

**SENATE**

MONDAY May 6, 2024

3:30 P.M. EST

NH 3407 / Zoom

[Governing Documents and Resources](#)

TIMING	AGENDA ITEM	PAGE	ACTION
	<b>OPEN SESSION</b>		
3:30 p.m.	1. Territorial Acknowledgement (Marcus Shantz)	Oral	
	2. Conflict of Interest	Oral	Declaration
	3. Approval of the Agenda, and Approval of the Consent Agenda To approve the agenda as presented/amended, and to approve or receive for information the items on the consent agenda, listed as items 14-19 of the Senate agenda.	Oral	Decision
	4. <a href="#">Minutes of the April 8, 2024 Meeting</a> To approve the minutes of the April 8, 2024 meeting as distributed/amended.	5	Decision
	5. Business Arising from the Minutes		
3:35 p.m. (10 mins)	6. Teaching Award Winners a. Carol Hulls – recipient of the Distinguished Teacher Award b. Shannon Kennelly – recipient of the Amit & Meena Chakma Award for Exceptional Teaching by a Student	Oral	Information
3:45 p.m. (20 mins)	7. Report of the President a. President’s Update b. Reporting to follow up from Senators’ requests at April Senate meeting	Oral Oral	Information Information
4:05 p.m. (5 mins)	8. Reports – Senate Graduate and Research Council a. <a href="#">Major Modifications – Civil Engineering, Co-Operative Program</a> To approve the proposed major modifications to the Master of Engineering (MEng) in Civil Engineering – Co-operative Program, effective September 1, 2024, as presented.	11	Decision
	b. <a href="#">Major Modifications – Chemical Engineering</a> To approve the proposed major modifications to the Doctor of Philosophy (PhD) and Master of Engineering (MEng) in Chemical Engineering, effective September 1, 2024, as presented.	27	Decision

TIMING	AGENDA ITEM	PAGE	ACTION
4:10 p.m. (5 mins)	9. Report – Senate Undergraduate Council a. <a href="#">Major Modifications – Recreation and Leisure Studies, and Recreation and Sport Business</a> To approve the proposed major modifications to Honours Recreation and Leisure Studies, and Honours Recreation and Sport Business, effective September 1, 2025, as presented.	31	Decision
4:15 p.m. (15 mins)	10. Report – Senate Long Range Planning Committee a. <a href="#">Waterloo Values – Review of Draft Values Statement</a> That Senate endorse the Values Statement as presented in the attachment to this report, and further to recommend that the Board of Governors give final approval to the same Values Statement.	43	Discussion / Decision
4:30 p.m. (10 mins)	11. Reports – Senate Executive Committee a. <a href="#">Senate Governance Review Recommendation: Academic Quality Enhancement (AQuE) Committee</a> That Senate approve the creation of the proposed Academic Quality Enhancement Committee of Senate, as presented.	47	Decision
4:40 p.m. (10 mins)	12. <a href="#">Report – COU Academic Colleague</a>	53	Information
	13. <a href="#">Report - Honorary Degrees Committee: Spring 2024 Convocation List of Honorands</a>	57	Information
4:50 p.m. (5 mins)	<b>Consent Agenda</b> <i>Motion: To approve or receive for information the items on the consent agenda, listed as items 14-19 of the Senate agenda</i>		
	14. <a href="#">Senate Work Plan</a>	73	Information
	15. <a href="#">Report – Senate Graduate &amp; Research Council</a>	75	Information
	16. <a href="#">Report – Senate Undergraduate Council</a>	77	Information
	17. <a href="#">Report – Senate Long Range Planning Committee</a>	79	Information
	18. Report - Vice-President, Research & International - <a href="#">Awards, Distinctions, Grants, Waterloo International Engagements</a>	81	Information
	19. Report of the Vice-President, Academic and Provost a. <a href="#">Faculty Appointments, Leaves</a>	93	Information
	20. Other Business	Oral	

TIMING	AGENDA ITEM	PAGE	ACTION
4:55p.m.	<b>CONFIDENTIAL</b> Senators, Vice-Presidents, Secretariat and Technical Staff as required		
	21. <a href="#">Minutes of the April 8, 2024 Meeting</a> To approve the minutes of the April 8, 2024 meeting as distributed/amended.	95	Decision
	22. Business Arising from the Minutes	Oral	Input
	23. Report of the President a. <a href="#">Recommendation for Associate Professor, Emeritus designation</a>	97	Decision
5:00 p.m. (10 mins)	24. <a href="#">Recommendation re: Dean of Arts Nominating Committee</a> To be distributed separately		Decision
5:20 p.m. (10 mins)	25. <a href="#">Senate Self-Evaluation Survey Results</a>	99	Discussion
	26. Other Business	Oral	Input
	27. Adjournment		

April 30, 2024

Mike Grivicic  
Associate University Secretary to  
Senate

### Important Dates

<b>June 10, 2024</b>	Senate Meeting
<b>June 18, 2024</b>	Board of Governors Meeting
<b>June 27-28, 2024</b>	International Conference – From Targeting Academia to Promoting Trust and Understanding
<b>September 23, 2024</b>	Senate Meeting
<b>September 25, 2024</b>	Board & Senate Retreat
<b>October 21, 2024</b>	Senate Meeting
<b>October 29, 2024</b>	Board of Governors Meeting

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**University of Waterloo**  
**SENATE**  
**Minutes of the Monday April 8, 2024 Meeting**  
**[in agenda order]**

**Present:** John Abraham, Nasser Abukhdeir, Marc Aucoin, Aubrey Basdeo, Jean Becker, Jeff Casello, Judy Castaneda, Trevor Charles, Joan Coutu, Kristine Dalton, Laura Deakin, Charmaine Dean, David DeVidi, Catherine Dong, Aiman Fatima, Mark Ferro, Bruce Frayne, Murray Gamble, Genevieve Gauthier-Chalifour (Secretary), Vivek Goel (Chair), Mike Grivicic (Associate Secretary), Vikas Gupta, David Ha, Peter Hall, Kevin Hare, Neela Hassan, Chris Houser, Nadine Ibrahim, Narveen Jandu, Acey Kaspar, Scott Kline, Christiane Lemieux, Xianguo Li, Lili Liu, Jennifer Lynes Murray, Stephanie Maaz, Ellen MacEachen, Carol Ann MacGregor, Blake Madill, Colleen Maxwell, Peter Meehan, Kristiina Montero, Richard Myers, Cathy Newell Kelly, Christopher Nielsen, Rory Norris, James Nugent, Erin O'Connell, Troy Osborne, David Porreca, Jacinda Reitsma, Cynthia Richard, Mary Robinson, James Rush, John Saabas, Labibah Salim J Ali, Beth Sandore Namachchivaya, Rida Sayed, Asher Scaini, Marcus Shantz, Siva Sivoththaman, James Skidmore, Anita Taylor, Sharon Tucker, Diana Vangelisti, Dan Weber, Stanley Woo, Clarence Woudsma, Annie Yang

**Guests:** Katherine Acheson, Faisal Al-Faisal, Rebecca Butler, Aldo Caputo, Nenone Donaldson, Skyler Duggan, Bernard Duncker, Donna Ellis, Becky Elming, Melanie Figueiredo, Jenny Flagler-George, Barbara Forrest, Diana Goncalves, Bryan Grimwood, Sarah Hadley, Michelle Hollis, Diane Johnston, Ahmad Nabil, Andrea Kelman, Nick Manning, Eleanor McMahon, Nicholas Pfeifle, Chris Read, Karl Schuett, Greg Smith, Allan Starr, Brandon Sweet, Tim Weber-Kraljevski, Sarah Willey-Thomas

**Absent:** Sheila Ager\*, Lisa Aultman-Hall, Kim Cuddington, Jack DeGooyer, Paul Fieguth\*, Wendy Fletcher\*, Mark Giesbrecht\*, Rob Gorbet\*, Kelly Grindrod, Natalie Hutchings\*, Sonia Ismail, Martin Karsten\*, Achim Kempf\*, Veronica Kitchen, Alysia Kolentis\*, Brad Lushman, Shana MacDonald, Luke Potwarka, Sivabal Sivaloganathan, Graeme Turner, Mary Wells, Changbao Wu

\*regrets

**OPEN SESSION**

The chair welcomed Senators to the meeting and offered remarks:

- Senate elections were completed last month, with new Senators starting at the May meeting;
- Three new University Professors announced - Raouf Boutaba (Computer Science), Philippe Van Cappellen (Earth & Environmental Sciences), and En-hui Yang (Electrical and Computer Engineering)
- Appointment of Dr. Jennifer Gillies to the position of Associate Provost, Campus Support and Accessibility, effective March 4
- The May Senate meeting will include an item on Waterloo's Values, which will be discussed at the Senate Long Range Planning Committee on April 10.

The chair recognized those Senators whose terms end on April 30, 2024 and thanked them for their service to the University.

**1. TERRITORIAL ACKNOWLEDGEMENT**

Jennifer Lynes Murray offered a territorial acknowledgement along with a personal reflection.

**2. CONFLICT OF INTEREST**

Senators were asked to declare any conflicts they may have in relation to the items on the agenda. No conflicts were declared.

**3. APPROVAL OF THE AGENDA, AND APPROVAL OF THE CONSENT AGENDA**

The chair suggested amendments to allow a student representation after item 5, and to withdraw item 9(c) pending further consultation. A motion was heard to approve the agenda as amended, and to

approve or receive for information the items on the consent agenda, listed as items 12-16 of the Senate agenda. Porreca and Casello. Carried.

**4. MINUTES OF THE MARCH 4, 2024 MEETING**

A motion was heard to approve the minutes as distributed. Kline and Porreca. Carried.

**5. BUSINESS ARISING FROM THE MINUTES**

There was no business arising.

Representation

Ahmad Nabil addressed Senate as follows: called for a moment of silence for Sofyan Taya; expressed dissatisfaction with the University's stance of principled neutrality with respect to the ongoing situation in Gaza; called on the University to sever research and academic ties with Technion and other Israeli universities in relation to those universities' relationship with the military, and divestment from organizations that supply military equipment to Israel; expressed the destruction of schools, universities and libraries in Gaza and targeting of academics amounts to scholasticide; asserted the University should call for an arms embargo, and demanded a statement on the passing of Dr. Taya.

The Chair observed: the University condemns the violence in Gaza and supports the calls for a ceasefire and for the release of hostages; academic freedom includes the free flow of academic collaborations and supporting faculty members and students in these collaborations; the research funds in question are not part of the operating budget of the University but are external funds. The Vice-President Research & International further iterated: significant concern with the war and violence in Gaza; the areas of research in question are in quantum, nanotechnology and water; as is the case for much cutting-edge research in fields like quantum computing and at this institution broadly, it is possible to apply advances in knowledge to areas outside their original purpose, here that would be much longer term. On the question of release of related grant proposal documentation: all grant proposals and associated reports handled by the institution represent the intellectual property of the owners and are held under their ownership.

