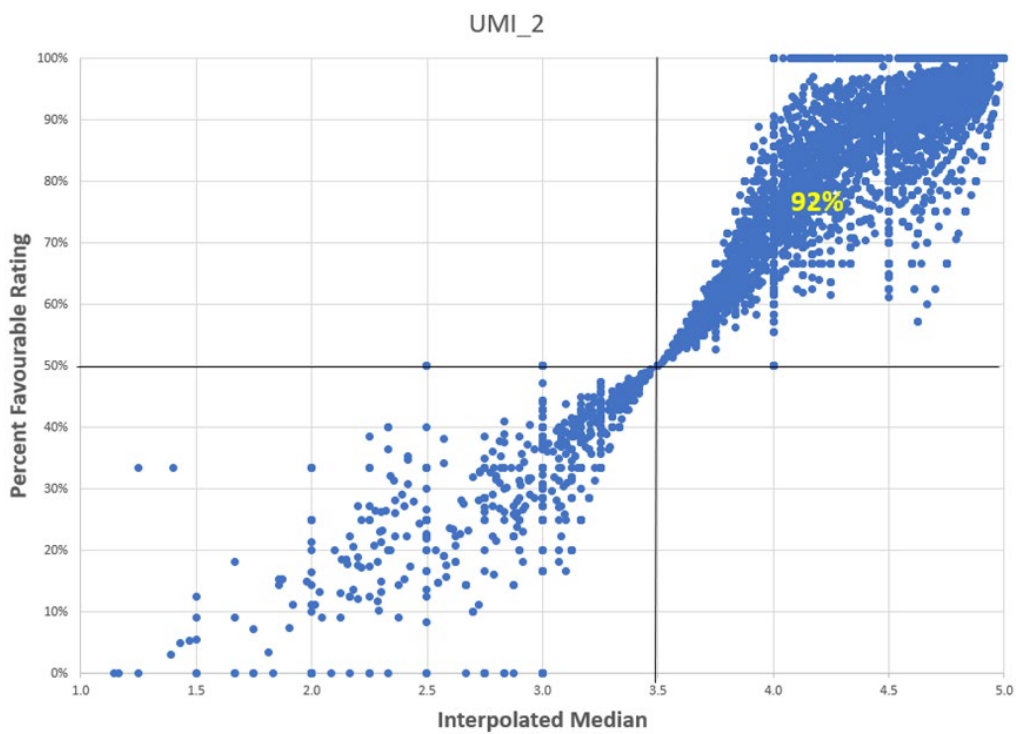
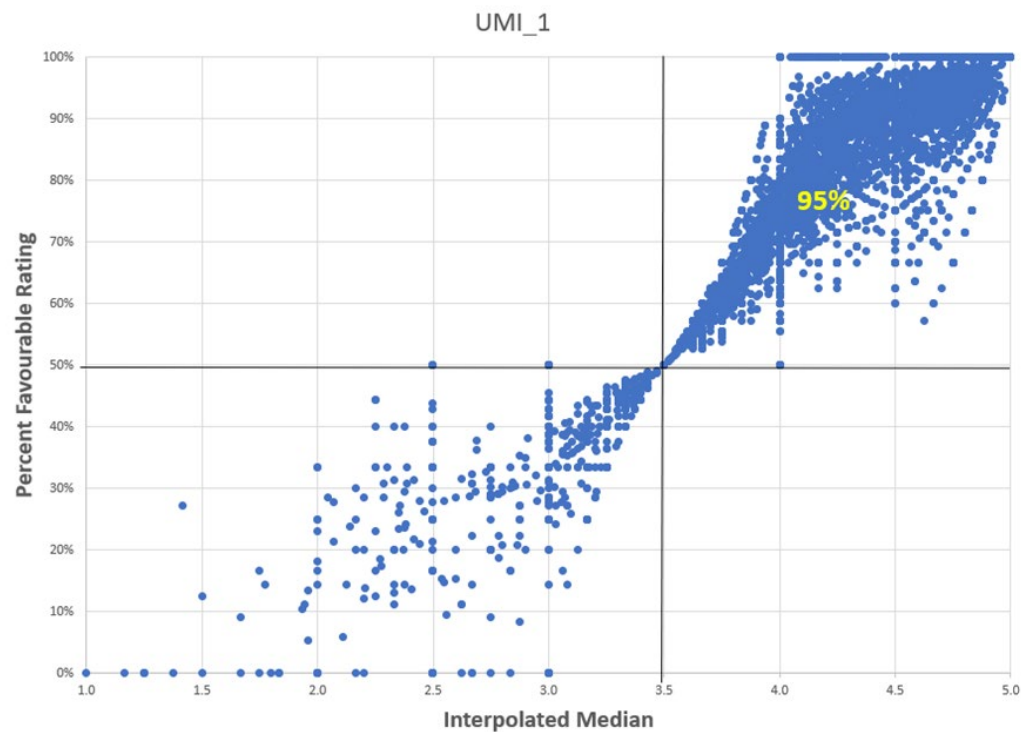
		Variability in Instructor Rating (dispersion)							Total
		0	< 0.2	0.2 - 0.3	0.3 - 0.4	0.4 - 0.55	0.55-0.70	0.7-0.85	
IMedian	Number of Evaluations (% Favourable Rating in Parenthesis)								
< 5.0	33 (100%)	205 (99%)	241 (96%)	170 (91%)	56 (84%)	5 (76%)	1 (75%)		711
< 4.5		6 (98%)	55 (96%)	162 (87%)	177 (79%)	22 (73%)	4 (65%)		426
< 4.0			3 (77%)	28 (69%)	108 (65%)	42 (61%)	7 (56%)		188
< 3.5					12 (40%)	15 (44%)	7 (43%)		34
< 3.0					1 (28%)	5 (22%)	2 (33%)		8
									1,367

