

**University of Waterloo**  
**SENATE EXECUTIVE COMMITTEE**  
**Notice of Meeting**

**Date:** Monday 1 March 2021  
**Time:** 3:30 p.m.  
**Place:** Microsoft Teams Videoconference

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<b>AGENDA</b>	<b>Action</b>
<b>OPEN SESSION</b>	
1. Minutes of the 1 February 2021 Meeting	Decision
2. Business Arising from the Minutes	
3. Draft 22 March 2021 Senate Agenda	Decision
4. Other Business	
<b>CONFIDENTIAL SESSION</b>	
5. Minutes of the 1 February 2021 Meeting	Decision

KJJ/ees  
23 February 2021

Karen Jack  
University Secretary  
Secretary to the Committee

**University of Waterloo**  
**SENATE EXECUTIVE COMMITTEE**  
**Minutes of the 1 February 2021 Meeting**

**Present:** David Billedeau, Dan Brown, Kofi Campbell, Jeff Casello, Joan Coutu, George Freeman, Feridun Hamdullahpur (chair), Karen Jack (secretary), Christiane Lemieux, William Power, Sam Rubin, James Rush, Abbie Simpson, Richard Staines, Johanna Wandel

**1. MINUTES OF THE 4 JANUARY 2021 MEETING**

Members heard a motion to approve the minutes of the 4 January 2021 meeting. Staines and Simpson. Carried unanimously.

**2. BUSINESS ARISING FROM THE MINUTES**

There was no business arising.

**3. DRAFT 22 FEBRUARY 2021 SENATE AGENDA**

The secretary advised that before distribution, a typographical error will be corrected, the Committee Appointments report will be updated, and an addition to the report of the provost regarding an update on the 2020-2021 operating budget will be made. The chair provided members with a brief review of some aspects of the agenda, and members heard a motion to approve it.

Freeman and Simpson.

In discussion: advice that some concerns from the Faculty of Science likely are to be raised about the proposed department name changes in the Faculty of Health.

The question was called and the motion carried unanimously.

**4. OTHER BUSINESS**

There was no other business. The committee briefly discussed some recent activities in the province and at the University, and some of the factors under consideration as the University contemplates fall 2021.

2 February 2021

Karen Jack  
University Secretary

The confidential minutes have been removed.

**University of Waterloo  
SENATE  
Notice of Meeting**

**Date:** Monday 22 March 2021  
**Time:** 3:30 p.m.  
**Place:** Microsoft Teams Videoconference

	<b>OPEN SESSION</b>	<b>Action</b>
3:30	<p><b><u>Consent Agenda</u></b>  <b>Motion:</b> To approve or receive for information by consent items 1-4 below.</p> <ol style="list-style-type: none"> <li>1. Minutes of the 22 February 2021 Meeting</li> <li>2. Reports from Committees and Councils               <ol style="list-style-type: none"> <li>a. Joint Report – Graduate &amp; Research Council and Undergraduate Council</li> <li>b. Graduate &amp; Research Council</li> <li>c. Undergraduate Council</li> </ol> </li> <li>3. Report of the President               <ol style="list-style-type: none"> <li>a. Recognition and Commendation</li> </ol> </li> <li>4. Reports from the Faculties</li> </ol>	<p>Decision</p> <p>Information Information Information</p> <p>Information</p> <p>Information</p>
3:35	<p><b><u>Regular Agenda</u></b>            5. Business Arising from the Minutes</p>	
3:40	<ol style="list-style-type: none"> <li>6. Reports from Teaching Awards Committees               <ol style="list-style-type: none"> <li>a. Amit &amp; Meena Chakma Awards for Exceptional Teaching by a Student Committee*</li> <li>b. Distinguished Teacher Awards Committee*</li> </ol> </li> </ol>	<p>Information</p> <p>Information</p>
3:50	<ol style="list-style-type: none"> <li>7. Presentation – Internationalization at Waterloo, Charmaine Dean, Vice-President Research &amp; International</li> </ol>	<p>Information</p>
4:05	<ol style="list-style-type: none"> <li>8. Report of the President</li> </ol>	<p>Information</p>
4:15	<ol style="list-style-type: none"> <li>9. Q&amp;A with the President</li> </ol>	
4:25	<ol style="list-style-type: none"> <li>10. Reports from Committees and Councils               <ol style="list-style-type: none"> <li>a. Finance Committee                   <ol style="list-style-type: none"> <li>i. Committee Report*</li> <li>ii. Operating Budget Presentation*</li> </ol> </li> <li>b. Undergraduate Council</li> </ol> </li> </ol>	<p>Decision Information Decision</p>
4:45		
4:55	<ol style="list-style-type: none"> <li>11. Report of the Vice-President, Academic &amp; Provost</li> </ol>	<p>Information</p>
5:00	<ol style="list-style-type: none"> <li>12. Report of the Vice-President, Research &amp; International</li> </ol>	<p>Information</p>
5:05	<ol style="list-style-type: none"> <li>13. Other Business</li> </ol>	
	<b>CONFIDENTIAL SESSION</b>	
5:10	<p><b><u>Consent Agenda</u></b>  <b>Motion:</b> To approve or receive for information by consent items 14-15 below.</p>	

	<b>CONFIDENTIAL SESSION</b>	<b>Action</b>
	14. Minutes of the 22 February 2021 Meeting	Decision
	15. Report of the Vice-President, Advancement	
	a. Donor List – 2019/20 Gifts and Pledges \$250,000+	Information
	<b><u>Regular Agenda</u></b>	
5:15	16. Business Arising from the Minutes	
5:20	17. Report from Senate Nominating Committee for Honorary Degrees*	Decision
5:25	18. Report of the President	Information
5:30	19. Other Business	

\*to be distributed

23 February 2021  
KJJ/ees

Karen Jack  
University Secretary  
Secretary to Senate

**University of Waterloo**  
**SENATE**  
**Minutes of the 21 February 2021 Meeting**

**Present:** Sheila Ager, Jean Andrey, Sandra Banks, Lisa Bauer-Leahy, Michael Beauchemin, Kankar Bhattacharya, David Billedeau, Anne Bordeleau, Dan Brown, Carmen Bruni, Kofi Campbell, Jeff Casello, Robyn Clarke, David Clausi, Joan Coutu, Neil Craik, Eric Croiset, Lori Curtis, Charmaine Dean, David DeVidi, Catherine Dong, Fraser Easton, Aiman Fatima, Paul Fieguth, Wendy Fletcher, Cindy Forbes, George Freeman, Martha George, Mark Giesbrecht, Robert Gorbet, Julia Goyal, Kelly Grindrod, David Ha, John Haddock, Feridun Hamdullahpur (chair), Dennis Huber, Natalie Hutchings, Martin Karsten, Sabrina Khandakar, Jennifer Kieffer, Veronica Kitchen, Karen Jack (secretary), Christiane Lemieux, Robert Lemieux, Lili Liu, Kesen Ma, Ellen MacEachen, Blake Madill, Peter Meehan, Teferi Mergo, Ian Milligan, Zoran Miskovic, Barb Moffatt, Graham Murphy, Cathy Newell Kelly, Erin O'Connell, Daniel O'Connor, Troy Osborne, David Perrin, William Power, Neil Randall, Samuel Rubin, James Rush, Max Salman, Emma Schuster, Marcus Shantz, Joanne Shoveller, Abbie Simpson, Sivabal Sivaloganathan, Siva Sivoththaman, Richard Staines, Bruno Tremblay, Sharon Tucker, Twesh Upadhyaya, Cristina Vanin, Johanna Wandel, Paul Ward, Mary Wells, Stan Woo, Nancy Worth, Clarence Woudsma, En-Hui Yang, Samer Zu'Mot

**Guests:** Stacey Acker, Jean Becker, Kathy Becker, Margaret Burnett, Bruce Campbell, Aldo Caputo, Jennifer Coghlin, Donna Ellis, Barbara Forrest, Brian Forrest, Mike Grivicic, Candace Harrington, Narveen Jandu, Ross Johnston, Andrea Kelman, Meagan Lai, Nick Manning, Norah McRae, Dina Meunier, Marina Mourtzakis, Mary Power, Joe Quadrilatero, Chris Read, Ian Rowlands, Andrea Santi, Emily Schroeder, Daniela Seskar-Hencic, Nadia Singh, Alisa Sivak, Allan Starr, Sherri Sutherland, Brandon Sweet, Su-Yin Tan, Mathew Thijssen, Russ Tupling, Chris Wilson-Smith

**Absent:** Mike Ashmore\*, Dominic Barton, Peter Deadman\*, Achim Kempf\*, Sara Marsh, Samantha Meyer\*, Richard Myers\*, Beth Namachchivaya\*

\*regrets

**OPEN SESSION**

The chair welcomed members to the meeting.

**Consent Agenda**

The chair invited the secretary to speak to the annual call for nominations for upcoming vacancies on Senate which she did. Senate heard a motion to approve or receive for information the items on the consent agenda.

Freeman and Milligan.

**1. MINUTES OF THE 18 JANUARY 2021 MEETING**

Senate approved the minutes of the meeting.

**2. REPORTS FROM COMMITTEES AND COUNCILS**

**Undergraduate Council.** Senate received the report for information.

**3. REPORT OF THE PRESIDENT**

**Honorary Degrees & Convocation Speakers.** Senate received the report for information.  
**Recognition and Commendation.** Senate received the report for information.

**4. REPORTS FROM THE FACULTIES**

Senate received the reports for information.

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**5. COMMITTEE APPOINTMENTS**

**Policy 76/Policy 77 Drafting Committee.** Senate heard a motion to approve the following membership on the Policy 76/Policy 77 Drafting Committee: Kate Lawson and Su-Yin Tan as members recommended by FAUW, and David DeVidi and Kevin Hare as members recommended by the President.

Senate heard a motion to approve the following appointments:

**Distinguished Teacher Awards Committee:** Greta Kroeker, as faculty representative, term to 30 April 2021; Ginny Wong and Kylie Myles, as undergraduate student representatives, terms to 31 August 2021; Joseph Varga and Giuseppe Femia, as graduate student representatives, terms to 31 December 2021; Tiffany Bradley, as alumni representative, term to 30 April 2021.

**Amit & Meena Chakma Awards for Exceptional Teaching by a Student Selection Committee:** Emily Arnold, Zurie Campbell, and Stephanie Ye-Mowe as undergraduate student representatives, terms to 31 December 2021; Han Li and Becky Anderson, as graduate student representatives, terms to 31 December 2021.

The question was called and the motion carried unanimously.

**Regular Agenda**

**6. BUSINESS ARISING FROM THE MINUTES**

There was no business arising.