Members discussed: areas for research collaboration in the current agreement with Technion, in addition to Water, Nanotechnology and Quantum Computing include AI, health, cybersecurity, photonics and smart cities; though a call for proposals was circulated for research in AI and cybersecurity, no proposals were funded from that 2023 call and there has been no activity past that call; the University conducts due diligence in advance of engagements with donors, as per Policy 7, and also relies on our safeguarding research team along with guidance from the federal government to conduct risk assessments. Some members expressed that the relationship with Technion represents a reputational risk, given that institution's engagement with the military, and a broader examination of similar such relationships may be appropriate; potential to raise reputational risks at the upcoming Board meeting; a Senator expressed that there has been far less University communications on the situation in Gaza, in comparison to that in Ukraine.

For the next meeting of Senate, the Office of Research will consider whether the titles of research proposals can be provided to Senate, and will provide Senate with further context on processes for assessing research partnerships. The University will consider the policy framework that guides such partnerships in a comprehensive manner to ensure that it is consistent with best practices.

**6. SENATE WORKPLAN**

This item was received for information.

**7. REPORT – TEACHING AWARDS COMMITTEE**

Casello announced the recipients of the Amit & Meena Chakma Award Exceptional Teaching by a Student: Anthony Vogliano, Sean Monahan, Shannon Kennelly and Ryan Lok. DeVidi announced the recipients of the Distinguished Teacher Award: Cecilia Cotton, Brenda Lee, Carol Hulls, and Jordan Hamilton. Senate applauded all of the award recipients, and 1-2 of the recipients will be invited to an upcoming Senate meeting to speak to Senate about their teaching experience.

**8. REPORT OF THE PRESIDENT**

**a. President's Update.** Goel provided his report and offered the following:

- Recent provincial announcement re: allocation of international student places, with Waterloo's allocation in line with that of 2023, though concerns persist on the general trends for international applications and that the confusion caused as a result of the communications from the federal and provincial governments may deter some students from considering Waterloo
- Provincial budget had minimal additional funding for postsecondary education, though potential new provisions under the Building Ontario Fund may support large scale projects for postsecondary student housing
- Freedom of Expression and Respectful Engagement Task Force is well underway with consultation activity
- Town Hall event regarding the university budget on April 23
- Launch of the Future Cities Institute on April 3<sup>rd</sup>
- Approval of revisions to Policy 29 will make Waterloo a smoke-free campus on July 1, 2024 with allowance for designated smoking areas during a transition period in support of smoking cessation

On the last point, one Senator noted that the new policy would prohibit smoking outdoors but that he believed risks for respiratory illnesses from an indoor environment persist; the chair noted that the smoking policy changes come through the Wellness Collaborative which was created in response to and guided by the principles of the Okanagan Charter.

#### **9. REPORT – SENATE GRADUATE AND RESEARCH COUNCIL**

Casello provided an overview of reports (a) and (b).

##### **a. New Program – Graduate Type II Diploma in Climate Change**

A motion was heard to approve the creation of the Type 2 Graduate Diploma in Climate Change, effective September 1, 2024, as presented. Casello and Frayne. Carried.

##### **b. Major Modifications – MA in Recreation and Leisure Studies**

A motion was heard to approve the proposed major modifications to the Master of Arts (MA) in Recreation and Leisure Studies, effective September 1, 2025, as presented. Casello and DeVidi. Carried.

##### **c. Regulation Revisions – Approved Doctoral Dissertation Supervisors**

Casello noted that this item has been withdrawn to be taken back to the council for further discussion, as well as for discussion with FAUW's Lecturers Committee.

#### **10. REPORTS – SENATE EXECUTIVE COMMITTEE**

##### **a. Elections to Senate Committees and Councils**

Additional nominations were received from one senator via email during the meeting and those nominations will be included in the tranche to be approved by Senate Executive Committee following the meeting.

A motion was heard to acclaim the membership of Senate committees and councils as presented on the list of nominees, and to delegate approval to the Senate Executive Committee for any remaining or subsequent vacancies. Porreca and Lynes Murray. Carried.

##### **b. Elections to the Board of Governors**

A motion was heard to acclaim the election of a graduate student Senator to the Board of Governors as presented on the list of nominees, for a two-year term commencing May 1, 2024; and to delegate approval to the Senate Executive Committee for any vacancies which exist. Porreca and Woudsma. Carried.

For items (a) and (b), where elections are necessary these will be held following the meeting.

##### **c. Delegation of Authority for Approval of Roster of Graduands**

A motion was heard that Senate delegate its authority for the approval of the roster of graduands jointly to the chair and vice-chair of Senate, for convocation ceremonies scheduled in June 2024 and October 2024, and that Senate direct that a report on the complete roster of graduands be presented for information to the Senate meeting following the relevant convocation. Newell Kelly and DeVidi. Carried.

**11. REPORT OF THE SENATE FINANCE COMMITTEE**

**a. 2024/25 Annual Operating Budget**

The chair observed that a budget education session was held on March 25<sup>th</sup> with approximately 50 Senators in attendance, and that the recommendation under consideration comes from the Senate Finance Committee meeting held on April 2<sup>nd</sup>. The report includes detail on the wide range of discussion at the committee meeting along with a copy of the PowerPoint slides given at that meeting.

James Rush provided a presentation and noted the following: suppression of expenses in previous budget years due to Bill 124, and the impact of the compensation reopener clause increased expenses on the 2023/24 budget as well as the upcoming operating budget; projected but uncertain increased expenses arising from new employee compensation agreements that would take effect on May 1, 2024, along with general inflation in expenses broadly; revenues face ongoing constraints due to the domestic tuition freeze and corridor funding limitations; international tuition levels are now competitive with peers so there is diminished ability for further increases; enrollment trends for domestic and international enrollments; projected unmitigated operating deficit of \$74.5 million in 2024/25; mitigation measures to include across the board ongoing reduction to expenses in both academic and academic support units as well as centrally controlled funds and targeted additional ongoing reductions to achieve a total target of \$42.5 m, as well as one time contributions from units and central reserves to address the remaining projected \$32 m; recent survey by COU shows that many institutions are facing similar deficits; financial challenges are likely to last for a number of years, and a multi-year, multi-modal approach with more sustainable targeted approaches to efficiencies, cost containment and revenue generation to address shortfalls aims to support Waterloo's finances.

Members discussed: more action will be needed on top of the budget mitigation measures described, and the approach described will allow time for medium and longer term mitigation plans to firm up; risk and transition funds will be drawn upon as a one-time budget measure; accessing funds from central sources will displace expenditure on long-term investments and strategies; limited detailed information was provided in the budget documentation re: expenses, and this may be an area that Senate may want more detailed information; this year's budget proposal provided additional data requested by Senators, and the University is continuing efforts to build the tools to provide more detailed data (which dovetails with the approach to integrated planning); while mitigation measures are uniform across Faculties and units, not all are equally well-positioned to manage expense reductions; it is important to assess how units support the mission of the University and deliver value, though presently there is no framework to facilitate those measurements; regarding property, it could be useful to obtain a list of long-term projects kept by the Building & Properties Committee, and the Senate Long Range Planning Committee will have a role in the new Campus Master Planning process; the budget presentation could benefit from disaggregating salaries; providing the detailed information that feeds into the building of the operating budget could overwhelm Senate's consideration of the key points.

A motion was heard that Senate recommend that the Board of Governors approve the 2024/25 Operating Budget, as presented. Lynes Murray and Newell Kelly. Carried.

**CONSENT AGENDA**

The consent agenda was approved under item 3, with items approved or received for information.

**12. REPORT – SENATE GRADUATE & RESEARCH COUNCIL.** Received for information.

**a. Regulation Revisions – Graduate Studies Academic Calendar**

To approve the proposed academic regulation revisions to the Graduate Studies Academic Calendar (GSAC), effective May 1, 2024, as presented.

**13. REPORT – SENATE UNDERGRADUATE COUNCIL**

**a. Regulation Revisions – Regulation Revisions, Faculty of Science**

To approve the proposed academic regulation revisions to Doctor of Optometry Academic Regulations, Course Grades and Credits, and Online Courses, for the Faculty of Science, effective September 1, 2024, as presented.

**14. REPORT – SENATE LONG RANGE PLANNING COMMITTEE**

Received for information.



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15. **REPORT OF THE VICE-PRESIDENT, RESEARCH & INTERNATIONAL.** Received for information.

16. **REPORT OF THE VICE-PRESIDENT, ACADEMIC AND PROVOST**

a. **Faculty Appointments, Leaves.** Received for information.

b. **University Professor designation.** Received for information.

17. **OTHER BUSINESS**

There was no other business.

With no further business in open session, Senate convened in confidential session.

April 11, 2024  
MG/dg (amended May 13, 2024)

Mike Grivicic  
Associate University Secretary to  
Senate

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## Senate Graduate & Research Council

**For Approval**

**Open Session**

**To:** Senate

**Sponsor:** Charmaine Dean  
Vice-President, Research & International

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

**Presenter:** Jeff Casello

**Contact Information:** [jcasello@uwaterloo.ca](mailto:jcasello@uwaterloo.ca)

**Date of Meeting:** May 6, 2024

**Agenda Item Identification:** **8(a). Report – Senate Graduate & Research Council:  
Major Modification – MEng in Civil Engineering**

### **Recommendation/Motion:**

To approve the proposed major modifications to the Master of Engineering (MEng) in Civil Engineering, effective September 1, 2024, as presented.

### **Summary:**

[Senate Graduate & Research Council](#) met on April 8, 2024 and agreed to forward the following items to Senate for approval as part of the regular agenda.

### **Jurisdictional Information:**

This item is being submitted to Senate in accordance with [Senate Bylaw 2](#), section 4.03(e): “Consider, study and review all proposals for new graduate programs, the deletion of graduate programs, major changes to existing graduate programs, arrange for internal appraisals as the council shall see fit, and make recommendations to Senate thereon.”

### **Governance Path:**

Engineering Faculty Council approval date (mm/dd/yy): 02/27/24

Senate Graduate & Research Council approval date (mm/dd/yy): 04/08/24

### **Highlights/Rationale:**

The proposed revision is adding a direct entry Co-operative program/option to the MEng in Civil Engineering program as presented in Appendix A.

Building on the success of co-op program at undergrad level, the program helps MEng students to be integrated into the job market aligning with the main objectives of the MEng. It can be concluded that this new co-op program:

- Helps in developing communication skills, networking, and new collaborations
- Aligns well with the University's and Province's vision on "Work Integrated Learning"
- Helps attracts good applicants to the CEE MEng program
- Allows students to maximize their employability potential by providing them with job search skills and valuable co-op work experience

Feedback from graduate students and some potential employers has been collected through different sessions indicating the clear support of the program.