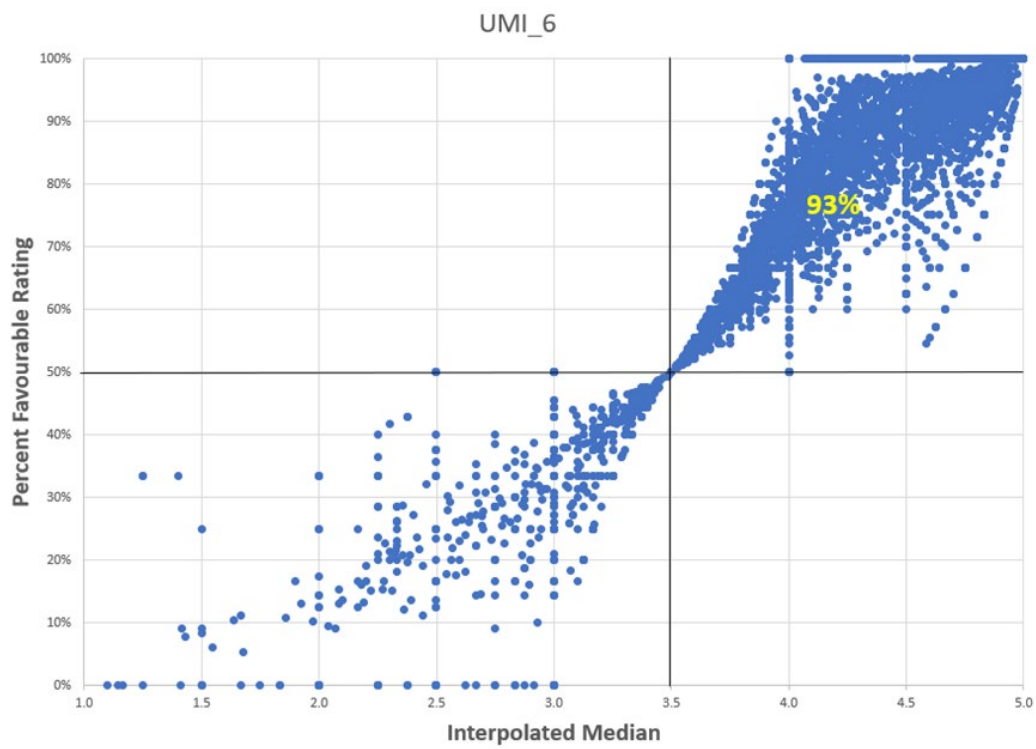
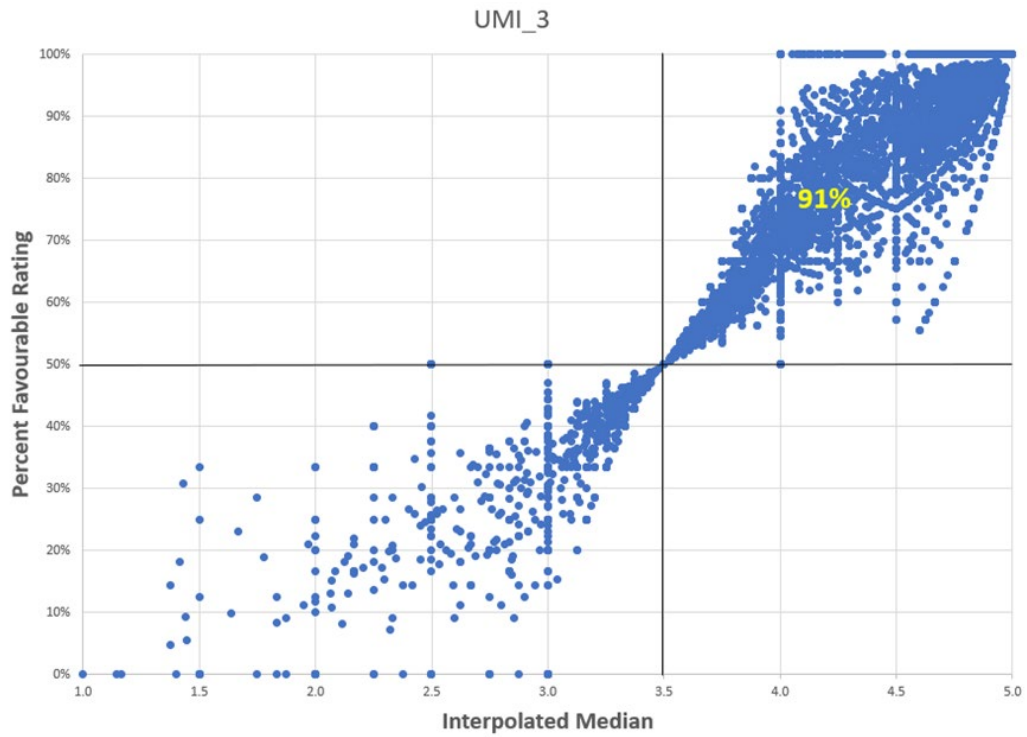
Graphical Depiction of the 2019 Winter Term 2 Instructor Ratings for UMI 5