**7. TEACHING PRESENTATION – BLENDED LEARNING INITIATIVE**

Following the chair's remarks about the value of Senate's input on this timely and important subject, DeVidi spoke to the subject of today's presentation being a step forward to a University digital learning strategy. He introduced Su-Yin Tan, teaching fellow from Environment, and Donna Ellis, the director of Centre for Teaching Excellence who informed senators about the "Blended Learning Initiative". Members heard: that it is an enterprise of the University's teaching fellows; a key goal is to learn from the emergency remote teaching experience of 2020; about work being done to determine the right balance between online and in-person components; some supporting data; about examples in the Faculties of Arts and Science; about different models and plans to support course redesign; about activities and discussions underway to enable growth.

In discussion: a suggestion to consider identifying ways to work with community partners; considerations in striking the right balance between delivery methods; the pedagogical drive to find what is beneficial to students and instructors; ways intentional design can help motivate students; a coming survey will help identify innovations across the campus; work being done by the Copyright Advisory Committee.

**8. REPORTS FROM COMMITTEES AND COUNCILS**

**Undergraduate Council.** Senate heard a motion to approve the proposed change to the Doctor of Optometry Program as outlined below, effective 1 September 2022.

DeVidi and Lemieux. Carried unanimously.

**9. REPORT OF THE PRESIDENT**

Referring to his presentation, the president provided senators updates about: campus operations in the red zone (some in-person activities, research, and office activity); student activity on campus (residences, amenities, international student support in light of federal travel rules); the COVID-19 testing centre.

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**10. Q&A PERIOD WITH THE PRESIDENT**

There were no questions.

**11. REPORT OF THE VICE-PRESIDENT, ACADEMIC & PROVOST**

**2020-21 Operating Budget Update.** Rush provided an update on the 2020-21 operating budget and planning for 2021-22. Members heard about some details of how the budget was managed over the course of the year, and that the budget for 2020-21 looks set to be balanced with a small surplus. Rush provided some commentary about income and expenses over the year. With respect to 2021-22 planning, Rush spoke to: the continued emphasis on efficient use of resources and cost containment, impacts of government policy, enrolment management, tuition rate setting, risk mitigation, and strategic resource developments. In response to a question, Rush provided commentary on the history of the University Fund and advised that the expense line reflects some ongoing encumbrances.

**Department Name Change – Kinesiology.** Senate heard a motion to change the name of the Department of Kinesiology to the Department of Kinesiology and Health Sciences.

Liu and Rush.

Liu provided an overview of the rationale for the proposed change and spoke to consultations the Faculty undertook. After Liu reviewed key points of the rationale as provided in the agenda, she advised that she obtained agreement from four of the five other University Faculties with respect to this proposal. In discussion: opposition to the motion from Dean of Science Bob Lemieux; suggestions that a qualifier like “performance” be added to “health sciences”; concerns about the potential for confusion by students; reasons why “performance” is inadequate and, why no qualifier is needed; the University’s obligation to be congruent with professional designation regulations which this proposal addresses; a reminder of the many years that this change has been under consideration and discussion.

The question was called and the motion carried with 58 votes for, 14 votes against, and nine abstentions.

**Department Name Change – School of Public Health and Health Systems.** Senate heard a motion to change the name of the School of Public Health and Health Systems to the School of Public Health Sciences.

Liu and Andrey.

Liu briefly spoke to the rationale and consultation undertaken as provided in the agenda. Senate heard an expression of thanks to Liu and the Faculty for the broad consultation undertaken with students with respect to this proposal.

The question was called and the motion carried with one abstention.

**12. REPORT OF THE VICE PRESIDENT, RESEARCH & INTERNATIONAL**

Senate received the report for information.

**13. OTHER BUSINESS**

There was no other business.



Senate convened in confidential session.

23 February 2021

Karen Jack  
University Secretary

**CONFIDENTIAL SESSION**

The confidential minutes have been removed.

**University of Waterloo**  
**SENATE GRADUATE & RESEARCH COUNCIL**  
**and**  
**SENATE UNDERGRADUATE COUNCIL**  
**Report to Senate**  
**22 March 2021**

Senate Graduate & Research Council (SGRC) met on 8 February 2021 and Senate Undergraduate Council (SUC) met on 9 February 2021. The councils received the following for information and agreed to forward this item to Senate for information as part of the consent agenda.

Further details are available at:

<https://uwaterloo.ca/secretariat/committees-and-councils/senate-undergraduate-council>

<https://uwaterloo.ca/secretariat/committees-and-councils/senate-graduate-research-council>

**FOR INFORMATION**

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**ACADEMIC CALENDAR GUIDELINES SPRING 2021 – TEMPORARY EXCEPTION**

On behalf of Senate, SGRC and SUC received for information revised grade submission rules for the Spring 2021 term. This temporary exception is necessary because the rules as written, create confusion around submission deadlines for online courses offered through CEL and courses being held online because of COVID-19. Please see Attachment 1 for more information.

*/rmw & kw*

Jeff Casello  
Associate Vice-President,  
Graduate Studies and Postdoctoral Affairs

Charmaine Dean  
Vice President,  
Research & International

David DeVidi  
Associate Vice-President, Academic

Senate Graduate and Research Council / Senate Undergraduate Council  
Attachment 1 (Consent)



Graduate Studies and Postdoctoral Affairs  
Waterloo, Ontario, Canada N2L 3G1  
[uwaterloo.ca/graduate-studies](http://uwaterloo.ca/graduate-studies) | [gsoffice@uwaterloo.ca](mailto:gsoffice@uwaterloo.ca)

January 22, 2021

TO: Kathy Winter, Privacy Officer and Assistant University Secretary,  
Senate Graduate and Research Council

FROM: Jeff Casello, Associate Vice-President, Graduate Studies and Postdoctoral Affairs

RE: Regulations

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**Grade Submission – Spring 2021 Exception [for information]**

**Effective date:** For Spring 2021 term only.

**Background and rationale:** Guidelines for grade submission deadlines are approved by Senate along with the set of yearly academic dates. They apply to both undergraduate and graduate courses, though text to be revised only appears in the Undergraduate Calendar.

*Guidelines for Determining Academic Calendar of Dates (Senate approved): Rule #15: Grades due dates for on campus courses are normally scheduled seven days from the date of the final examination. Grades for Online (Centre for Extended Learning) courses that have a scheduled final examination are due on the last day of the grades submission period. Grades for all courses without a scheduled final examination are normally due 14 days after the start of examinations.*

The problem: “Online courses” are no longer defined in the same way they were prior to COVID-19. In the past, “online courses” were CEL courses with in-person exams. Online courses are now offered across all faculties and may include an online exam. Thus, there is confusion about how the grade submission rules apply to the current online courses.

It is proposed that the grade submission rules for spring 2021 be changed as follows as an exception to the guideline (rule #15): Final grades for courses (on-campus and online/remote) with final exams scheduled during the final exam period are normally due seven days from the date of the final exam.

**Date reference chart**

	<b>PRIOR SPRING 2021 DATES</b>	<b>REVISED SPRING 2021 DATES</b>
Grade Submission Period <b>β</b>	July 29, 2021 – August 24, 2021	August 6, 2021 – August 24, 2021
Grades due for courses with a final exam	7 days after the date of the final exam	7 days after the date of the final exam
Grades due for online courses	August 24, 2021	N/A
Grade due for courses without a scheduled final exam	August 11, 2021	August 19, 2021
Grades due for courses with a major assignment due during the final exam period	N/A	August 24, 2021

**University of Waterloo**  
**SENATE GRADUATE & RESEARCH COUNCIL**  
**Report to Senate**  
**22 March 2021**

Senate Graduate & Research Council met on 8 February 2021 and agreed to forward the following items to Senate for information as part of the consent agenda.

Further details are available at: <https://uwaterloo.ca/secretariat/committees-and-councils/senate-graduate-research-council>

**FOR INFORMATION**

**CURRICULAR SUBMISSIONS**

On behalf of Senate, council approved new courses, course revisions, and minor program revisions for the Faculty of Engineering (nanotechnology collaborative program) and the Faculty of Science (nanotechnology collaborative program and physics).

**GRADUATE AWARDS**

On behalf of Senate, council approved the Indigenous and Black Engineering and Technology (IBET) Momentum Fellowship (operating), Barry Goodison Graduate Scholarship for Cryospheric Research (endowment), Ken O’Driscoll Graduate Scholarship in Polymer Engineering/Science (trust).

*/mh kw* Jeff Casello  
Associate Vice-President, Graduate Studies and  
Postdoctoral Affairs

Charmaine Dean  
Vice President, Research & International

**University of Waterloo**  
**SENATE UNDERGRADUATE COUNCIL**  
**Report to Senate**  
**22 March 2021**

Senate Undergraduate Council met on 9 February 2021 and agreed to forward the following items to Senate for information or approval, as noted, in the consent agenda.

Further details are available at: [uwaterloo.ca/secretariat/committees-and-councils/senate-undergraduate-council](http://uwaterloo.ca/secretariat/committees-and-councils/senate-undergraduate-council)

**FOR INFORMATION**

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**ACADEMIC PROGRAM REVIEWS**

**Two-Year Report – Mathematics/Teaching.** Following discussion, Council approved the two-year report on behalf of Senate. See Attachment #1.

**UNDERGRADUATE SCHOLARSHIPS, AWARDS AND BURSARIES**

This report is presented for information. See Attachment #2.

**MINOR PLAN & CURRICULAR MODIFICATIONS**

Council approved the following on behalf of Senate:

- minor plan changes for the faculty of environment (environmental assessment, ecological restoration and rehabilitation).
- course changes for the faculties of arts (history, religious studies); and environment (dean of environment, knowledge integration).
- course inactivations for the faculty of environment (dean of environment, social entrepreneurship).

*/rmw*

David DeVidi  
Associate Vice-President, Academic



# Two-Year Progress Report Mathematics/Teaching (BMath) December 2020

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## Background

The last review of the Mathematics/Teaching (BMath) program was conducted in 2015-2016. The Final Assessment Report was approved by Senate in November 2018. The report pointed out many positive aspects of the program, including the extensive mathematics background of its graduates, in addition to the direct and relevant high school teaching experience gained through co-op placements. The report also offered some recommendations from the external reviewers. In order to implement the recommendations, the goals, objectives and key priorities for the program were reconfirmed through consultation between the CEMC Director, current program personnel, and the Director of Mathematics/Teaching. These include:

- Providing students direct and relevant work-term experience in the teaching profession
- Graduating competent mathematics students who are prepared to be future leaders within the teaching profession
- Exposing students to work-terms in business in industry in order to help inform the students' teaching

## Progress on Implementation Plan

1. Mathematics/Teaching should be continued and succession planning should begin in a manner that allows for an overlap with existing faculty. This will allow existing practices to be understood and relationships with existing schools to be continued.