The admission to the MEng (Co-op) program will be based on academic merit and considering previous work experiences to maintain high quality and reputation among employers. The initial capacity of the program will be limited to 20 students distributed over the three terms. The program capacity will be reviewed yearly based on the number of placements/work experiences, types of jobs and employers' evaluations. In the event of a student not finding a co-op work experience, the student may transfer to the regular MEng without co-op.

The co-op program/option will be supported by Co-operative Education. The Feasibility Report that was completed by Co-operative Education is included as Appendix B.

### **Documentation Provided:**

Appendix A – Graduate Studies Program Revision Template

Appendix B - Co-operative & Experiential Education (Co-op) Preliminary Review

# SGRC Appendix A: Graduate Studies Program Revision Template



## Graduate Studies Program Revision Template

Prior to form submission, review the [content revision instructions](#) and information regarding [major/minor modifications](#). For questions about the form submission, contact [Trevor Clews](#), Graduate Studies and Postdoctoral Affairs (GSPA).

**Faculty:** Engineering

**Program:** Master of Engineering (MEng) in Civil Engineering – Co-operative Program

**Program contact name(s):** Adil Al-Mayah

**Form completed by:** Adil Al-Mayah

**Description of proposed changes:**

Note: changes to courses and milestones also require the completion/submission of the [SGRC Graduate Studies Course/Milestone Form](#).

*Adding a direct entry Co-operative program/option to the MEng in Civil Engineering program.*

Is this a [major modification](#) to the program? Yes

**Rationale for change(s):**

*Building on the success of co-op program at undergrad level, the program helps MEng students to be integrated into the job market aligning with the main objectives of the MEng. It can be concluded that this new co-op program:*

- *Helps in developing communication skills, networking, and new collaborations*
- *Aligns well with the University's and Province's vision on "Work Integrated Learning"*
- *Helps attracts good applicants to the CEE MEng program*
- *Allows students to maximize their employability potential by providing them with job search skills and valuable co-op work experience*

*Feedback from graduate students and some potential employers have been collected through different sessions indicating the clear support of the program.*

*The admission to the MEng (Co-op) program will be based on academic merit and considering previous work experiences to maintain high quality and reputation among employers. The initial capacity of the program will be limited to 20 students distributed over the three terms. The program capacity will be reviewed yearly based on the number of placements/work experiences, types of jobs and employers' evaluations. In the event of a student not finding a co-op work experience, the student may transfer to the regular MEng without co-op.*

*The co-op program/option will be supported by Co-operative Education. Attached is the Feasibility Report that was completed by Co-operative Education.*

**Proposed effective date:** Term: Fall Year: 2024

**Current [Graduate Studies Academic Calendar \(GSAC\)](#) page** (include the link to the web page where the changes are to be made):

<https://uwaterloo.ca/graduate-studies-academic-calendar/engineering/department-civil-and-environmental-engineering/master-engineering-meng-civil-engineering>

Current MEng in Civil Engineering Graduate Studies Academic Calendar content:	Proposed MEng in Civil Engineering – Co-operative Program Graduate Studies Academic Calendar content:
<p><b>MASTER OF ENGINEERING (MENG) IN CIVIL ENGINEERING</b></p> <p>Program information</p> <ul style="list-style-type: none"> <li>• <b>Admit term(s)</b> <ul style="list-style-type: none"> <li>○ Fall, Winter &amp; Spring</li> </ul> </li> <li>• <b>Delivery mode</b> <ul style="list-style-type: none"> <li>○ On-campus</li> </ul> </li> <li>• <b>Length of program</b> <ul style="list-style-type: none"> <li>○ Full-time: 4 terms (16 months)</li> <li>○ Part-time: 8 terms (32 months)</li> </ul> </li> <li>• <b>Program type</b> <ul style="list-style-type: none"> <li>○ Master's</li> <li>○ Professional</li> </ul> </li> <li>• <b>Registration option(s)</b> <ul style="list-style-type: none"> <li>○ Full-time</li> <li>○ Part-time</li> </ul> </li> <li>• <b>Study option(s)</b> <ul style="list-style-type: none"> <li>○ Coursework</li> </ul> </li> <li>• <b>Additional program information</b> <ul style="list-style-type: none"> <li>○ The University of Waterloo does not provide funding for MEng in Civil Engineering students, and the candidates are expected to be self-supporting.</li> </ul> </li> </ul> <p><b>Admission requirements</b></p> <ul style="list-style-type: none"> <li>• <b>Minimum requirements</b> <ul style="list-style-type: none"> <li>○ An Honours Bachelor's degree (or equivalent) with a 75% standing.</li> <li>○ Graduate Record Examination (GRE) score (only for those applicants who completed their degree outside of Canada and the United States).</li> </ul> </li> <li>• <b>Application materials</b> <ul style="list-style-type: none"> <li>○ Résumé</li> <li>○ Supplementary information form</li> <li>○ Transcript(s)</li> </ul> </li> <li>• <b>References</b> <ul style="list-style-type: none"> <li>○ Number of references: 2</li> </ul> </li> </ul>	<p><b>MASTER OF ENGINEERING (MENG) IN CIVIL ENGINEERING - <u>CO-OPERATIVE PROGRAM</u></b></p> <p>Program information</p> <ul style="list-style-type: none"> <li>• <b>Admit term(s)</b> <ul style="list-style-type: none"> <li>○ Fall, Winter &amp; Spring</li> </ul> </li> <li>• <b>Delivery mode</b> <ul style="list-style-type: none"> <li>○ On-campus</li> </ul> </li> <li>• <b>Length of program</b> <ul style="list-style-type: none"> <li>○ <u>Full-time: 4-5 terms (16-20 months)</u></li> </ul> </li> <li>• <b>Program type</b> <ul style="list-style-type: none"> <li>○ <u>Co-operative</u></li> <li>○ Master's</li> <li>○ Professional</li> </ul> </li> <li>• <b>Registration option(s)</b> <ul style="list-style-type: none"> <li>○ Full-time</li> <li>○ Part-time</li> </ul> </li> <li>• <b>Study option(s)</b> <ul style="list-style-type: none"> <li>○ Coursework</li> </ul> </li> <li>• <b>Additional program information</b> <ul style="list-style-type: none"> <li>○ The University of Waterloo does not provide funding for MEng in Civil Engineering students, and the candidates are expected to be self-supporting.</li> </ul> </li> </ul> <p><b>Admission requirements</b></p> <ul style="list-style-type: none"> <li>• <b>Minimum requirements</b> <ul style="list-style-type: none"> <li>○ An Honours Bachelor's degree (or equivalent) with a 75% standing.</li> <li>○ Graduate Record Examination (GRE) score (only for those applicants who completed their degree outside of Canada and the United States).</li> </ul> </li> <li>• <b>Application materials</b> <ul style="list-style-type: none"> <li>○ Résumé</li> <li>○ Supplementary information form</li> <li>○ Transcript(s)</li> </ul> </li> <li>• <b>References</b></li> </ul>

<b>Current MEng in Civil Engineering Graduate Studies Academic Calendar content:</b>	<b>Proposed MEng in Civil Engineering – Co-operative Program Graduate Studies Academic Calendar content:</b>
<ul style="list-style-type: none"> <li>○ Type of references: academic or professional</li> <li>• <b>English language proficiency (ELP)</b> (if applicable)</li> </ul> <p><b>Degree requirements</b></p> <ul style="list-style-type: none"> <li>• <b>Graduate Academic Integrity Module (Graduate AIM)</b></li> <li>• <b>Courses</b> <ul style="list-style-type: none"> <li>○ Students must complete 8 one-term graduate level courses (0.50 unit weight) taken from the 500, 600 and 700 series courses (or courses acceptable for graduate credit).</li> <li>○ At least 4 of the 8 required courses must be taken within the Department of Civil and Environmental Engineering.</li> <li>○ An English for Multilingual Speakers (EMLS) technical/professional writing course for Engineers is required for all students who were not English Language Proficiency (ELP) exempt at the time of admission.</li> <li>○ A maximum of 2 500 level courses may be counted for credit.</li> <li>○ The candidate must obtain a pass in all courses credited to their program, with a minimum overall average of 70% (a grade of less than 65% in any course counts as a failure).</li> <li>○ At least half of the courses used for credit must normally be Faculty of Engineering courses.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>○ Number of references: 2</li> <li>○ Type of references: academic or professional</li> <li>• <b>English language proficiency (ELP)</b> (if applicable)</li> </ul> <p><b>Degree requirements</b></p> <p><u>The MEng in Civil Engineering – Co-operative Program will enable students to combine graduate studies with work experience.</u></p> <p><u>The program includes completion of 1-2 required work terms. The work term(s) typically takes place in term 3 (or terms 3 and 4). The work term(s) must meet CEE standard work term requirements and Departmental requirements. Students should apply to jobs related to their program of study. Note: the program must start and end on an academic term. Students in the program are encouraged to complete WIL 601 Career Success Strategies in the academic term prior to the first work term.</u></p> <ul style="list-style-type: none"> <li>• <b>Graduate Academic Integrity Module (Graduate AIM)</b></li> <li>• <b>Courses</b> <ul style="list-style-type: none"> <li>○ Students must complete 8 one-term graduate level courses (0.50 unit weight) taken from the 500, 600 and 700 series courses (or courses acceptable for graduate credit).</li> <li>○ At least 4 of the 8 required courses must be taken within the Department of Civil and Environmental Engineering.</li> <li>○ An English for Multilingual Speakers (EMLS) technical/professional writing course for Engineers is required for all students who were not English Language Proficiency (ELP) exempt at the time of admission.</li> <li>○ A maximum of 2 500 level courses may be counted for credit.</li> <li>○ The candidate must obtain a pass in all courses credited to their program, with a minimum overall average of 70% (a grade of less than 65% in any course counts as a failure).</li> <li>○ At least half of the courses used for credit must normally be Faculty of Engineering courses.</li> </ul> </li> <li>• <b>Graduate Studies Work Report</b></li> </ul>

Current MEng in Civil Engineering Graduate Studies Academic Calendar content:	Proposed MEng in Civil Engineering – Co-operative Program Graduate Studies Academic Calendar content:
	<ul style="list-style-type: none"> <li>○ <u>Students must complete one or two work-term experiences. For each work experience, a work report must be submitted to the Department for review to earn credit for the work report.</u></li> <li>○ <u>Students are responsible for following the roles and responsibilities of Cooperative and Experiential Education (CEE).</u></li> </ul>

**How will students currently registered in the program be impacted by these changes?**

*Students currently enrolled in the MEng in CEE program will not be impacted, as this program will be offered at the entry level starting on Fall 2024.*

**Department/School approval date** (mm/dd/yy): 12/14/2023

**Reviewed by GSPA** (for GSPA use only)  date (mm/dd/yy): 1/18/2024

**Faculty approval date** (mm/dd/yy):

**Senate Graduate & Research Council (SGRC) approval date** (mm/dd/yy):

**Senate approval date** (mm/dd/yy) (if applicable):



## Co-operative & Experiential Education (Co-op) Preliminary Review

**Proposed Program:** Master of Engineering in Civil Engineering, Co-operative Education

**Program Effective Date:** Fall 2024

**Requested by:** Adil Al-Mayah, Associate Chair Graduate Studies for Department of Civil and Environmental Engineering

**Prepared by:** Eva Skuza, Faculty Relations Manager, Engineering and Richard Wikkerink, Director, Student & Faculty Relations – December 11, 2023

### Executive Summary

The Department of Civil and Environmental Engineering has expressed intent to add a program-level work integrated learning (WIL) experience (co-op) option to their master's program for fall 2024. The co-op components of the degree will be fully administered by Co-operative & Experiential Education (Co-op) with the work integrated learning (WIL) component included as a milestone degree requirement.