## APPENDIX D

Graphical depiction of the distribution of the 2019W (both terms) ratings for UMI question 1, 2, 3 and 6.







14 April 2021

**From:** Dr Kate Ross, Registrar

**To:** Vancouver Senate

**Re:** 2021 Student Senate Elections Results

---

Set out below are the results of the 2021 Student Senate Elections.

### **Student Representatives of the Faculties to Senate**

Further to the call for nominations for students of the Vancouver campus to fill the one (1) position for representatives of each Faculty\* on the Vancouver Senate issued on 5 February 2021, thirty (30) valid nominations have been received. Therefore, pursuant to Section 16 of the *University Act*, the following students are elected as representatives of the Faculties on the Vancouver Senate for terms beginning on 1 April 2021 and ending 31 March 2022 and thereafter until successors are elected:

- Laia Shpeller, Faculty of Applied Science
- Emmanuel Cantiller, Faculty of Arts
- Leonard Wang, Faculty of Commerce and Business Administration
- Anisha Sandhu, Faculty of Land and Food Systems
- Dawson Born, Faculty of Medicine
- Sebastian Cooper, Peter A. Allard School of Law
- Kanika Khosla, Faculty of Pharmaceutical Sciences
- Keanna Yu, Faculty of Science

Additionally, pursuant to Section 15 of the *University Act*, the following students are acclaimed as elected as representatives of the Faculties on the Vancouver Senate for terms beginning on 1 April 2021 and ending 31 March 2022 and thereafter until successors are elected:

- Dee Goyal, Faculty of Dentistry
- Xiutong Tony Jiang, Faculty of Forestry

*\*N.B. the Education Student Senator's term runs from 1 October 2020 to 30 September 2021.*

### **Graduate Student Representatives to the Senate**

Further to the call for nominations for graduate students of the Vancouver campus to fill the two (2) positions for representatives of the Faculty of Graduate and Postdoctoral Studies on the Vancouver Senate issued on 5 February 2021, seven (7) valid nominations have been received.



Therefore, pursuant to Section 16 of the University Act, the following graduate students are elected as representatives of the Faculty on the Vancouver Senate for terms beginning on 1 April 2021 and ending 31 March 2022 and thereafter until successors are elected:

- Jackson Schumacher
- Lisa White

### **Student Representatives At-Large to the Senate**

The Student Representative At-Large to the Senate election was conducted by the AMS.

Pursuant to Section 16 of the University Act, the following students are elected as representatives at-large on the Vancouver Senate for terms beginning on 1 April 2021 and ending 31 March 2022 and thereafter until successors are elected:

- Dante Agosti-Moro
- Eshana Bhangu
- Julia Burnham
- Shivani Mehta
- Georgia Yee

### **Student Representatives to the Board of Governors**

The Student Representative to the Board of Governors election was conducted by the AMS.

Pursuant to Section 16 of the University Act, the following students are elected as representatives of students on the Board of Governors for terms beginning on 1 April 2021 and ending 31 March 2022 and thereafter until successors are elected:

- Max Holmes
- Georgia Yee

--

All positions have been filled.