### Status: **completed**

Details: A new Director for the program was appointed in July 2018. Discussions around interest and availability with current staff provided additional personnel who have been brought in to support the program going forward. The previous Director of the program continues to work within the [Centre for Education in Mathematics and Computing](#) (CEMC), allowing for existing practices to be understood and relationships with existing employers to be continued.

2. Modification of the existing MTHEL course should be considered, such as changing the orientation from teacher/textbook-centered approaches to student-centered approaches.

### Status: **completed**



Details: The course syllabus for MTHEL 206A was revamped in Winter 2019, and the Spring 2019 offering was delivered following the new syllabus. Among other changes, MTHEL 206A now familiarizes students with a variety of teaching techniques, introduces students to current curriculum expectations and evaluation philosophy, and explores successful classroom management strategies.

3. Addition of a second MTHEL course should be considered. For example, bringing the students back together to debrief their placements would be beneficial. In effect, the first MTHEL course is taken, the placements are done, but there is no opportunity for students to reflect on their teaching experience within their cohort. Having a mechanism whereby students could share, and reflect on how their co-op placements connected to the concepts taught in the first MTHEL course would be worthwhile and enrich the educational experience.

**Status: in progress**

Details: We have continued discussions about this possibility. Finding an appropriate term in which to offer a “MTHEL 206B” course so that each Mathematics/Teaching student could fit this course into their schedule is a challenge. The significant benefits may warrant finding a solution to this challenge. Alternatively, we have had discussions about offering an evening seminar as a program milestone in place of a course. As of December 2020, the offering of a “MTHEL 206B” is no longer a consideration. Alternatives such as a program milestone are still being considered.

4. The Teaching option [now known as Mathematics/Teaching] should be advertised as such in the Calendar (on first glance, it currently appears to be available only through the stand-alone Mathematics/Teaching program), so that more students recognize the opportunity to individualize or add extra value to their degree.

**Status: in progress**

Details: The opportunity to combine Mathematics/Teaching with most departmental honours plans in the Faculty of Mathematics is stated as a note within the Calendar. This note will be placed in a more prominent location within the Calendar effective Fall 2021.

5. (i) Further increase in enrolment may be achieved through the use of statistics to show that there is a need for mathematics teachers.  
(ii) In conjunction with this, broadening the placements to clearly include grades 7-10 and/or placements in community colleges may help address a need for more placement options.  
(iii) Lastly, having an arrangement for direct admission into a Faculty of Education





would also provide additional motivation for students to consider adding the teaching option to their degree.

Status: (i) **completed**, (ii) **in progress**, (iii) **in progress**

Details:

- (i) The statistics showing the need for mathematics teachers have been sourced and are being shared with prospective Mathematics/Teaching students at program information sessions.
- (ii) It is necessary to increase the number of students in the program before the number of placements. Having said this, program personnel are in the process of connecting with potential future employers so that when program enrolment increases, the addition of placements may follow efficiently.
- (iii) We agree that direct admission into a Faculty of Education may provide additional motivation for students to choose Mathematics/Teaching. It would however also restrict the possible choices of subjects that students could select as a second teachable. Discussions, both internally and with potential Faculties of Education, will continue.



**Updated Implementation Plan**

	<b>Recommendations</b>	<b>Proposed Actions</b>	<b>Responsibility for Leading and Resourcing (if applicable) the Actions</b>	<b>Timeline for addressing Recommendations</b>
1.	Succession planning			Completed
2.	MTHEL206A course modification			Completed
3.	Addition of MTHEL206B	Continue discussions	Director, Mathematics/ Teaching	Ongoing; decision to be made by end of 2020
4.	Promotion of Mathematics/Teaching in the Course Calendar	Changes to Calendar have been requested	Director, Mathematics/ Teaching	Seeking final approval April 2020, for Fall 2021 Calendar
5.	(i) Use of statistics (ii) Broadening placements (iii) Partnership with a Faculty of Education	(i) Continue to update stats and share with prospective M/T students (ii) Continue to connect with prospective employers (iii) Continue discussions	Director, Mathematics/ Teaching	(i) Completed (ii) Bring on new employers as is needed to meet enrolment growth (iii) Ongoing; decision to be made by end of 2020

The Department Chair/Director, in consultation with the Dean of the Faculty shall be responsible for monitoring the Implementation Plan.



Date of next program review: \_\_\_\_\_ 2022-23  
Date

Signatures of Approval: \_\_\_\_\_  
Chair/Director \_\_\_\_\_ Date 12/12/2019

\_\_\_\_\_  
AFIW Administrative Dean/Head (For AFIW programs only) \_\_\_\_\_ Date  
\_\_\_\_\_  
Faculty Dean \_\_\_\_\_ Date  
Jan 21, 2020

**Note:** AFIW programs fall under the Faculty of ARTS; however, the Dean does not have fiscal control nor authority over staffing and administration of the program.

\_\_\_\_\_  
Associate Vice-President, Academic \_\_\_\_\_ Date  
(For undergraduate and augmented programs) May 26, 2020

\_\_\_\_\_  
Associate Vice-President, Graduate Studies and Postdoctoral Affairs \_\_\_\_\_ Date  
(For graduate and augmented programs)

## Checklist for SUC/SGRC Reviewer Feedback Quality Assurance Office

**Two-Year Progress Report: Math / Teaching**

**Name of Reviewer: Cristina Vanin**

**Date: 1/25/2021**

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### Does the Two-Year Progress Report:

- |  |   |                             |
|--|---|-----------------------------|
| 1. Clearly describe progress achieved on the various action items in the implementation plan?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2. Explain convincingly any circumstances that would have altered the original implementation plan?  | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 3. For items that are behind schedule, propose an amended implementation schedule that is reasonable and credible?   | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| 4. Address significant developments or initiatives that have arisen since the program review process, or that were not contemplated by the program review process? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |

### General Comments

**I appreciate the clear feedback that the program provided to the questions that I raised about the two-year progress report.**

## NEW UNDERGRADUATE SCHOLARSHIPS, AWARDS, and BURSARIES

to be added to the Undergraduate Awards Database

- submitted for February 9, 2021 meeting of Senate Undergraduate Council -

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### ENTRANCE AWARDS

#### **Scott Beauchamp Memorial Bursary**

Two bursaries, valued at \$2,500 each, will be awarded annually to full-time undergraduate students enrolled in Year One of Computer Engineering. Selection will be based on academic achievement (minimum admission average of 80%) combined with demonstrated financial need as determined by the University of Waterloo. To be considered, students must complete the University of Waterloo Entrance Bursary on-line application by April 15. This bursary is made possible by a donation from Susan Beauchamp (sister) and Diane Beauchamp (mother) in memory of Scott Beauchamp (BASc '90, Computer Engineering).

*Method of Financing: annual donation (two-year pledge)*

#### **BlackBerry Scholars Award**

Several renewable awards, valued at up to \$20,000 paid over eight academic terms, will be awarded to Indigenous undergraduate students (a person who self-identifies as First Nations (Status/Non-Status), Metis or Inuit as defined in the Canadian Constitution Act 1982) entering Year One of any full-time degree program at the University of Waterloo. Selection will be based on a combination of academic excellence (minimum 80% admission average) and community involvement through extracurricular and/or volunteer activities. To be considered, students must submit an on-line award application by April 15. Recipients will receive \$2,500 per academic term for up to eight terms (1A-4B). Payments beyond Year One are dependent on maintaining a minimum overall average of 70% and full-time enrolment.

*Method of Financing: annual donation (five-year pledge to cover two cohorts)*

#### **Mike Garvey Entrance Scholarship in Accounting**

A scholarship, valued at up to \$1,200, will be awarded annually to a full-time undergraduate student entering Year One of the Accounting and Financial Management program in the School of Accounting and Finance (SAF) in the Faculty of Arts. Selection is based on academic excellence (minimum 80% admission average) and participation in volunteer activities as assessed through the Admission Information Form. This fund is made possible by a donation from José and Shana Hernandez in honour of Mike Garvey, the 2019 SAF Lifetime Achievement Award winner and a proud Waterloo alumnus, dedicated to advancing the School and University.

*Method of Financing: endowment*

#### **Vitaly Pecherskiy Entrance Award**

One award valued at \$20,000, or two awards valued at \$10,000 each, will be provided to full-time undergraduate students who self-identify as Black or Indigenous and who are enrolled in Year One of the Computer, Management, Mechatronics, Software or Systems Design Engineering program. To be eligible for consideration, candidates must be Canadian citizens or permanent residents. For the purpose of this scholarship, an Indigenous person is a person who self-identifies as First Nations (Status/Non-Status), Métis, or Inuit as defined in the Canadian Constitution Act 1982. Selection will be based on a combination of academic excellence (minimum admission average of 80%) as well as extracurricular and leadership involvement assessed through the Admission Information Form (AIF). Recipients will be encouraged to engage in outreach activities in their community and/or high school to create pathways for future students and additional financial incentives will be provided to support these endeavours. Interested Indigenous candidates may self-identify using the on-line application form or on their university application form through the Ontario University Application Centre. Black students must self-identify using the on-line application form. The on-line application form must be submitted by April 1st. This award is made possible by a donation from Vitaly Pecherskiy and is being provided to increase accessibility to education and create opportunities for underrepresented groups.

*Method of Financing: one-time donation*

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**NEW UNDERGRADUATE SCHOLARSHIPS, AWARDS, and BURSARIES**

**to be added to the Undergraduate Awards Database**

*- submitted for February 9, 2021 meeting of Senate Undergraduate Council -*

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**Kanagampikai Suntharampillai Entrance Bursary**

A bursary, valued at \$2,000, will be awarded annually to a full-time undergraduate woman student enrolled in Year One of the Chemical Engineering program, wherein women are underrepresented. Selection will be based on academic achievement (minimum admission average of 80%) combined with demonstrated financial need as determined by the University of Waterloo. To be considered, students must complete the University of Waterloo Entrance Bursary on-line application by April 15. This fund is made possible by a donation from Jothi (Suntharampillai) Bavan in memory of her late mother Kanagampikai Suntharampillai.

*Method of Financing: annual donation (five-year pledge)*

**AWARDS FOR CURRENT STUDENTS**

**James Barnett Tax Experiential Award**

An award, valued at up to \$1,200, will be provided annually to a full-time undergraduate student enrolled in Year Three or Four of any program in the School of Accounting and Finance in the Faculties of Arts, Mathematics, or Science. Selection is based on academic excellence (minimum 80% cumulative average), combined with active involvement in groups such as the Young Tax Professionals group - a co-curricular program where students participate in activities to gain a deeper understanding of career options in tax, develop technical and practical skills needed, and learn about current issues and specialty areas within the field. This award has a required experiential learning component where the selected student will have an opportunity to work directly with a tax faculty member on a tax education or technical research project during a term, as determined by the faculty member for whom they are working. Interested students should submit an application by August 15 to the Faculty Lead of the Young Tax Professionals group. This fund is made possible by the support of SAF faculty, staff and alumni in honour of Professor James Barnett, former Director of the School of Accounting and Finance.