Co-op is in the midst of a Graduate Work Integrated Learning pilot and in 2024 will be proposing an enhanced student support model and new program requirements developed for graduate students. It will leverage existing resources and infrastructure and provide customized resources and supports for programs and students. MEng programs and students involved in pilots are providing feedback and input to these changes.

The industry and jobs analysis indicates that MEng students will be competitive in finding co-op jobs aligned with their program of study. The industry analysis for Canada predicts a labour shortage over 2022-2031, providing an opportunity for co-op to position the distinct skills and experience possessed by the students in the Civil and Environmental Engineering MEng program. The economy remains unpredictable, a factor that has a direct impact on labour market conditions. Waterloo has a very strong reputation with employers and adding graduate students will enhance more senior job opportunities, especially with eight-month work terms. To maximize access to quality jobs, students will need to explore a wide range of type of employer and geographic locations.

With the understanding of a cap of 20 students total in 2024-2025, with admission cycles in the fall, winter and spring term, Co-op supports in principle the proposed new MEng Civil Engineering Co-op program and will collaborate with the academic unit on the development and administration of co-op components of the degree.



Co-op recommends the Department of Civil and Environmental Engineering consider the following:

- Establish new co-op admission requirements for fall 2024 so that students may be directly admitted to the program, reducing barriers for international students who are required to obtain a co-op work permit to work in Canada.
- Include co-op degree requirements in graduate calendar.
- That WIL-601 be required for students prior to participating in a recruitment term.
- The co-op sequence is designed to be flexible, within the framework that two terms of study must be completed prior to the first work term and the program ends on a study term.
- Review the implications of involvement in co-op as related to items such as, but not limited to, student statuses, funding packages, and scholarships.

Co-op, with leadership from the designated Faculty Relations Manager, will:

- Ensure that the labour market and co-op job analysis for MEng programs informs graduate job development working group, Account Management (AM) and Business Development (BD) activities and targets.
- Collaborate with the program to identify student experience profiles along with specific skills that are developed and enhanced through the program to contribute to job development activities.
- Collaborate with the Associate Chair Graduate Studies for Civil and Environmental Engineering and the Graduate Officer/Coordinator to work through the Co-op Program Plan and in 2025, align with new program requirements and student support model.
- Together with the program determine success measures that link the MEng learning outcomes with criteria for co-op success that clarify the expectation for quality work terms.

## Work-Integrated Learning at UW

Co-operative Education is a form of work integrated learning (WIL), which allows students to apply classroom learning to the workplace and, likewise, connect workplace learning to their degree and areas of specialization. For those students who are seeking a stronger connection between their studies and industry, the University of Waterloo's co-op programs distinguish it amongst Canadian institutions. Furthermore, Co-op provides a robust system of support for students (domestic and international visa) seeking work experiences in Canada or internationally.

Benefits go beyond the students. Industry partners benefit by gaining access to a wider range of grad students who bring varied experiences personally, professionally, and academically. All stakeholders will benefit from opportunities for idea exchange and strengthened connection between academic research and innovations in industry.

Introducing a new co-op plan aligns with the strategic focus on [GradWIL](#) at an institutional level and will continue to reinforce UW as a WIL leader for both



undergraduate and graduate programs.

The key components of a [quality WIL experience](#) are pedagogy, experience, assessment and reflection, or P.E.A.R. Making sure all four elements are included in the development of program-level WIL are critical for creating a quality WIL experience.

- Pedagogy – includes the academic course content and the WIL curriculum
- Experience – meaningful and aligned appropriately with the WIL model
- Assessment – including the learning outcomes for the program + Future Ready Talent Framework
- Reflection – on the WIL experience and in alignment with the idea of “purposeful work”

## Co-op Program Structure

The MEng Civil Engineering Co-op program will follow the model of other graduate co-op programs. All co-op students are responsible for following the procedures, [roles and responsibilities](#) of co-op students.

Co-op students are strongly encouraged to complete WIL 601 (which will be available on LEARN as of Winter 2024) prior to their first co-op work term (typically completed in their pre-recruitment term) and before they apply to jobs concurrently. WIL 601 provides information on navigating the co-op employment process, foundational career preparation and teaches students how to prepare professional job search documents. Some graduate programs have positioned WIL 601 as a foundational requirement for co-op participation. Students who have already completed similar UW co-op preparation modules (e.g.: PD1 Career Fundamentals) may not be required to take WIL 601.

The Centre for Career Development (CCD) provides career and co-op preparation resources and services (e.g.: resume, cover letter, interview preparation, job search, etc.) for all graduate students. These services are accessed more readily when promoted by the academic program or incorporated into existing courses. Additional collaboration between Civil and Environmental Engineering, Student & Faculty Relations (SFR) and CCD may be required prior to fall 2024 to establish how existing services and staff will be utilized.

Co-op work terms must meet [standard work term requirements](#) for all graduate students. MEng Civil Engineering students will have access to the co-op job board through WaterlooWorks or may arrange their own employment, externally, which must be approved by Co-op. During the experience, graduate students will be supported by Co-op Advisors through site visits, e-check-ins and work term ratings. Employers will evaluate the work performance of students via the [Student Performance Evaluation](#) (SPE); a rating of ‘satisfactory’ or above will grant the student credit for the work term.

To evaluate program effectiveness and WIL outcomes, the Co-op Faculty Relations Manager, Engineering, will monitor key metrics annually to ensure program quality.



## Master of Engineering Learning Outcomes

Given that there are multiple factors contributing to the measure of quality (e.g., labour market, student experience, engagement, and readiness for the workplace), the department and Co-operative Education will need to determine the criteria and process to assess the “quality of work term position.”

The success of a co-op program can be measured through the learning that occurs on a work term thorough the [Future Ready Talent Framework](#) (FRTF) as assessed by the Student Performance Evaluation and the Major Reflective Report. The program may wish to consider mapping MEng learning outcomes and courses to the FRTF for further insight.

## Co-op Sequence

Students in MEng Civil Engineering will be required to complete one standard co-op work term following a minimum of two terms of study. Co-op strongly recommends that students complete two consecutive co-op work terms in their program structure for a longer immersive work experience. This would meet needs for industry partners, builds on the current MEng model and would be consistent with other UW graduate co-op plans. As outlined by the program, students will need to complete eight courses. It is recommended that students be granted the flexibility to select either term 3 or term 4 to do their work term, noting that all co-op programs must end on a study term to maximize the integration of classroom and workplace learning.

Co-op sequences will be determined with the program and student at the start of the first term of study, noting relevant deadlines as associated with WIL 601. In graduate programs, we are learning that early engagement in work-search strengthens the work term outcomes. As the program develops a pattern of work term sequences, there would be benefit (student expectations, job development, streamline process) in establishing a common sequence and managing individual modifications to sequences through sequence change processes.

Sample Sequence MEng Civil Engineering Co-op with 2 work terms:

Term 1	Term 2	Term 3	Term 4	Term 5
Direct-entry Study Co-op prep (WIL 601)	Study Work search	<b>Work Term 1</b>	<b>Work Term 2</b>	Study Completion of Work Report

## Co-op Admissions

Programs seeking to add co-op as an option for their students are strongly encouraged to establish a direct-entry co-op program. There are a range of benefits to this structure, including Co-op’s ability to forecast earlier the number of students expected to be



scheduled for a work term from the program and adjust employer and student-facing resources as necessary. Based on current process, visa students can be considered by Canadian immigration for a co-op work permit along with a student permit, preventing lengthy application processes when a work permit is applied for separately.

Beginning fall 2025, students will apply and be directly admitted into the MEng Civil Engineering Co-op plan. The academic unit will need to establish a specific process and criteria for admissions into this new program.

Where there is demand for co-op, consideration should be given to the value and intention of a WIL experience, as academic standing is not always an indicator of workplace success. Additionally, graduate students bring a range of personal, professional, and academic experiences and so while the more experienced students may ultimately be successful in finding co-op employment, they arguably may not be the students to benefit most from the WIL experience.

## **Degree Requirements**

Graduate students completing the Co-operative education degree requirements will receive a “Co-operative Education” degree designation. These requirements include the following:

- Complete a minimum of one standard co-op work term and receive a Student Performance Evaluation of “marginal” or better
- Complete a work report/reflection requirement administered by the academic department

## **Graduate Student Support**

The [Centre for Career Development](#) (CCD) is located in the Tatham Centre at the Waterloo campus and provides support to undergrad and grad students (whether in co-op or not), alumni and staff with co-op and career planning and preparation. Existing services include 1:1 appointments for resumes, cover letters, interview skills, work search, career planning and others, 1:1 drop-ins, workshops, both on and offline resources and supports all offered through a dedicated team of existing co-op and career staff.

Civil Engineering graduate co-op students will be assigned to a team of Career Advisors who provide answers to co-op related questions as well as support throughout the co-op recruitment process. Once students secure a work term, they are offered additional support via a dedicated co-op Student Advisor who is available throughout the term, and provides a work term consultation and reviews e-check-ins.

## **Job Development**

The labour market and job analysis provides a mixed report on recent trends for the Civil and Environmental Engineering co-op program. Looking more broadly, the [2015 Engineering Labour Force Survey](#) “highlights a large and growing need to replace retiring engineers as they exit the workforce. This is particularly relevant for civil, mechanical, electrical and electronic engineers as well as computer engineers. Replacement demand for engineers is an important theme that will be relevant for the next decade as the baby boom generation retires.”



As jobs are distributed across Canada and with a wide variety of employers, students will need to consider broad job searches to find employment relevant to their area of discipline. Mobility of graduate students is a consideration for the program when establishing expectations for the co-op program.

With the graduate job development working group in Co-op, there is additional focus on strategies to develop jobs that are meaningful for the learning of graduate co-op students. Building on the success of the co-op option in other Master of Engineering programs, we feel that the typical lead time needed to develop jobs will be shortened. With strong connections into associated industries, Co-op will actively develop a range of suitable opportunities for graduate students and monitor impact jobs available for senior undergraduate Civil students.

As a course-based program with many pathways, marketing these students to employers provides an opportunity to profile the more specialized and focused areas of expertise and knowledge graduate students bring. The GradWIL Co-op pilots have demonstrated that students who are actively engaged in preparing for and participating in job search activities over two terms optimize their employment outcomes. Graduate student services from CCD have been enhanced and are being leveraged to support students in their job search, noting that the new program plan will examine the resources required to provide these supports. Proposed modifications to Co-op supports based on the GradWIL project outcomes will benefit this program.

## **Additional Considerations**

### **Graduate WIL**

Co-op and the GSPA, along with the faculties are undergoing a multi-unit, multi-year project to expand WIL offerings at the graduate level and enhance co-op programming, supports, and processes for graduate students. Therefore, graduate co-op will undergo several changes over the coming years which will impact existing programming, support, and job development efforts for graduate students.

### **Student Status and Fees**

Graduate co-op students have their term status changed to co-op and pay a [co-op fee](#) during employed co-op work terms. Participation in graduate co-op may have implications for student statuses, funding packages and scholarships. The program will need to investigate further and make students aware of this.

### **International Students and Work Experiences**

Co-op's international team will support work terms held outside of Canada, adhering to UW and Global Affairs Canada (GAC) travel polices and advisories.

Students studying on a visa must obtain a co-op work permit in order to find employment for a co-op work term. Applying for a co-op work permit in Canada can take several months, with recent processing times taking at least six months. Direct admission to the co-op program provides access to the co-op work permit along with the study permit. Co-op's international team will support international students with





programming to support working in Canada.

## Equity

Equity is an important component to consider within a competitive admissions and co-op process. For example, international students may encounter additional barriers such as: varying levels and types of work experience of incoming students, potential for travel restrictions, as well as the complexities of obtaining funding and/or security clearance that may be required for some roles can often be a disadvantage to international students and can delay or impact work term opportunities.

## Co-op Program Plan

Following all levels of academic program approval for this new program and before the first term of admission, completion of a Co-op Program Plan will be required. The Co-op Program Plan is a checklist of information, records, system, communications, etc., that ensure Co-op administered co-op plans are set-up appropriately and necessary decisions are made. This is a collaborative activity led by a designated Faculty Relations Manager and the academic unit.

### **Overview of core data from the Civil UG program:**

Civil Graduate students have different experiences and skills than UG students and job competition between UG and Graduate students will be present but mitigated by business development strategies to market the graduate student skillset to industry partners. The complete analysis is available by request.

1. Graduate students are highly successful in finding co-op jobs (figure 1), noting economic and mobility impacts associated with the global pandemic years (2020-2022).
2. Employment trends (figure 2) from comparable MEng graduate programs demonstrate variation but with an overall balanced trend for civil engineering jobs.
3. Fall work terms have the highest number of senior UG Civil Engineering students scheduled out and Spring work terms have the highest number of junior UG Civil Engineering students scheduled out (figure 3). This suggests that a Spring work term may be ideal for Masters students, however, this could impact junior level undergraduate students.
4. Analysis of occupational classifications (figure 4) aligned with engineering indicates a sustained positive trend.
5. Employment by industry (figure 5) indicates a mixture of areas of growth and decline due to complex economic conditions since 2020.



Figure 1 – Graduate Programs Co-op Employment rate

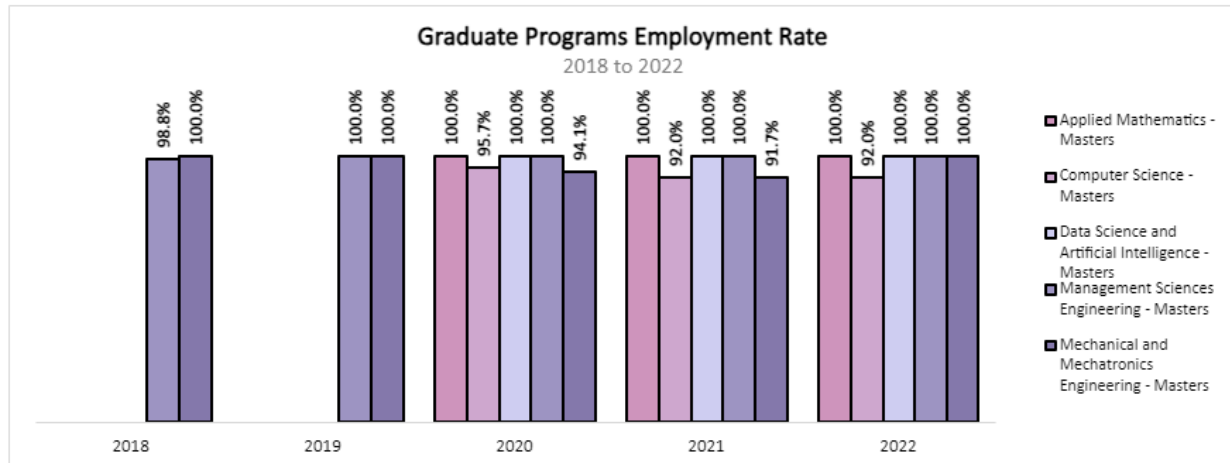
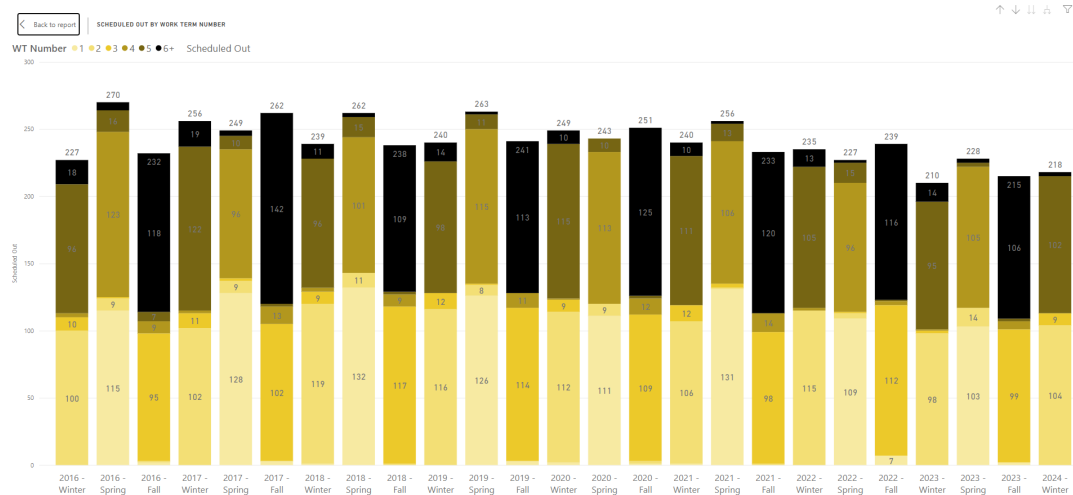


Figure 2 – Top NAICS Codes by Employed Count for comparable graduate program

Overall Top 10 NAICS Codes by Employed Count for Compareable Graduate Programs from 2018 to 2022

Job NOC Code	2018 # Emp. / Rank	2019 # Emp. / Rank	2020 # Emp. / Rank	2021 # Emp. / Rank	2022 # Emp. / Rank	2018 to 2022	2018 to 2022	Overall Net Change
2173 - Software engineers and designers	11 3	5 5	30 1	32 1	40 1	118		2
2172 - Database analysts and data administrators	10 5	4 6	19 2	25 2	32 2	90		3
2171 - Information systems analysts and consultants	11 3	12 1	9 3	8 5	30 3	70		0
1122 - Professional occupations in business management consulting	23 1	8 3	7 5	9 4	22 4	69		-3
2132 - Mechanical engineers	16 2	10 2	4 8	4 6	5 10	39		-8
213 - Civil, mechanical, electrical and chemical engineers	10 5	6 4	1 15	4 6	7 7	28		-2
2174 - Computer programmers and interactive media developers	2 11	2 11	7 5	10 3	7 7	28		4
1112 - Financial and investment analysts	5 8	4 6	2 13	1 16	9 5	21		3
2133 - Electrical and electronics engineers	3 9	1 14	8 4	4 6	3 14	19		-5
2147 - Computer engineers (except software engineers and designers)	0 22	3 8	3 10	2 11	9 5	17		17

Figure 3 – UG Civil Engineering students scheduled out each term (2016 – 2023)





### Figure 4 – Occupational Classifications and Employment trends

Noc Grouping of Interest to Engineering by Employed Counts Across Canada from 2018 to 2022

Class Level	National Occupational Classification (NOC)	2018	2019	2020	2021	2022	Trend 2018 to 2022	Net Growth/Decline 2022 - 2018
<b>Range</b>	Natural and applied sciences and related occupations, except management [21-22]	1,416,300	1,505,600	1,582,500	1,666,900	1,767,300		351,000
2-Digit	Professional occupations in natural and applied sciences [21]	841,600	941,400	1,009,500	1,116,400	1,192,300		350,700
	Technical occupations related to natural and applied sciences [22]	574,800	564,200	572,900	550,500	575,100		300
3-Digit	Professional occupations in applied sciences (except engineering) [212]	550,000	618,000	694,700	765,200	825,100		275,100
	Professional occupations in engineering [213]	229,000	247,300	240,700	275,400	287,700		58,700
	Professional occupations in education services [412]	722,300	721,100	753,000	819,300	822,300		100,000
	Professional occupations in finance [111]	421,000	442,100	469,200	473,100	502,500		81,500
	Professional occupations in business [112]	367,000	389,200	409,000	454,200	475,300		108,300

### Figure 5 – Industry employment trends

All NAICS Sector by Employed Counts Across Canada from 2018 to 2022

Gray indicating NAICS Sector of interest to Engineering Programs

NAICS Sector	2018	2019	2020	2021	2022	Trend 2018 to 2022	Net Growth/Decline 2022 - 2018
Wholesale and retail trade [41, 44-45]	2,887,600	2,937,800	2,761,300	2,888,400	2,984,700		97,100
Health care and social assistance [62]	2,393,600	2,476,900	2,402,500	2,519,600	2,603,700		210,100
<b>Manufacturing [31-33]</b>	<b>1,781,300</b>	<b>1,750,200</b>	<b>1,669,400</b>	<b>1,747,800</b>	<b>1,785,100</b>		<b>3,800</b>
<b>Professional, scientific and technical services [54]</b>	<b>1,465,200</b>	<b>1,557,700</b>	<b>1,561,800</b>	<b>1,689,200</b>	<b>1,809,700</b>		<b>344,500</b>
Construction [23]	1,435,800	1,473,900	1,407,700	1,451,500	1,552,900		117,100
Educational services [61]	1,293,300	1,330,500	1,318,200	1,448,700	1,471,100		177,800
Finance, insurance, real estate, rental and leasing [52-53]	1,204,400	1,239,200	1,240,800	1,325,900	1,367,700		163,300
Accommodation and food services [72]	1,235,300	1,219,800	945,700	967,700	1,049,600		-185,700
<b>Public administration [91]</b>	<b>953,900</b>	<b>1,009,400</b>	<b>1,006,000</b>	<b>1,081,400</b>	<b>1,136,100</b>		<b>182,200</b>
Transportation and warehousing [48-49]	979,400	1,030,900	942,700	985,500	981,400		2,000
<b>Information, culture and recreation [51, 71]</b>	<b>775,900</b>	<b>779,900</b>	<b>676,800</b>	<b>717,100</b>	<b>808,600</b>		<b>32,700</b>
Other services (except public administration) [81]	788,600	790,700	704,400	717,400	714,700		-73,900
<b>Business, building and other support services [55-56]</b>	<b>772,400</b>	<b>763,500</b>	<b>686,800</b>	<b>680,400</b>	<b>693,600</b>		<b>-78,800</b>
Forestry, fishing, mining, quarrying, oil and gas [21, 113-114, 1153, 2100]	332,500	332,400	306,900	325,700	328,500		-4,000
Agriculture [111-112, 1100, 1151-1152]	284,400	294,000	279,700	258,500	257,300		-27,100
Utilities [22]	139,600	134,300	133,000	137,700	148,300		8,700