*Method of Financing: endowment*

**Carey Bissonnette Memorial Second Year Scholarship**

A scholarship, valued at up to \$1,200, will be awarded annually to an undergraduate student in the Department of Chemistry in the Faculty of Science, after the completion of Year One of a Regular program. Selection is based on academic excellence (minimum 80% cumulative average). Carey Bissonnette was the very first lecturer in the Faculty of Science, appointed in 1995. He is remembered for his wisdom, compassion, insight, humour, and most importantly, his passion for education.

*Method of Financing: endowment*

**Janice Del Matto Memorial Award in Creative Writing**

An award, valued at up to \$1,200, is provided annually to a full-time undergraduate student enrolled in Year Two, Three, or Four of the Honours English program with a Creative Writing Specialization in the Faculty of Arts. Selection will be made on the basis of academic achievement (minimum 75% cumulative average) and a sample of creative writing submitted by the applicant. Applications should be submitted to the Administrative Manager in the Department of English Language and Literature by February 1. This fund is made possible by a donation from alumni Jeff Nesbitt (BA, '97) and Tania Del Matto (BES '98, MES '07) in memory of Tania's sister, Janice, who was a passionate and talented creative writer.

*Method of Financing: endowment*

**Konrad Capstone Design Award**

An award, valued at \$2,000, will be provided annually to a student team undertaking a fourth-year capstone design project from Electrical, Computer, Management, Software, or Systems Design Engineering in the Faculty of Engineering. Selection will be based on project proposals that, in the opinion of the selection committee, demonstrate a focus on leveraging digital technology. This includes, but is not limited to, web or mobile applications, artificial intelligence, machine learning, voice or image recognition, or augmented reality/virtual reality to solve a problem. The winning team will have the opportunity to consult with industry mentors from Konrad Group. Interested students should apply through the [Faculty of Engineering's Capstone Design website](#). This fund is made possible by a donation from Konrad Group.

*Method of Financing: annual donation (five-year pledge)*

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**NEW UNDERGRADUATE SCHOLARSHIPS, AWARDS, and BURSARIES**

**to be added to the Undergraduate Awards Database**

*- submitted for February 9, 2021 meeting of Senate Undergraduate Council -*

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**Liu-Kennington Award for the 2SLGBTQ+ Engineering Community**

An award, valued at \$1,000, will be provided annually to a full-time undergraduate student enrolled in Year Two, Three, or Four in any program in the Faculty of Engineering. Selection is based on academic achievement (minimum 70% cumulative average) and positive contributions to the 2SLGBTQ+ community through extracurricular or volunteer involvement. Interested students should submit an on-line application by October 1. This fund is made possible by a donation from Michelle Liu and Allie Kennington to support and celebrate students of the 2SLGBTQ+ community within the Faculty of Engineering.

*Method of Financing: annual donation (ten-year pledge)*

**Kay and Stuart Nicol Scholarship**

A scholarship, valued at \$2,500, will be awarded annually to a full-time undergraduate student enrolled in Year Two, Three, or Four in any program in the Faculty of Mathematics. Selection is based on academic excellence (minimum 80% cumulative average) combined with extracurricular and leadership involvement, etc. Interested students should submit an on-line application by October 15. This fund is made possible by a donation from Heather Nicol (BMath '86) in loving memory of her parents, Kay and Stuart Nicol. They inspired Heather to continue her passion for mathematics and pursue a degree in Computer Science at the University of Waterloo.

*Method of Financing: annual donation (five-year pledge)*

**Lana Paton Women in Finance Scholarship**

A scholarship, valued at up to \$2,000, will be awarded annually to a full-time woman undergraduate student enrolled in Year Three or Four of any program of the School of Accounting and Finance. Selection is based on academic excellence (minimum 80% cumulative average), combined with a demonstrated interest in pursuing a career in finance through work experiences and/or related activities such as finance competitions or the University of Waterloo Student Venture Fund. Interested students should submit an on-line application by October 1. This fund is made possible by a donation from Lana Paton (BMath '93), who hopes to see more women in senior leadership roles in the field of Finance in Canada in the years to come.

*Method of Financing: endowment*

**Kurt and Marianne Strobele Engineering Award**

Two awards, valued at up to \$24,000 each over six academic terms, will be awarded annually to full-time undergraduate students enrolled in Year Two of Chemical, Civil, Computer, Electrical, Mechanical or Software Engineering on the basis of academic excellence (minimum 80% cumulative average), active participation/leadership in extracurricular or volunteer activities, interest in pursuing a consulting type career, and strong communication skills. The value of the scholarship is \$4,000 per term from 2A to 4B provided a cumulative average of 80% is maintained and the recipients remain enrolled in an eligible program. Hatch may also offer the scholarship recipients consideration for a work-term position. Interested students should submit an on-line application by October 1. This fund is made possible by a donation from Hatch, a leading global consulting, engineering technologies, information systems and project and construction management organization in honour of Kurt Strobele, Chairman of Hatch and his wife Marianne Strobele.

*Method of Financing: annual donation (five-year pledge)*

**Talib Actuarial Science Scholarship**

Four scholarships, valued at up to \$5,400 each, will be awarded to outstanding students who are enrolled in Year Three or Four of any Actuarial Science program in the Department of Statistics and Actuarial Science. Selection will be based on academic excellence (minimum 80% cumulative average), combined with leadership and community involvement. Interested students should apply on-line by June 15. This fund is made possible by the generosity of Shams Talib (BMath '94).

*Method of Financing: annual donation (five-year pledge)*

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**NEW UNDERGRADUATE SCHOLARSHIPS, AWARDS, and BURSARIES**

**to be added to the Undergraduate Awards Database**

*- submitted for February 9, 2021 meeting of Senate Undergraduate Council -*

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**Jack Young Memorial Bursary**

A bursary, valued at up to \$2,100, will be awarded annually to a full-time undergraduate student enrolled in Year Three or Four of Chemical Engineering who has a demonstrated financial need as determined by the University of Waterloo and a minimum cumulative average of 75%. To be considered, students must complete the full-time bursary application by October 15. This fund is made possible by a donation from Joseph Chalhoub in memory of his dear friend, Jack Young, to honour Jack's dedication and passion for public service.

*Method of Financing: endowment*

**STUDENT-ATHLETE AWARDS**

**Brandon Moffatt Men's Hockey Excellence Award**

Multiple awards, valued at up to \$3,000 each, are given to members of the varsity men's hockey team. Preference will be given to student-athletes who are enrolled in the Faculty of Engineering, have taken or are currently enrolled in Waterloo course/s related to entrepreneurship, and/or have entrepreneurial aspirations. This award recognizes leadership, athletic talent, and contribution to the Department of Athletics and Recreation, Warriors Men's Hockey, and their community. This fund is made possible by a donation from alumnus Brandon Moffatt (BASc'02).

*Method of Financing: annual donation (four-year pledge)*



**University of Waterloo**  
**SENATE**  
**Report of the President**  
**22 March 2021**

**FOR INFORMATION**

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**Recognition and Commendation**

Professor **Anita Layton** has been named the **2021 Krieger-Nelson Prize** recipient for her exceptional contributions to mathematical research with applications ranging from fluid dynamics to biology and medicine. Professor Layton will receive her award and present a prize lecture during the Canadian Mathematical Society (CMS) Summer Meeting in June 2021. The Krieger-Nelson Prize was inaugurated in 1995 by the CMS to recognize outstanding contributions in the area of mathematical research by a female mathematician. “I am incredibly honoured to be this year’s recipient of the Krieger-Nelson Prize,” Professor Layton said. “Relocating to Waterloo has been tremendously beneficial. I appreciate the University’s commitment to discovery, impact and innovation, and its effort in promoting equity, diversity and inclusion. A special shout out to my group of talented graduate students for motivating me to explore new research directions. Without you, very little would get done.”

Professor Layton has been recognized as a distinguished figure in the applied mathematics research at the interface of mathematical computation and biomedical sciences with a direct impact on clinical health care. She is the author of over 170 publications that include top journals in applied mathematics, physiology, and medicine. The work by Professor Layton has inspired new experimental and clinical studies in the area of renal physiology and associated medical care. Her work has also highlighted the importance of sex differences in mathematical models for biological systems. Overall, she is an outstanding applied mathematician whose impact is vast and truly interdisciplinary.

In addition to groundbreaking work in mathematical biology, she has also published many impactful and well-cited studies in computational fluid dynamics, particularly computational methods for fluid-structure interaction problems. In part, Professor Layton’s expertise on systems of nonlinear advection-diffusion equations coupled with algebraic equations has furnished her long-standing program of research on kidney function, and specifically on the kidney’s ability to concentrate salt and other products in the outflow. Here she has addressed important problems in physiology and medicine and corrected several misconceptions about kidney function that have plagued the textbooks for years. By working with renal physiologists, Professor Layton developed a model of fluid and solute exchange in the kidney that accounts for its concentrating ability. She developed a fast numerical solver that proved to be vital as it allowed for parameter sensitivity studies based on many repetitions of otherwise time-consuming and costly simulations. Professor Layton’s work has inspired new experimental and clinical studies in the area of renal physiology and associated medical care. Her work has also highlighted the importance of sex differences in mathematical models for biological systems.

(adapted from the *Daily Bulletin*, 27 January 2021)

Three of five projects that were recently awarded research grants from the **Desire2Learn Innovation Guild (DIG)** are headed up by Waterloo faculty and staff. The DIG grant program is a brand-new initiative from D2L that is intended to support research projects relating to teaching and learning practice and/or teaching and learning technology.

The Waterloo-led projects are:

- **Exploring Extended Reality (XR) Pedagogical Initiatives at Three Guild Member Universities: An Environmental Scan**  
Lead PI — **Mark Morton**, University of Waterloo  
Co-PI — **Gillian Dabrowski**, University of Waterloo
- **Leadership Skills to Support Experiential Learning for Canadian Engineering Grand Challenges**  
Lead PI — **Christine Moresoli**, University of Waterloo  
Co-PI — **John Donald**, University of Guelph  
Co-PI — **Nadine Ibrahim**, University of Waterloo
- **Understanding Trauma-Informed Pedagogy in Online Education during Turbulent Times**  
Lead PI — **Colleen McMillan**, Renison, University of Waterloo  
Co-PI — **Alice Schmidt Hanbidge**, Renison, University of Waterloo  
Co-PI — **Heather Boynton**, University of Calgary  
Co-PI — **Beth Archer-Kuhn**, University of Calgary  
Co-PI — **Judy Hughes**, University of Manitoba

(adapted from the *Daily Bulletin*, 27 January 2021)

Professor **Nandita Basu** has joined the cohort of **2021-2022 Earth Leadership Program fellows**. Basu, an associate professor, water sustainability and ecohydrology in Earth and Environmental Sciences, is one of 21 members of the North American cohort of the Earth Leadership Program, the global successor to the renowned Leopold Leadership Program, now held in partnership with Future Earth. Basu studies the role of humans play in modifying water availability and quality through changing land use and climate, providing innovative solutions to water sustainability challenges.

The Earth Leadership Program provides outstanding academic researchers with the skills, approaches, and theoretical frameworks for catalyzing change to address the world's most pressing sustainability challenges, emphasizing new forms of individual and collective leadership. The program enables scientists to work collaboratively with diverse stakeholders and become agents of change within and beyond their universities. The Earth Leadership Program's fellowship training model is built around a collaborative approach that values co-design with diverse stakeholders, and prepares participants to develop and execute transdisciplinary projects. As fellows, the cohort first comes together for a retreat training session that focuses on leadership skills, community-building, and personal reflection. The fellows then spend a year practicing and applying their new knowledge and skills. The following June, the fellows reconvene in a final session to integrate their learning from the practice year, learn new tools, and articulate to each other their refined visions for knowledge to impact.

(adapted from the *Daily Bulletin*, 4 February 2021)

University Professor **Ming Li** has received the **2020 Lifetime Achievement Award in Computer Science from CS-Can|Info-Can**, the non-profit professional society dedicated to representing all aspects of computer science and the interests of the discipline across the nation. Conferred annually since 2014, the prestigious lifetime achievement award recognizes faculty members in departments, schools and faculties of computer science who have made outstanding and sustained achievement in research, teaching and service. Li is known for his fundamental contributions to Kolmogorov complexity, bioinformatics, machine learning theory, and analysis of algorithms.

“Congratulations to Ming,” said Raouf Boutaba, Professor and Director of the David R. Cheriton School of Computer Science. “Ming is a pioneer in Kolmogorov complexity, which has laid the foundation for a modern information theory. He is also a pioneer in computational biology, having introduced both algorithmic ideas into the field as well as demonstrated how computer scientists can contribute to real-world problems from protein sequencing to develop novel treatments for cancer to analyzing DNA sequencing data for studies in evolutionary biology.”

Li is the eighth faculty member in the Cheriton School of Computer Science to receive a Lifetime Achievement Award from CS-Can|Info-Can. Previous recipients are University Professor M. Tamer Özsu (2018 recipient), Distinguished Professor Emeritus Don Cowan (2017 recipient), Professor Emeritus Ric Holt (2017 recipient), Distinguished Professor Emeritus Janusz Brzozowski (2016 recipient), University Professor J. Ian Munro (2016 recipient), Distinguished Professor Emeritus Alan George (2015 recipient), and Distinguished Professor Emeritus Frank Tompa (2015 recipient).

Li completed his PhD at Cornell University in 1985, followed by a postdoctoral fellowship at Harvard. In 1988 he joined what was then the Department of Computer Science at the University of Waterloo. Li received the prestigious E.W.R. Steacie Memorial Fellowship in 1996. He was named a University Professor by the University of Waterloo in 2009 and won the Killam Prize in 2010 for his contributions in computer science. He is the Canada Research Chair in Bioinformatics, and a Fellow of the Royal Society of Canada, Fellow of the Association for Computing Machinery, and Fellow of the Institute of Electrical and Electronics Engineers.

(adapted from the *Daily Bulletin*, 5 February 2021)

Kinesiology Professor **Kaylena Ehgoetz Martens** has received a **New Investigator Award from Parkinson Canada**, worth \$90,000 over two years. Ehgoetz Martens, a neuroscientist, will further study our understanding of how anxiety contributes to freezing of gait in order to develop technological solutions to predict freezing in advance, when patients are in their home settings. “Freezing of gait is one of the most debilitating clinical symptoms of Parkinson’s disease that embodies this emotional-motor interaction,” Ehgoetz Martens said. “This award will allow me to continue the momentum that we have gained in understanding the underlying mechanisms of freezing of gait. In turn, we hope to uncover novel and more effective ways to rehabilitate or treat freezing of gait, which greatly impacts mobility and quality of life for people living with Parkinson’s disease.”

Ehgoetz Martens has been studying the role anxiety plays in the freezing of gait for the past decade, completing graduate studies at Waterloo, followed by postdoctoral training in Sydney, Australia. She returned to Waterloo in July 2019 as an assistant professor and continues to study how the brain controls movement and how this process fails with disease. Ehgoetz Martens’ research combines movement kinematics, functional neuroimaging, psychophysiology and cognitive neuroscience to uncover the neural basis of gait and cognitive-emotional interactions in health and disease.

Her research project with Parkinson Canada will formally start in October, with the end goal to determine whether different sub-types of freezing of gait exist, and to provide recommendations for cognitive strategies that will help alleviate the issue. This research will be conducted in collaboration with Jen Boger in Systems Engineering, Arash Arami in Mechanical and Mechatronics Engineering and George Shaker in Electrical and Computer Engineering. The Centre for Bioengineering and Biotechnology helped facilitate these collaborations for this funded research.

(adapted from the *Daily Bulletin*, 11 February 2021)

Mathematics Professor **William Slofstra** credits the University of Waterloo's collaborative environment for him receiving a **2021 Sloan Research Fellowship**. The pure mathematician is keen to use the monetary prize that comes with the fellowship to enhance the supportive atmosphere he has benefited from at Waterloo. "It's great to be recognized by the Alfred P. Sloan Foundation because I put a lot of work into my research," says Slofstra, who is also a member of Waterloo's Institute for Quantum Computing. "Receiving this fellowship is a recognition of the kind of environment that's created at Waterloo where research is supported. It's an environment where you can talk to other researchers, there's time to do research, and great students to speak with about their work."

The Sloan Research Fellowship, which has been awarded annually since 1955, honours U.S. and Canadian researchers whose creativity, innovation, and research accomplishments make them stand out as the next generation of scientific leaders. Open to scholars in eight scientific and technical fields — chemistry, computational and evolutionary molecular biology, computer science, Earth system science, economics, mathematics, neuroscience, and physics — the Sloan Research Fellowships are awarded in close coordination with the scientific community. Candidates must be nominated by their fellow scientists and winners are selected by independent panels of senior scholars based on a candidate's research accomplishments, creativity and potential to become a leader in their field. More than 1,000 researchers are nominated each year for 128 fellowship slots. Winners receive a two-year, \$75,000 fellowship, which fellows can spend to advance their research.

Slofstra's most significant research has been on the mathematical foundations of quantum information theory and especially the mathematics concerning the Tsirelson conjectures and the reformulation of the Connes Embedding Problem in terms of joint conditional probability densities. Slofstra, in 2016, was the first to prove that some of Tsirelson's mathematical models yielded different sets of joint quantum probability densities. He has also used his work to show the remarkable result that certain problems in quantum theory are undecidable. He did this by demonstrating that his constructions allowed him to reduce certain problems in quantum theory to the mathematics of groups of symmetries. Slofstra's work has been continued by others, who have shown separations between other sets of joint quantum probability densities. A team of computer scientists in a lauded work in 2020 showed the last remaining pair of Tsirelson's mathematical models were distinct, resolving the Connes embedding problem.

(adapted from the *Daily Bulletin*, 19 February 2021)

**UNIVERSITY OF WATERLOO**  
**REPORT OF THE DEAN OF THE FACULTY OF ARTS TO SENATE**  
**March 22, 2021**

**FOR INFORMATION**

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**A. APPOINTMENTS**

**Adjunct Appointments – Miscellaneous (research, consultations, etc.)**

**GLENCROSS, Bonnie**, Department of Anthropology, February 1, 2021- August 31, 2023

**LEMPHERS, Nathan**, Department of Political Science, December 1, 2020-Dec. 31, 2023

**B. ADMINISTRATIVE APPOINTMENTS**

**LIEBSCHER, Grit**, Professor, Acting Chair, Department of Communication Arts, February 1, 2021 to August 31, 2021

**C. SABBATICAL LEAVES**

**For approval by the Board of Governors:**

**ILCAN, Suzan**, Professor, Sociology & Legal Studies, September 1, 2022 to August 31, 2023, twelve months at 85% of salary.

**Approved by the Board of Governors**

**MACLEOD, Colin**, Professor, Department of Psychology, May 1, 2021 to April 30, 2022, twelve months at full salary.

**VETZAL Ken**, Associate Professor, School of Accounting & Finance, May 1, 2021 to April 30, 2022, twelve months at full salary.

**VITALIS, Adam**, Assistant Professor, School of Accounting & Finance, May 1, 2021 to October 31, 2021, six months at full salary.

**SABBATICAL LEAVE – Cancelled**

**GROSSMAN, Igor**, Professor, Department of Psychology, January 1, 2021 to June 30, 2021, six months leave at 85% salary.

**Change in Dates**

**LIEBSCHER, Grit**. Professor, Department of Germanic & Slavic Studies *from* September 1, 2020 to August 31, 2021 *to* September 1, 2020 to February 28, 2021.



Sheila Ager  
 Dean, Faculty of Arts

**UNIVERSITY OF WATERLOO**  
**REPORT OF THE DEAN OF ENGINEERING TO SENATE**  
**March 22, 2021**

**FOR INFORMATION**

**A. *APPOINTMENTS***

**Probationary Term Appointment**

**PANT, Yash Vardhan**, Assistant Professor, Department of Electrical and Computer Engineering, July 1, 2021 – June 30, 2024. PhD, Electrical Engineering, University of Pennsylvania, Philadelphia, Pennsylvania, 2019; MSc, Electrical Engineering, University of Pennsylvania, Philadelphia, Pennsylvania, 2012; B.Tech, Electronics and Telecom. Engineering, College of Engineering Roorkee, India, 2010. Dr. Pant was a Postdoctoral Fellow at Department of Electrical and Computer Science, University of California, Berkeley; and received his PhD in Electrical Engineering from University of Pennsylvania in 2019. His research and teaching interests are on robust and reliable autonomous Cyber-Physical System, machine learning and optimization.