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## Senate Graduate & Research Council

**For Approval**

**Open Session**

**To:** Senate

**Sponsor:** Charmaine Dean  
Vice-President, Research & International

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

**Presenter:** Jeff Casello

**Contact Information:** [jcasello@uwaterloo.ca](mailto:jcasello@uwaterloo.ca)

**Date of Meeting:** May 6, 2024

**Agenda Item Identification:** **8(b). Report – Senate Graduate & Research Council:  
Major Modification – PhD and MSc in Chemical Engineering**

### Recommendation/Motion:

To approve the proposed major modifications to the Doctor of Philosophy (PhD) in Chemical Engineering and Master of Applied Science (MSc) in Chemical Engineering, effective September 1, 2024, as presented.

### Summary:

[Senate Graduate & Research Council](#) met on April 8, 2024 and agreed to forward the following items to Senate for approval as part of the regular agenda.

### Jurisdictional Information:

This item is being submitted to Senate in accordance with [Senate Bylaw 2](#), section 4.03(e): “Consider, study and review all proposals for new graduate programs, the deletion of graduate programs, major changes to existing graduate programs, arrange for internal appraisals as the council shall see fit, and make recommendations to Senate thereon.”

### Governance Path:

Engineering Faculty Council approval date (mm/dd/yy): 02/27/24

Senate Graduate & Research Council approval date (mm/dd/yy): 04/08/24

**Highlights/Rationale:**

The proposed revision is to update the Graduate Research Fields in the PhD and MASc in Chemical Engineering as presented in Appendix A.

This is to better reflect and rebrand current graduate research activities for PhD and MASc in Chemical Engineering. Students have been consulted and are in support of the change. This change will improve the student experience by aligning graduate student research activity with research activity within the Department.

There are no changes to the program's learning outcomes.

**Documentation Provided:**

Appendix A – Graduate Studies Program Revision Template

# SGRC Appendix A: Graduate Studies Program Revision Template



## Graduate Studies Program Revision Template

Prior to form submission, review the [content revision instructions](#) and information regarding [major/minor modifications](#). For questions about the form submission, contact [Trevor Clews](#), Graduate Studies and Postdoctoral Affairs (GSPA).

**Faculty:** Engineering

**Programs:** (1) Doctor of Philosophy (PhD) in Chemical Engineering  
(2) Master of Applied Science (MAsc) in Chemical Engineering,

**Program contact name(s):** Xianshe Feng, Judy Caron

**Form completed by:** Xianshe Feng

**Description of proposed changes:**

Note: changes to courses and milestones also require the completion/submission of the [SGRC Graduate Studies Course/Milestone Form](#).

*Updating the Graduate Research Fields*

Is this a [major modification](#) to the program? Yes

**Rationale for change(s):**

*Updating the Graduate Research Fields, in order to better reflect and rebrand current graduate research activities for PhD and MAsc in Chemical Engineering. Students have been consulted and are in support of the change. This change will improve the student experience by aligning graduate student research activity with research activity within the Department. There are no changes to the program's learning outcomes.*

**Proposed effective date:** Term: Fall Year: 2024

**Current [Graduate Studies Academic Calendar \(GSAC\)](#) page** (include the link to the web page where the changes are to be made):

<https://uwaterloo.ca/graduate-studies-academic-calendar/engineering/department-chemical-engineering/doctor-philosophy-phd-chemical-engineering>

<https://uwaterloo.ca/graduate-studies-academic-calendar/engineering/department-chemical-engineering/master-applied-science-masc-chemical-engineering>

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p><b>Graduate research fields</b></p> <ul style="list-style-type: none"> <li>• Biochemical and Biomedical Engineering</li> <li>• Green Reaction Engineering</li> <li>• Interfacial Phenomena, Colloids and Porous Media</li> <li>• Nanotechnology</li> <li>• Polymer Science and Engineering</li> <li>• Separation Processes</li> <li>• Process Systems Engineering</li> </ul>	<p><b>Graduate research fields</b></p> <ul style="list-style-type: none"> <li>• <u>Biotechnology</u> and Biomedical Engineering</li> <li>• <u>Electrochemical Engineering</u></li> <li>• <u>Nanotechnology for Advanced Materials</u></li> <li>• <u>Soft Matter and Polymer Engineering</u></li> <li>• <u>Sustainable Reaction Engineering</u></li> <li>• Process Systems Engineering</li> </ul>

**How will students currently registered in the program be impacted by these changes?**

*Current PhD and MASc in Chemical Engineering students will not be affected.*

**Department/School approval date** (mm/dd/yy): 11/13/23

**Reviewed by GSPA** (for GSPA use only)  date (mm/dd/yy): 12/15/23

**Faculty approval date** (mm/dd/yy):

**Senate Graduate & Research Council (SGRC) approval date** (mm/dd/yy):

**Senate approval date** (mm/dd/yy) (if applicable):

## Senate Undergraduate Council

**For Approval**

**Open Session**

**To:** Senate

**Sponsor:** David DeVidi  
Associate Vice-President, Academic

**Presenter:** David DeVidi  
**Contact Information:** [david.devidi@uwaterloo.ca](mailto:david.devidi@uwaterloo.ca)

**Date of Meeting:** May 6, 2024

**Agenda Item Identification:** **9(a). Report – Senate Undergraduate Council:  
Major Modification – Recreation and Leisure Studies & Recreation  
and Sport Business**

### **Recommendation/Motion:**

To approve the proposed major modifications to Recreation and Leisure Studies (Bachelor of Arts - Honours), and Recreation and Sport Business (Bachelor of Arts - Honours), effective September 1, 2025, as presented.

### **Summary:**

[Senate Undergraduate Council](#) met on April 9, 2024 and agreed to forward the following items to Senate for approval as part of the consent agenda.

### **Jurisdictional Information:**

This item is being submitted to Senate in accordance with [Senate Bylaw 2](#), section 5.03(b): “Make recommendations to Senate with respect to new undergraduate programs/plans, the deletion of undergraduate programs/plans, and major changes to undergraduate programs/plans.”

### **Governance Path:**

Health Faculty Council approval date (mm/dd/yy): 03/22/24

Senate Undergraduate Council approval date (mm/dd/yy): 04/09/24

## **Highlights/Rationale:**

These proposed revisions are to 1. revise plan name and requirements for Honours Recreation and Leisure Studies, and 2. Revise the plan name for Honours Recreation and Sport Business, as presented in Appendices A and B.

### 1. Recreation and Leisure Studies

To change the plan title to Recreation, Leadership, and Health, and to revise the requirements as presented in Appendix A.

Through alumni and student surveys, coop consultation, and interviews with various partners, the Department of Recreation and Leisure Studies has revised their recreation and leisure studies program. Through this revision, they are highlighting the ways in which recreation and leisure can enhance the wellbeing and health of communities and its members. Graduates from the program will be well positioned to become leaders in recreation and community organizations, and make their respective communities more inclusive spaces for all people.

Students currently enrolled in the Recreation and Leisure Studies program will have the option to follow the existing or the revised curriculum. Consultation has been conducted with current students, alumni, cooperative education and community organization.

Approvals have been granted by the following University of Waterloo units – Political Science, Social Development Studies, Faculty of Environment, Peace and Conflict Studies, School of Public Health Sciences, English. The Faculties of Arts, Math and Science have been informed of the change to remove our Restricted Electives.

### 2. Recreation and Sport Business

To change the plan title to Sport and Recreation Management, as presented in Appendix B.

The revised name better reflects the curriculum and the evolution of the field in theory and practice. The revised name also reflects a wider scope of sectors (public, non-profit, and business) that their students study and work. Current students and alumni have also been consulted and have demonstrated support for this change. Current students can choose to switch to the revised plan name and calendar rules after September 1, 2025, or remain with the previous plan name.

## **Documentation Provided:**

Appendix A – Recreation and Leisure Studies

Appendix B – Recreation and Sport Business



# SUC Appendix A: Recreation and Leisure Studies

## H-Recreation & Leisure Studies Recreation, Leadership, and Health (Bachelor of Arts - Honours)

Under Review | Fall 2025

### General Program/Plan Information

---

**Faculty**

Faculty of Health

**Academic Unit**

Department of Recreation and Leisure Studies

**Field of Study**

Recreation and Leisure Studies

**Faculty**

Faculty of Health

**Undergraduate Credential Type**

Major

**Program Type**

Honours

**Degree**

Bachelor of Arts (Health)

Proposed

**Program/Plan Name**

Recreation, Leadership, and Health (Bachelor of Arts - Honours)

Existing

**Program/Plan Name**

Recreation and Leisure Studies (Bachelor of Arts - Honours)

**Systems of Study**

Co-operative

Regular

**Online Degree/Diploma**

### Admissions

---

**Admissions Entry Point**

Direct Entry

**Admission Requirements: Minimum Requirements**

### Requirements Information

---

**Invalid Combinations**

No

**Average Requirement**

Yes

**Minimum Average(s) Required**

- A minimum cumulative overall average of 65.0%.
- A minimum cumulative major average of 70.0%.

Proposed

### Graduation Requirements ?

- See Bachelor of Arts (Health) degree-level requirements.
- Complete a total of 20.0 units:
  - 11.5 units of required courses.
  - 2.5 units of additional REC courses.
  - 6.0 units of elective courses.

Existing

### Graduation Requirements ?

- See Bachelor of Arts (Health) degree-level requirements.
- Complete a total of 20.0 units:
  - 5.0 units of required courses.
  - 6.5 units of additional REC courses.
  - 2.0 units of approved courses.
  - 6.5 units of elective courses.

### Co-operative Education Program Requirements ?

For students in the co-operative system of study, see Bachelor of Arts co-operative education program requirements.