**Definite-Term Appointment**

**POURMOHAMMADALI, Homeyra**, Lecturer, Department of Systems Design Engineering, January 1, 2021 – December 31, 2021. PhD, Mechanical and Mechatronics Engineering, University of Waterloo, Waterloo, ON, 2014; MSc, Mechanical and Mechatronics Engineering, University of Waterloo, Waterloo, ON, 2007; Certificate Program, Systems Analyst, (1-year), Conestoga College, Waterloo, ON, 2002; BSc, Mechanical Engineering, Amirkabir University of Technology (AUT), Tehran, Iran, 1997. Dr. Homeyra POURMOHAMMADALI will join the Department of Systems Design Engineering as a full-time lecturer from January 1, 2021 to December 31, 2021. She brings 11 years of teaching experience in engineering courses to undergraduates/graduates at the University of Waterloo (UW). She has incorporated co-op and interdisciplinary culture and spirit into different aspects of her teaching which fit well with the department. Her teaching core engineering courses such as Dynamics, Numerical Methods, Mathematics and Programming is important to provide consistent robust remote learning for our students this year. In her recent positions Homeyra has been very successful in the online environment.

**Definite-Term Reappointment**

**MEUNIER, Sarah**, Lecturer, Department of Chemical Engineering, May 1, 2021 – April 30, 2024. PhD, Chemical Engineering, University of Waterloo, Waterloo ON, 2013; MSc, Chemical Engineering, University of Ottawa, Ottawa, ON, 2006; BSc, Chemical Engineering, (Coop), University of Ottawa, Ottawa, ON, 2004; BSc, Computing Technology, University of Ottawa, Ottawa, ON, 2004.

**Visiting Appointments**

**AHMADI, NASAB, Navid**, Scholar, Department of Chemical Engineering, September 1, 2021 – February 28, 2022.

**CHEKINI, Mahshid**, Researcher, Department of Chemical Engineering, February 1, 2021 – January 31, 2022.

**GRISHKEWICH, Nathan**, Researcher, Department of Chemical Engineering, February 1, 2021 – January 31, 2022.

**HAN, Xiao Xia**, Scholar, Department of Chemical Engineering, January 1, 2021 – December 31, 2021.

**JORENTE GRANITO, Camila**, Scholar, Department of Chemical Engineering, July 1, 2021 - December 28, 2021.

**SAEEDI, Behzad**, Researcher, Department of Civil and Environmental Engineering, February 15, 2021 – February 14, 2022.

**ZHANG, Naiji**, Researcher, Department of Civil and Environmental Engineering, September 1, 2021 – August 31, 2022.

**ZHANG, Xiaorong**, Scholar, Department of Chemical Engineering, January 1, 2021 – December 31, 2021.

**Adjunct Appointments**

Graduate Supervision and Research

**de FARIA, Alfredo**, Professor, Department of Mechanical and Mechatronics Engineering, January 1, 2021- December 31, 2023.

**IRANNEJAD, Mehrdad**, Assistant Professor, Department of Mechanical and Mechatronics Engineering, January 1, 2021 – December 31, 2023.

**Adjunct Reappointments**

Graduate Supervision and Research

**GALES, John**, Assistant Professor, Department of Mechanical and Mechatronics Engineering, February 1, 2021 – January 31, 2024.

Mary Wells

Mary A. Wells, Dean  
Faculty of Engineering

**University of Waterloo**  
**REPORT OF THE DEAN OF ENVIRONMENT TO SENATE**  
**March 22, 2021**

**FOR INFORMATION**

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**A. APPOINTMENTS**

**Tenure**

**GARRICK, Dustin**, Associate Professor, School of Environment, Resources and Sustainability, July 1, 2021. PhD University of Arizona 2010; MPA Columbia University 2003; BA University of Texas 2001; Dr. Garrick brings a strong publication record of research with international scope, outreach and vision. His appointment results from a search for an Exceptional Scholar in Water and Global Environmental Change that was conducted through the Water Institute. The position seeks to address the societal value of water and the integrated analysis of the socioeconomic, institutional and cultural determinants of water usage and water resources management, in support of innovative water governance and policy systems. Dr. Garrick demonstrated an impressive philosophy on graduate supervision, has experience supervising doctoral and masters level students and is expected to attract top-level graduate students and post-doctoral fellows.

**Definite Term**

**ESMAIL, Shefaza**, Lecturer, School of Environment, Resources and Sustainability, September 1, 2021 to August 31, 2022. PhD Student University of Waterloo 2015-present; MSc Royal Military College 2013; B.Eng. McGill University 2011.

**Adjunct Appointments**

*Graduate Supervision and Research*

**KETCHESON, Scott**, Assistant Professor, Department of Geography and Environmental Management, May 1, 2021 to December 31, 2025.

**KURUCZ, Elizabeth**, Associate Professor, Dean of Environment Office, January 1, 2021 to December 31, 2024.

**SI, Zhenzhong**, Assistant Professor, Department of Geography and Environmental Management, March 1, 2021 to February 29, 2024.

*Graduate Supervision*

**BROWN, Andrea**, Associate Professor, Department of Geography and Environmental Management, May 1, 2021 to April 30, 2022.

**CHAPMAN, Michael**, Professor, Department of Geography and Environmental Management, February 1, 2021 to December 31, 2024.

**COLE, Jason**, Assistant Professor, Department of Geography and Environmental Management, January 1, 2021 to December 31, 2023.

**RILEY, Liam**, Assistant Professor, Department of Geography and Environmental Management, May 1, 2021 to April 30, 2022.

*Research*

**ABERNATHY, Paivi**, Assistant Professor, School of Environment, Resources and Sustainability, January 1, 2020 to December 31, 2023.



**ABRAHAM, John**, Assistant Professor, School of Environment, Enterprise and Development, February 1, 2021 to January 31, 2024.

*Other*

**CARDWELL, Francesca**, Lecturer, Department of Geography and Environmental Management, January 1, 2021 to August 31, 2021.

**MITCHELL, William Bruce**, Professor, Department of Geography and Environmental Management, November 1, 2021 to December 31, 2024.

**Graduate Students Appointed as Part-Time Lecturers**

*Instruction*

**COOPER, Kira**, Lecturer, School of Environment, Resources and Sustainability, May 1, 2021 to August 31, 2021.

**B. ADMINISTRATIVE REAPPOINTMENTS**

**DEADMAN, Peter**, Interim Associate Dean, Graduate Studies, January 1, 2021 to August 31, 2021.

**SINGH, Simron**, Associate Dean, Graduate Studies, September 1, 2021 to December 31, 2022.

**C. SABBATICAL LEAVES**

*Approved by the Board of Governors*

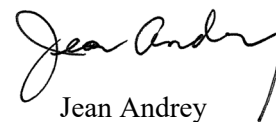
**BARRY, Janice**, Assistant Professor, School of Planning, May 1, 2021 to October 31, 2021 at 100% salary.

**DRESCHER, Michael**, Assistant Professor, School of Planning, March 1, 2021 to August 31, 2021 at 100% salary.

**HABIB, Komal**, Assistant Professor, School of Environment, Enterprise and Development, March 1, 2021 to August 31, 2021 at 100% salary.

**OELBERMANN, Maren**, Assistant Professor, School of Environment, Resources and Sustainability, July 1, 2021 to December 31, 2021 at 100% salary.

**SCOTT, Dan**, Professor, Department of Geography and Environmental Management, September 1, 2021 to August 31, 2022 at 98.9% salary.



Jean Andrey  
Dean

**University of Waterloo**  
**REPORT OF THE DEAN OF FACULTY OF HEALTH TO SENATE**  
**March 22, 2021**

**FOR INFORMATION**

**A. APPOINTMENTS**

**Probationary Term Reappointments**

**DODD, Warren**, Assistant Professor, School of Public Health and Health Systems, July 1, 2021 – June 30, 2024. [Honours BA, International Development, University of Guelph; 2011, PhD, Population Medicine & International Development Studies, University of Guelph, 2016]

**LOPEZ, Kimberly**, Assistant Professor, Department of Recreation and Leisure Studies, July 1, 2021 – June 30, 2024. [PhD, Recreation and Leisure Studies, University of Waterloo, 2017; MA, Recreation and Leisure Studies, University of Waterloo, 2012; Ontario Graduate Certificate in Therapeutic Recreation, Georgian College, Orillia, ON, 2009; Honours Bachelor of Science, Integrative Biology, Psychology, University of Toronto, 2008]

**Definite Term Reappointment**

**YESSIS, Jennifer**, Associate Professor, School of Public Health and Health Systems, May 1, 2021 – April 30, 2022.

**Adjunct Appointment**

*Graduate Supervision and Research*

**BEAUCHAMP, Marla**, M.D., Department of Kinesiology, April 1, 2021 – March 31, 2023.

*Graduate Supervision*

**JOPPE, Marion**, Professor, Department of Recreation and Leisure Studies, March 1, 2021 – June 30, 2022.

**RICHMOND, Sarah**, Assistant Professor, School of Public Health and Health Systems, March 1, 2021 – February 28, 2023.

**Cross Appointment**

**MOCK, Steven**, Associate Professor, Department of Recreation and Leisure Studies to School of Public Health and Health Systems, February 1, 2021 – January 31, 2026.

**Postdoctoral Appointment**

**THOMSON, Sherri**, Department of Kinesiology, February 1, 2021 – January 31, 2022.

**Change in Postdoctoral Appointment**

**AMELARD, Robert**, February 1, 2021 to August 31, 2021 at 20% salary.

**EAST, Katherine**, School of Public Health and Health Systems, March 1, 2021 – May 31, 2021 at 50% salary.

**Postdoctoral Reappointment**

**AZAD KHANEGHAH, Peyman**, Faculty of Health, March 1, 2021 – May 31, 2021.



**Lili Liu, Dean  
Faculty of Health**

**University of Waterloo**  
**REPORT OF THE DEAN OF MATHEMATICS TO SENATE**  
**March 22, 2021**

**FOR INFORMATION**

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**A. APPOINTMENTS (for approval by the Board of Governors)**

**Continuing Appointments**

**ADCOCK, James**, Lecturer, Dept. of Statistics and Actuarial Science, July 1, 2021.

**GARBARY, Robert**, Lecturer, Office of the Dean, July 1, 2021.

**HAMILTON, Jordan**, Lecturer, Office of the Dean, July 1, 2021.

**SAHKNINI, Victoria**, Lecturer, David R. Cheriton School of Computer Science, July 1, 2021.

**Probationary-Term Reappointments**

**BEN-DAVID, Shalev**, Assistant Professor, David R. Cheriton School of Computer Science, July 1, 2021 – June 30, 2024.

**Definite Term - Reappointments**

**MADILL, Blake**, Lecturer, Dept. of Pure Mathematics, September 1, 2021 – August 31, 2024.

**VINETTE, Francine**, Lecturer, Office of the Dean, September 1, 2021 – August 31, 2022.

**Visiting Appointments**

**SHI, Huiming**, Research Associate, David R. Cheriton School of Computer Science, February 8, 2021 – July 7, 2021.

**XU, Wei** (Ryerson University), Lecturer, Office of the Dean, February 1, 2021 – June 30, 2021.

**ZENG, Xiangyuan**, Research Associate, David R. Cheriton School of Computer Science, May 1, 2021 – April 30, 2022.

**ZHONG, Jiancheng** (Hunan Normal University), Associate Professor, David R. Cheriton School of Computer Science, June 1, 2021 – May 31, 2022.

**Adjunct Appointments**

**Grad Committee**

**MELNIK, Roderick** (Wilfrid Laurier University), Professor, Dept. of Applied Mathematics, January 1, 2021 – December 31, 2023.

**SANITA, Laura** (Eindhoven University of Technology), Associate Professor, Dept. of Combinatorics and Optimization, February 1, 2021 – June 30, 2024.

**Graduate Students appointed as Part-time Lecturers**

**MAZMUDAR, Miti**, David R. Cheriton School of Computer Science, May 1, 2021 – August 31, 2021.

**Postdoctoral Fellows appointed as Part-time Lecturers**

**RAFIEE SEVYERI, Leili**, David R. Cheriton School of Computer Science, January 1, 2021 – December 31, 2022.

**B. RESIGNATIONS**

**SANITA, Laura**, Associate Professor, Dept. of Combinatorics & Optimization, effective February 1, 2021.

**C. SABBATICALS** (to be approved by the Board of Governors)

**LANK, Edward**, Professor, David R. Cheriton School of Computer Science, November 1, 2021 – April 30, 2022, with 85% salary. This is an early sabbatical.

**MOOSA, Rahim**, Professor, Dept. of Pure Mathematics, May 1, 2021 – April 30, 2022 with 85% salary.

**D. SPECIAL LEAVE**

**LANK, Edward**, Professor, David R. Cheriton School of Computer Science, November 1, 2022 – April 30, 2023. This is an unpaid leave.



Mark Giesbrecht  
Dean

**UNIVERSITY OF WATERLOO**  
**REPORT OF THE DEAN OF SCIENCE TO SENATE**  
**March 22, 2021**

**For information:**

**A. APPOINTMENTS**

**Definite Term Appointment – Full-Time**

**CONIGLIO, Mario**, Professor, Department of Earth and Environmental Sciences, May 1, 2022 to June 30, 2025. [B.Sc., McGill University (1978); M.Sc., University of Manitoba (1981); Ph.D., Memorial University (1985).] Dr. Coniglio is assuming the role of Department Chair in Earth and Environmental Sciences as of July 1, 2021. His retirement date is set for April 30, 2022; therefore, he is being appointed in a definite term role from May 1, 2022 until the end of his term as Chair.

**Adjunct Appointments**

**Graduate Supervision**

**CULP, Joseph M.**, Associate Professor, Department of Biology, February 1, 2021 to June 30, 2023.

**NEFF, Bryan D.**, Professor, Department of Biology, March 1, 2021 to June 30, 2024.

**Adjunct Reappointments**

**Graduate Supervision**

**DEVITO, Kevin**, Professor, Department of Biology, February 1, 2021 to June 30, 2023.

**Graduate Supervision and Research**

**GU, Frank**, Professor, School of Optometry and Vision Science, February 1, 2021 to January 31, 2024.

**HEATH, Daniel D.**, Professor, Department of Biology, April 1, 2021 to June 30, 2023.

**LUENSMANN, Doerte**, Associate Professor, School of Optometry and Vision Science, March 1, 2021 to February 29, 2024.

**SCHULZE, Marc-Matthias**, Associate Professor, School of Optometry and Vision Science, March 1, 2021 to February 29, 2024.

**WOO, George**, (Professor Emeritus) Professor, School of Optometry and Vision Science, February 1, 2021 to January 31, 2024.

**Cross Appointments**

**MAJEDI, Hamed**, Professor, Department of Electrical and Computer Engineering, cross appointed to Department of Physics and Astronomy, October 1, 2020 to September 30, 2023.

**Special Appointments****Undergraduate Instruction**

**VOS, Janessa**, Lecturer, School of Optometry and Vision Science, January 1, 2021 to April 30, 2021.

**Special Reappointments****Undergraduate Instruction**

**RICCI, Olivia**, Lecturer, School of Optometry and Vision Science, February 1, 2021 to May 31, 2021.

**YEUNG, Debby**, Lecturer, School of Optometry and Vision Science, January 1, 2021 to April 30, 2021.

**B. ADMINISTRATIVE APPOINTMENTS**

**CONIGLIO, Mario**, Chair, Department of Earth and Environmental Sciences, July 1, 2021 to June 30, 2024.

**LIN, Shoufa**, Associate Chair, Graduate Studies, Department of Earth and Environmental Sciences, February 1, 2021 to January 31, 2024.

**ADMINISTRATIVE REAPPOINTMENTS**

**ENDRES, Anthony**, Associate Chair, Undergraduate Studies, Department of Earth and Environmental Sciences, May 1, 2021 to April 30, 2022.

**MOFFATT, Barbara**, Associate Dean, Student Relations, Faculty of Science, September 1, 2021 to December 31, 2021.

**ROSS, Martin**, Associate Chair, Graduate Studies, Department of Earth and Environmental Sciences, January 1, 2021 to January 31, 2021.

**C. RETIREMENT**

**MIKKELSEN, Susan**, Professor, Department of Chemistry, effective January 1, 2021.

**D. DEATH**

**SORBARA, Luigina (Gina)**, Professor, School of Optometry, February 10, 2021.

**FOR APPROVAL BY THE BOARD OF GOVERNORS**

E. ***SABBATICAL***

**HOVIS, Jeffrey**, Associate Professor, School of Optometry and Vision Science, Split  
Sabbatical, May 1, 2021 to December 31, 2021, and September 1, 2022 to December 31, 2022  
100% salary arrangement.



R.P. Lemieux  
Dean



**University of Waterloo**  
**SENATE UNDERGRADUATE COUNCIL**  
**Report to Senate**  
**22 March 2021**

Senate Undergraduate Council met on 9 February 2021 and agreed to forward the following items to Senate for approval in the regular agenda.

Further details are available: <https://uwaterloo.ca/secretariat/committees-and-councils/senate-undergraduate-council>

**FOR APPROVAL**

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**Motion:**

Whereas in 2015 Deans Council endorsed the proposition that all undergraduate students will have achieved communications outcomes in comprehension, conceptualization, and contextualization, ideally, at the end of their first year of study at the University of Waterloo, that Senate endorse:

1. the development of calendar language that reflects the Undergraduate Communications Outcomes (UCO) as an institutional academic priority and that such language be brought forward for approval through appropriate academic channels; and
2. the implementation of a process for reviewing and approving new or revised UCO curricular items, substantially as outlined in attachment 1.

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**Rationale:**

The UCO are, de facto, an academic priority of the University. Appropriate calendar language to that effect will clarify this important fact for students and prospective students, will clarify expectations for curriculum committees considering changes, and facilitate consistent academic decision making. The intention is for the UCO Group (as described below) to develop this language, and for this language to proceed through consultation and approval processes for common degree requirements.

In 2012, Senate endorsed a white paper titled “The Task Force on Support for English Language Competency Development at the University of Waterloo: Final Report” (aka “The Stublely Report”) which stated: *“English language competency, simply put, is crucial for University of Waterloo students. It underpins every task that the university requires of them, providing the foundation they need for deep learning. Likewise, language and communication skills are vital in the workplace, whether for students on a co-op work term or for graduates pursuing their careers. Moreover, the university’s reputation for excellence rests largely on the performance of its students when they move onto careers or higher learning.”* A variety of initiatives and projects carried out in response to the recommendations in that report led to the development of several approaches to achieving the UCO by first year students across the University, and eventually to the Deans Council endorsement referred to above. More details of that commitment can be found [here](#).

By 2019, while there was general satisfaction with the quality of the various UCO courses on campus, it was precarious due to the lack of well-defined financial arrangements, and a lack of clarity about academic governance and financial oversight. As a result, a project was undertaken to develop a sustainable financial and governance model, and to socialize and gain acceptance for the model from stakeholders, including but without limitation academic units and instructors delivering UCO courses, Deans, and the Provost, both with respect to finances and academic governance.

The model that was developed presumes that the UCO are an institutional priority, and as such receive centralized financial support to enable courses to be taught in pedagogically appropriate ways. In particular, from 2021 onwards, it identifies a preferred model in which courses can be taught in sections with a specified average

enrolment, by relevant subject specialists, as eligible for additional central financial support.

An assumption for the launch of the model is that all existing UCO courses satisfactorily fulfil the UCO, so an adaptation for processes involved in academic approvals applies only to **changes**. The intention of the model described here is to **recognize that academic changes can have both academic and resource implications**. As a pan-university initiative, it is appropriate that a group with relevant expertise evaluate whether the changed courses satisfactorily achieve the UCO. Since much of this teaching crosses Faculty boundaries, it is appropriate, in light of the need to plan (e.g. with respect to hiring faculty members), that the financial implications of proposed changes also be subject to evaluation.

The model described here does not change academic governance by Senate or its councils. All changes to UCO will proceed through the usual approval process at the Faculty and University level. Changes that have substantial academic or financial impacts will receive scrutiny in accordance with the process outlined below before going through the aforementioned approval processes. In this respect, the process indicated below is roughly modeled on the approval process for new academic programs.

The reason that this is coming before SUC and Senate for endorsement is to bring awareness to and gain support for the UCO as academic priorities of the University, and the development of calendar text and processes to support this program.