### Course Requirements (units) ?

## Required Courses

0

Units to Complete

No Rules

### Course Requirements (no units) ?

## Approved Courses List

- Complete 4 all of the following
  - Complete at least 1 course from: ACTSC, AMATH, CO, COMM, MATBUS, MATH, MTHEL, PMATH, STAT
  - Complete at least 1 course from: ANTH, EGON, GSJ, LS, PACS, PSCI, SDS, SMF, SOCWK, STV
  - Complete at least 1 course from: ARABIC, ASL, CHINA, CI, CROAT, DUTCH, EASIA, FR, GER, GRK, INDENT, INDG, ITAL, ITALST, JAPAN, JS, KOREA, LAT, MOHAWK, PORT, REES, RUSS, SI, SPAN
  - Complete at least 1 course from: BIOL, CHEM, EARTH, MNS, PHYS, SCI
  - Complete at least 1 course from: CLAS, COMMST, HIST, HUMSC, INDG, MEDVL, PHIL, RS, VCULT
  - Complete at least 1 course from: CS
  - Complete at least 1 course from: ENBUS, ENVS, ERS, GEOG, INDEV, INTEG, PLAN
  - Complete at least 1 course from: ENGL
  - Complete at least 1 course from: FINE, MUSIC, THPERF
  - Complete at least 1 course from: GERON, HEALTH, HLTH, KIN
  - Complete at least 1 course from: PSYCH (excluding PSYCH101/PSYCH101R)
  - Complete at least 1 course from: SOC

## Required Courses

- Complete all of the following
  - Complete all the following:
    - **ENVS205 - Sustainability: The Future We Want (0.50)**

- HEALTH107 - Sociology of Activity, Health, and Well-Being (0.50)
- REC100 - Introduction to the Study of Recreation and Leisure (0.50)
- REC101 - Introduction to Recreation and Leisure Services (0.50)
- REC120 - Experience Design and Delivery (0.50)
- REC201 - Introduction to Leisure, Equity, Diversity, and Inclusion for Just Communities (0.50)
- **REC215 - Marketing Recreation, Sport, and Events (0.50)**
- **REC219 - Introduction to Event Studies (0.50)**
- **REC230 - Outdoor Recreation, Tourism, and the Natural Environment (0.50)**
- **REC280 - Introduction to Tourism (0.50)**
- **REC256 - Foundations of Community Engagement in Recreation and Leisure (0.50)**
- **REC318 - Leadership Theory and Practice in Recreation, Sport and Leisure Organizations (0.50)**
- **REC356 - Leisure and Community (0.50)**
- REC371 - Quantitative Data Analysis and Mobilization (0.50)
- REC373 - Qualitative Approaches to Leisure Research (0.50)
- REC405 - Leisure and Well-Being (0.50)
- REC420 - Advanced Program Evaluation in Leisure Services (0.50)
- **REC456 - Innovative Solutions for Healthy Communities (0.50)**
- **Complete 1 of the following:**
  - **ENGL210F - Genres of Business Communication (0.50)**
  - **ENGL210G - Genres of Fundraising Communication (0.50)**
- **Complete 1 of the following:**
  - **GSJ260 - Social Determinants of Health (0.50)**
  - **HLTH260 - Social Determinants of Health (0.50)**
- **Complete 1 of the following:**
  - **LS271 - Conflict Resolution (0.50)**
  - **PACS202 - Conflict Resolution (0.50)**
  - **PACS313 - Community Conflict Resolution (0.50)**
- **Complete 1 of the following:**
  - **PSCI100 - Power, Politics, and Policy: An Introduction (0.50)**
  - **SDS231R - Introduction to Social Policy Processes (0.50)**
- Complete 1 of the following:
  - PSYCH101 - Introductory Psychology (0.50)
  - PSYCH101R - Introductory Psychology (0.50)

## Course Lists

### Required Courses

No Rules

**Are there cross-listed courses listed in requirements?** **Cross-Listings Options**   
 Yes All cross-listings to be displayed

Proposed

#### Additional Constraints

1. MUSIC353W can be used towards the 2.5 units of REC courses.

Existing

### Additional Constraints ⓘ

1. MUSIC353W can be used towards the 6.5 units of REC courses.

### Notes ⓘ

- See Faculty of Health for recommended course sequences.

## Specializations

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### Specializations for this Major ⓘ

No

## Workflow Information

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### Change to Undergraduate Communication Requirement

No

### Workflow Path ⓘ

Committee approvals

### Faculty/AFIW Path(s) for Workflow ⓘ

Faculty of Health

### Senate Workflow

Senate Regular

## Dependencies

---

### Dependent Courses and Programs/Plans

#### PREREQUISITES

✓ REC 371 - Quantitative Data Analysis and Mobilization	<a href="#">View Courses &gt;</a>
✓ REC 215 - Marketing Recreation, Sport, and Events	<a href="#">View Courses &gt;</a>
✓ REC 401 - Advanced Seminar on the Socio-Cultural and Behavioural Dimensions of Leisure	<a href="#">View Courses &gt;</a>
✓ REC 373 - Qualitative Approaches to Leisure Research	<a href="#">View Courses &gt;</a>
✓ AFM 123 - Accounting Information for Managers	<a href="#">View Courses &gt;</a>
✓ REC 120 - Experience Design and Delivery	<a href="#">View Courses &gt;</a>
✓ REC 475 - Independent Study: Translating Research for Practice	<a href="#">View Courses &gt;</a>
✓ REC 471A - Honours Thesis Proposal	<a href="#">View Courses &gt;</a>
✓ REC 405 - Leisure and Well-Being	<a href="#">View Courses &gt;</a>
✓ REC 151 - Foundations of Therapeutic Recreation Practice	<a href="#">View Courses &gt;</a>
✓ REC 312 - Practicum in Recreation, Sport, and Tourism	<a href="#">View Courses &gt;</a>

# SUC Appendix B: Recreation and Sport Business

## H-Recreation & Sport Business Sport and Recreation Management (Bachelor of Arts - Honours)

Under Review | Fall 2025

### General Program/Plan Information

---

**Faculty**

Faculty of Health

**Academic Unit**

Department of Recreation and Leisure Studies

**Field of Study**

Recreation and Sport Business

**Faculty**

Faculty of Health

**Undergraduate Credential Type**

Major

**Program Type**

Honours

**Degree**

Bachelor of Arts (Health)

Proposed

**Program/Plan Name**

Sport and Recreation Management (Bachelor of Arts - Honours)

Existing

**Program/Plan Name**

Recreation and Sport Business (Bachelor of Arts - Honours)

**Systems of Study**

Co-operative

Regular

**Online Degree/Diploma**

### Admissions

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**Admissions Entry Point**

Direct Entry

**Admission Requirements: Minimum Requirements**

# Requirements Information

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## Invalid Combinations ⓘ

Yes

## List of Invalid Combinations ⓘ

Management Studies Minor

## Average Requirement ⓘ

Yes

## Minimum Average(s) Required ⓘ

- A minimum cumulative overall average of 65.0%.
- A minimum cumulative major average of 70.0%.

## Graduation Requirements ⓘ

- See Bachelor of Arts (Health) degree-level requirements.
- Complete a total of 20.0 units:
  - 10.5 units of required courses.
  - 4.0 units of additional REC courses.
  - 2.5 units of approved courses.
  - 3.0 units of elective courses.

## Co-operative Education Program Requirements ⓘ

For students in the co-operative system of study, see Bachelor of Arts (Health) co-operative education program requirements.

## Course Requirements (units) ⓘ

### Required Courses

0

Units to Complete

No Rules

## Course Requirements (no units) ⓘ

### Required Courses

- Complete all of the following
  - Complete all the following:
    - BET100 - Foundations of Entrepreneurial Practice (0.50)
    - HEALTH107 - Sociology of Activity, Health, and Well-Being (0.50)
    - HRM200 - Basic Human Resources Management (0.50)
    - REC100 - Introduction to the Study of Recreation and Leisure (0.50)
    - REC101 - Introduction to Recreation and Leisure Services (0.50)
    - REC120 - Experience Design and Delivery (0.50)
    - REC201 - Introduction to Leisure, Equity, Diversity, and Inclusion for Just Communities (0.50)
    - REC213 - The Business of Professional Sport (0.50)
    - REC215 - Marketing Recreation, Sport, and Events (0.50)
    - REC219 - Introduction to Event Studies (0.50)
    - REC313 - Amateur Sport from Playground to Podium (0.50)
    - REC371 - Quantitative Data Analysis and Mobilization (0.50)
    - REC373 - Qualitative Approaches to Leisure Research (0.50)
    - REC405 - Leisure and Well-Being (0.50)
    - REC413 - Innovative Solutions in Recreation and Sport Business (0.50)
    - REC420 - Advanced Program Evaluation in Leisure Services (0.50)

- Complete 1 of the following:
  - AFM123 - Accounting Information for Managers (0.50)
  - ARBUS102 - Accounting Information for Managers (0.50)
- Complete 1 of the following:
  - AFM131 - Introduction to Business in North America (0.50)
  - ARBUS101 - Introduction to Business in North America (0.50)
  - BUS111W - Introduction to Business Organization (WLU) (0.50)
- Complete 1 of the following:
  - ARBUS302 - Principles of Marketing (0.50)
  - BUS252W - Introduction to Marketing Management (WLU) (0.50)
  - MGMT244 - Principles of Marketing (0.50)
- Complete 1 of the following:
  - BUS288W - Organizational Behaviour 1 (WLU) (0.50)
  - MSE211 - Organizational Behaviour (0.50)
  - PSYCH238 - Organizational Psychology (0.50)
- Complete 1 of the following:
  - PSYCH101 - Introductory Psychology (0.50)
  - PSYCH101R - Introductory Psychology (0.50)

## Course Lists

### Approved Courses List

- Choose any of the following:
  - AFM231 - Business Law (0.50)
  - ARBUS202 - Professional and Business Ethics (0.50)
  - BET300 - Foundations of Venture Creation (0.50)
  - BUS121W - Functional Areas of the Organization (WLU) (0.50)
  - BUS208W - Interpersonal Communication (WLU) (0.50)
  - BUS231W - Business Law (WLU) (0.50)
  - BUS311W - Entrepreneurship and New Ventures (WLU) (0.50)
  - BUS362W - Applied Marketing (WLU) (0.50)
  - BUS412W - Services Marketing Management (WLU) (0.50)
  - BUS432W - Consumer Behaviour (WLU) (0.50)
  - BUS452W - Marketing Strategy (WLU) (0.50)
  - BUS462W - Business-to-Business Marketing (WLU) (0.50)
  - BUS472W - Marketing Communications (WLU) (0.50)
  - BUS482W - Sales Management (WLU) (0.50)
  - COMMST100 - Interpersonal Communication (0.50)
  - COMMST101 - Theories of Communication (0.50)
  - COMMST223 - Public Speaking (0.50)
  - COMMST225 - Interviewing (0.50)
  - COMMST226 - Introduction to Race, Culture, and Communication (0.50)
  - COMMST227 - Leadership (0.50)
  - COMMST228 - Public Communication (0.50)
  - COMMST324 - Small Group Communication (0.50)
  - COMMST432 - Conflict Management (0.50)
  - COMMST433 - The Organizational Consultant (0.50)
  - ECON101 - Introduction to Microeconomics (0.50)
  - ECON102 - Introduction to Macroeconomics (0.50)