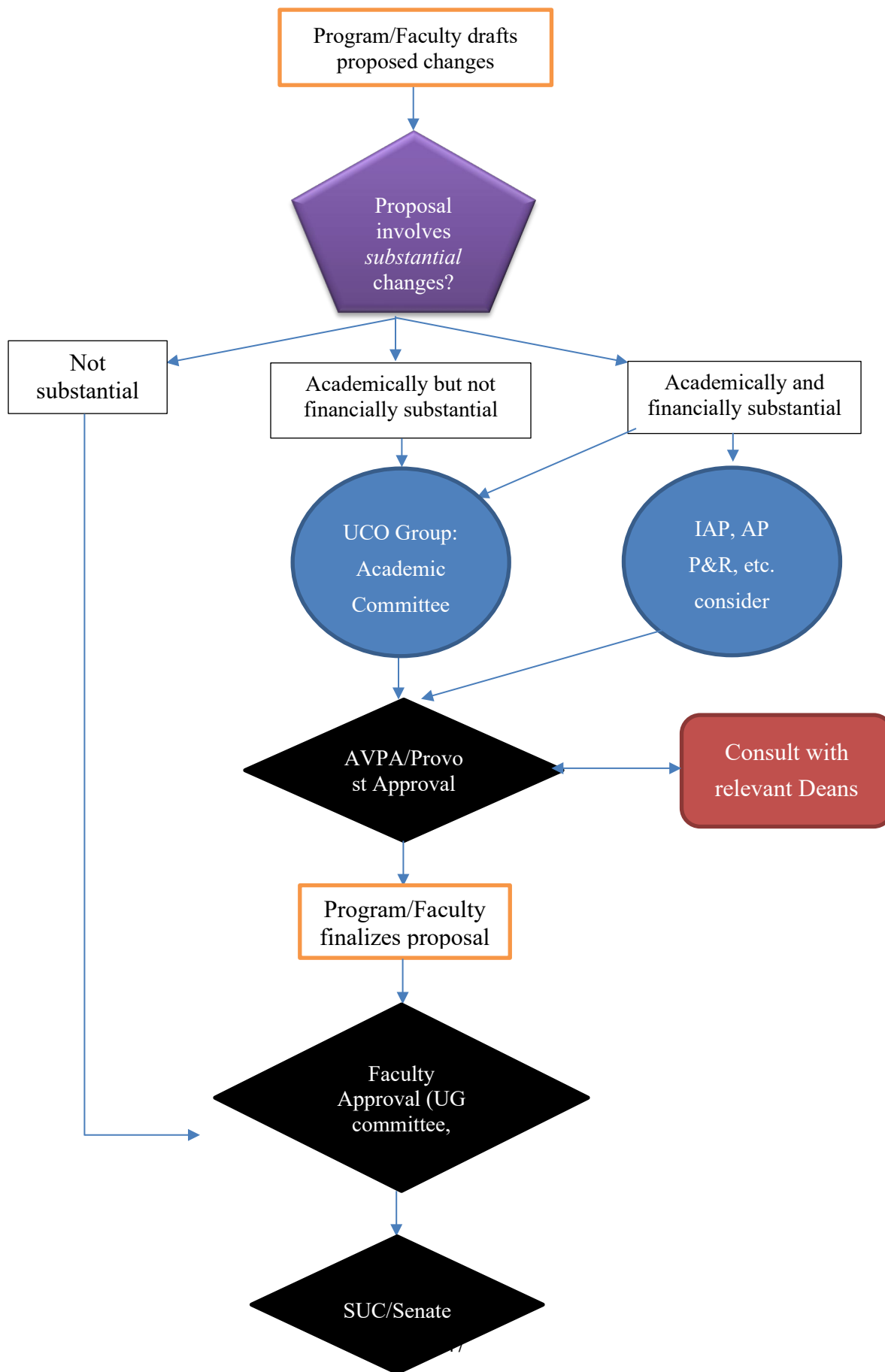
Senate should be aware that the process below may be modified in its details. The detailed workings of the new model should be expected to evolve as we learn what works and what does not. Only changes that deviate from the spirit of the model described below will be brought back to these bodies for further consideration. SUC will be consulted and Senate informed about significant developments as the process evolves.

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Comments about the diagram:

- There is mention of UCO Group. This is a group currently being established. The details of its remit are likewise being developed. It will be advisory to the AVPA, and will have the described role in advising on the academic appropriateness of substantial UCO changes. It will also (among other things) work out logistical details of UCO offerings, and design and oversee quality assurance for UCO. It will build on substantial work already completed by the former Steering Committee, English Language Competency Initiative (SCELCI).
- As with new program approvals, there is a step in which the Vice-President, Academic and Provost, as the officer collegially selected as both the chief administrative officer and the chief financial officer for academic matters is responsible to assess both the academic and financial implications of a proposal. For UCO changes, the VPAP decision will normally be delegated to the Associate Vice-President, Academic. As with new program approvals, discussions with the Deans involved inform the decisions as appropriate.
- Obviously, ensuring that there is an efficient method for determining whether a proposal has “substantial” implications (whether financial or academic) is important for the success of this model. This will be an active subject of discussion involving stakeholders in the coming weeks.

Attachment 1



# Vice-President, Research & International Report to Senate March 2021

## Introduction

This report to Senate highlights research outputs and outcomes for the period February 2021 by the thematic areas as outlined in Waterloo's Strategic Plan 2020-25.

## Awards and Distinctions

Waterloo received notice of five new Award winners during this period.

- **2021 Sloan Research Fellow: William Slofstra** (Math, Pure Mathematics)  
Awarded to the brightest young scientists across the U.S. and Canada, the Sloan Research Fellowships are one of the most competitive and prestigious awards available to early career researchers. They are also often seen as a marker of the quality of an institution's science faculty and proof of an institution's success in attracting the most promising junior researchers to its ranks. Since the first Sloan Research Fellowships were awarded in 1955, 15 faculty from University of Waterloo have received a Sloan Research Fellowship.

- **2020 Lifetime Achievement Award in Computer Science: Ming Li**  
(Math, Cheriton School of Computer Science)  
The 2020 Lifetime Achievement Award in Computer Science from CS-Can|Info-Can, is a non-profit professional society dedicated to representing all aspects of computer science and the interests of the discipline across the nation. Conferred annually since 2014, the prestigious lifetime achievement award recognizes faculty members in departments, schools and faculties of computer science who have made outstanding and sustained achievement in research, teaching and service.

- **2021 Earth Leadership Fellow: Nandita Basu** (ENV, Earth & Environmental Sciences, ENGG, Civil & Environmental Engineering)  
The Earth Leadership Program provides outstanding academic researchers with the skills, approaches, and theoretical frameworks for catalyzing change to address the world's most pressing sustainability challenges, emphasizing new forms of individual and collective leadership. The program enables scientists to work collaboratively with diverse stakeholders and become agents of change within and beyond their universities.

- **New Investigator Award – Parkinson Canada: Kaylena Ehgoetz Martens** (Health, Kinesiology)  
This award, valued at \$90,000 over two years, will enable Professor Ehgoetz Martens, a neuroscientist, to further study our understanding of how anxiety contributes to freezing of gait to develop technological solutions to predict freezing in advance, when patients are in their home settings.

- **Technology & Engineering Emmy Award: Dr. Zhou Wang, Chief Science Officer and co-founder of SSIMWAVE** (ENGG, Electrical and Computer Engineering)

Honoured for leadership in perceptual quality metrics for video encoding optimization, the SSIMWAVE team has won, for the second time in six years, an Emmy Award for ground-breaking work in television video quality:

<https://www.ssimwave.com/awards/ssimwave-team-wins-second-emmy-award-in-six-years/>

SSIMWAVE is a WatCo spin-off company.

### **Early Researcher Awards (ERA)<sup>1</sup> (Round 15 Competition)**

- Nine of 30 Waterloo researchers received ERAs in the most recent competition. This represents a 30% success rate, well above the provincial average of 18-20%.

### **International Research and Partnerships**

- Waterloo formalized several research framework agreements to collaborate in joint labs with leading international research entities. Waterloo PIs include:
  - **Michele Mosca**, Combinatorics and Optimization joining the CERN Openlab (European Organization for Nuclear Research)
  - **Hamid Reza Tizhoosh**, Systems Design Engineering joining the International Collaboration for Cancer Classification Research (IC3R) Consortium; and
  - **Edward Lank**, Cheriton School of Computer Science joining the Université de Lille International Associated Laboratory “Reappearing Interfaces in Ubiquitous Environments” (LIA - REAPP)
- **Lennart Nacke**, from the Stratford School of Interaction Design and Business, in association with a European consortia, has been awarded an international grant (\$353,000) from the Canadian Institutes of Health Research (CIHR) for the Active and Assisted Living Program for the project “*EXERGETIC: An innovative digital solution to individually improve physical and cognitive functions using an exergame (video game-based) training in an ecologically valid and safe setting for the geriatric population.*”

### **Start ups**

- **Cellovie Inc.**, Dr. Michael Tam, Chemical Engineering.

*Cellovie Inc.* is based on Dr. Tam’s novel cellulose nanocrystalline derivative materials focussed on treating Per- and polyfluoroalkyl substances (PFAS) in water. [PFAS](#) is a pervasive contaminant [threatening human health](#).

- **Aquabits Inc.**, Dr. Sushanta Mitra, Mechanical and Mechatronics Engineering  
*Aquabits* is based on a novel quantum computing chip design that offers lower cost and more scalable platform than current competitive approaches.

## **Commercialization funding**

- Secured \$265k in NSERC - *Idea to Innovation* funding to support prototype development on three technologies in WatCo's IP portfolio

## **Intellectual Property and Commercialization Knowledge Translation**

- Delivered two – Waterloo Intellectual Property (IP) – [IP 101 and Commercialization](#) workshops to 25 campus participants

## **Return to Research, on campus and field research**

- The University continues to support a safe and appropriate return to research on campus, and field research. The Ontario government allowed research to continue through the lockdown. However, when province-wide shutdown measures came into effect on December 26th, 2020, out of an abundance of caution, the University suspended in-person research with human participants (with some exceptions) as well as all travel for off-campus research and field work. Waterloo continues to work closely with other universities through the Ontario Council on University Research, and with the VPRs of the U15, to ensure consistency of policies and approaches, as much as possible. As the Region of Waterloo moved into the COVID-19 Red – Control zone on February 16, 2021, research activities under approved safety plans have resumed, including in person research involving human participants. As well, requirements for accessing labs on campus outside regular business hours have changed.

## **Canada Research Continuity Emergency Fund (CRCEF)**

- The Canada Research Continuity Emergency Fund (CRCEF) is part of the Government of Canada's COVID -19 Economic Response Plan. The temporary program has been established to help sustain the research enterprise at Canadian universities and health research institutions that have been affected by the pandemic. The program has two objectives:
  1. as a priority, to provide wage support to universities and health research institutions, both of which are ineligible to the Canada Emergency Wage Subsidy (CEWS), to help them retain research-related personnel during the course of the COVID-19 pandemic; and
  2. to support extraordinary incremental costs associated with maintaining essential research-related commitments during the COVID-19 pandemic, and then ramping-up to full research activities as physical distancing measures are eased and research activities can resume.
- To date, Waterloo has been awarded over \$6 million in wage support, ramp-up and maintenance costs and extended wage support through the CRCEF.
- [https://www.sshrc-crsh.gc.ca/funding-financement/crcef-fucrc/grants\\_awarded-subventions\\_attribuees-eng.aspx](https://www.sshrc-crsh.gc.ca/funding-financement/crcef-fucrc/grants_awarded-subventions_attribuees-eng.aspx)