- o ECON254 - Economics of Sport (0.50)
- o ENGL210F - Genres of Business Communication (0.50)
- o ENGL295 - Social Media (0.50)
- o GSJ207 - Entrepreneurship, Gender, and Social Justice (0.50)
- o HRM301 - Strategic Human Resources Management (0.50)
- o HRM303 - Compensation (0.50)
- o HRM305 - Health and Safety (0.50)
- o HRM307 - Labour Relations (0.50)
- o LS206 - Canadian Government and Politics (0.50)
- o LS271 - Conflict Resolution (0.50)
- o LS283 - Business Law (0.50)
- o MGMT220 - Entrepreneurship and the Creative Workplace (0.50)
- o PACS202 - Conflict Resolution (0.50)
- o PHIL206 - Philosophy of Sport (0.50)
- o PHIL215 - Professional and Business Ethics (0.50)
- o PSCI100 - Power, Politics, and Policy: An Introduction (0.50)
- o PSCI231 - Government and Business (0.50)
- o PSCI252 - Global South (0.50)
- o PSCI260 - Canadian Government and Politics (0.50)
- o PSCI283 - International Political Economy (0.50)
- o PSCI331 - Public Administration (0.50)
- o PSCI334 - Public Policy (0.50)
- o REC206 - Philosophy of Sport (0.50)
- o REC218 - Social Entrepreneurship for Change (0.50)
- o REC312 - Practicum in Recreation, Sport, and Tourism (0.50)
- o REC319 - Event Planning and Design (0.50)
- o REC419 - Event Implementation and Evaluation (0.50)
- o SOC241 - Sociology of Work and Occupations (0.50)

**Are there cross-listed courses listed in requirements?** **Cross-Listings Options** ⓘ

All cross-listings to be displayed

Yes

Proposed

**Additional Constraints** ⓘ

1. MUSIC353W can be used towards the 4.0 units of REC courses.
2. For the approved courses:
  1. Registration in HRM courses will require declaration of the Human Resources Management Minor.
  2. Students should contact the Mathematics Business and Accounting unit for information regarding Laurier Business courses.
3. Students are permitted to pursue a double major in Honours Sport and Recreation Management and Honours Therapeutic Recreation, by meeting the requirements of each plan.

Existing

**Additional Constraints** ⓘ

1. MUSIC353W can be used towards the 4.0 units of REC courses.
2. For the approved courses:
  1. Registration in HRM courses will require declaration of the Human Resources Management Minor.
  2. Students should contact the Mathematics Business and Accounting unit for information regarding Laurier Business courses.
3. Students are permitted to pursue a double major in Honours Recreation and Sport Business and Honours Therapeutic Recreation, by meeting the requirements of each plan.



## Notes

- See Faculty of Health for recommended course sequences.

## Specializations

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### Specializations for this Major

No

## Workflow Information

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### Workflow Path

Committee approvals

### Faculty/AFIW Path(s) for Workflow

Faculty of Health

### Senate Workflow

Senate Regular

## Dependencies

---

### Dependent Courses and Programs/Plans

#### PREREQUISITES

✓ REC 413 - Innovative Solutions in Recreation and Sport Business	<a href="#">View Courses &gt;</a>
✓ REC 371 - Quantitative Data Analysis and Mobilization	<a href="#">View Courses &gt;</a>
✓ REC 215 - Marketing Recreation, Sport, and Events	<a href="#">View Courses &gt;</a>
✓ REC 401 - Advanced Seminar on the Socio-Cultural and Behavioural Dimensions of Leisure	<a href="#">View Courses &gt;</a>
✓ REC 373 - Qualitative Approaches to Leisure Research	<a href="#">View Courses &gt;</a>
✓ REC 313 - Amateur Sport from Playground to Podium	<a href="#">View Courses &gt;</a>
✓ AFM 123 - Accounting Information for Managers	<a href="#">View Courses &gt;</a>
✓ REC 120 - Experience Design and Delivery	<a href="#">View Courses &gt;</a>
✓ REC 475 - Independent Study: Translating Research for Practice	<a href="#">View Courses &gt;</a>
✓ REC 471A - Honours Thesis Proposal	<a href="#">View Courses &gt;</a>
✓ REC 405 - Leisure and Well-Being	<a href="#">View Courses &gt;</a>
✓ REC 151 - Foundations of Therapeutic Recreation Practice	<a href="#">View Courses &gt;</a>
✓ REC 213 - The Business of Professional Sport	<a href="#">View Courses &gt;</a>
✓ REC 312 - Practicum in Recreation, Sport, and Tourism	<a href="#">View Courses &gt;</a>

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**For Discussion****Open Session****To:** Senate**Sponsor:** Vivek Goel, President and Vice-Chancellor  
**Contact Information:** Office of the President**Presenter:** Michael Dorr, Associate Vice-President, Associate Vice-President, Marketing and Brand Strategy  
Melanie Will, Director, Talent Management  
**Contact Information:** (feedback to: <https://uwaterloo.ca/values/contact-us>)**Date of Meeting:** May 6, 2024**Agenda Item Identification:** 10(a) Waterloo Values - Review of Draft Values Statement**Recommendation/Motion:**

That Senate endorse the Values Statement as presented in the attachment to this report, and further to recommend that the Board of Governors give final approval to the same Values Statement.

**Summary:**

The need to review and update our institutional values has been raised as part of several recent reports. The [President's Anti-Racism Taskforce \(PART\) Report](#) recommended revision of the institution's values to include anti-racist and anti-oppression beliefs. [Waterloo at 100](#), the University's strategic vision, also listed this exercise as part of its next steps in advancing the vision and to help establish the culture required to meet the vision's bold aspirations. The report from the [Provost's Advisory Committee on Building a Resilient University of Waterloo](#) also highlighted the importance of addressing organizational culture and operational processes that encourage and depend on greater coordination and collaboration among other desired features – leading to the concept of “One Waterloo”. In discussions, it was apparent that the current values, adopted as part of the [University of Waterloo Strategic Plan 2020-2025 \(Connecting Imagination with Impact\)](#), were not understood or used by many members of the community.

The draft values statement is the result of consultations across the University community over the past year. Through the consultations, the team affirmed similar perspectives from a broad range of community stakeholders for the need for a shift from the prevailing culture and organizational structures at the University, which often result in siloed work, inefficiencies, and missed opportunities for greater effectiveness and impact. The proposed Waterloo's values are thus seen as an integral component of shaping our organization's culture and by extension the University's impact in the world through its people.

The draft values statement includes an Introduction carrying key messages that supplement the set of three values proposed. The Introduction highlights the importance of the broader values and culture

initiative underway, noting that a plan will follow once the values are finalized. The plan will outline the work ahead in linking behaviours to practices for everyone in our community to connect to and uphold.

### **Jurisdictional Information**

This item is submitted to Senate in accordance with the University of Waterloo Act, 1972, section 22:

“Powers of the Senate

...

(j) to undertake, consider and co-ordinate long-range academic planning;  
(k) to consider and to recommend to the Board of Governors policies concerning the internal allocation or use of University resources;”

### **Governance Path:**

The draft values statement was recently reviewed at the Senate Long Range Planning Committee (April 10, 2024) where feedback was provided and incorporated. Prior, the values received input from all key administrative and academic leadership governance bodies: President and Vice-Presidents, Deans’ Council, and Executive Council (scheduled for April 11). Last year, at the Senate and Board Retreat (September 27, 2023), members engaged with the values team and provided direction on the approach and initial frame of values. We are seeking Senate’s review and recommendation to the Board for endorsement at its June 18, 2024 meeting.

### **Highlights:**

The values statement contains introductory text that highlights the call for action from Waterloo at 100 to revisit our values to help build an empowered culture with an emphasis on accountability, nimbleness, and impact. This includes instilling collaboration as a mindset and skill for all in our community. This broader work in values and culture is grounded in imperatives for health and wellness, decolonization and Indigenization, equity and anti-racism, coordination and collaboration across disciplines and organizational boundaries, and the sustenance of excellence across mission-critical activities. Beyond the statement, the values will lead to behaviours embedded in everything we do and practiced by all that make up our community. The values also reflect our history and institutional differentiators, important to linking our future aspirations to our identity as an unconventional research-intensive university offering co-operative education at scale. Three values are proposed to capture what makes Waterloo and its community unique in the world and a leading force into our future: Think Differently, Act with Purpose, and Work Together.

### **Next Steps:**

- Management to consider and incorporate input from Senate.
- Senate to recommend to Board for endorsement.
- Pending endorsement Management will prepare an implementation plan for the values and culture work.

### **Documentation Provided:**

- Draft values statement including an introduction and the values set

# WATERLOO VALUES

May 1, 2024

## INTRODUCTION

The launch of the University of Waterloo's values **represents a commitment**. A commitment to build on our existing cultural strengths; but also identify areas to evolve.

As outlined in the **Waterloo at 100** vision...*"we need to find ways to co-ordinate, collaborate and co-create to build an empowered organizational culture with an emphasis on accountability, nimbleness and impact. This cultural shift will also mean instilling collaboration as a mindset and skill in our students and valuing collaborative connections with community and global partners."*

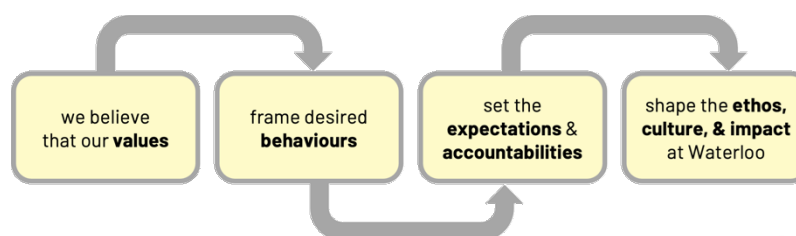
This values initiative is a direct response to Waterloo at 100's call-to-action and is further grounded by the following imperatives:

- Uphold Waterloo's leadership and excellence in education, scholarship, innovation and entrepreneurship
- Ensure the physical and mental health and well-being of our students and employees
- Embrace decolonization, Indigenization, inclusivity, equity, anti-oppression, and antiracism
- Co-ordinate and collaborate across disciplinary and organizational boundaries

Values cannot exist in isolation; thus, we are developing a plan for Waterloo values that is (1) **linked** to behaviours (2) **embedded** into how we work (i.e. "everything") and (3) **practiced** and upheld by everyone.

**Reflecting on our history** – we defied conventions in 1957 when Waterloo was founded, and our co-operative education model was developed. We have been defying convention ever since. Today, the University of Waterloo is home to nearly 50,000 students, faculty and staff – in addition to 250,000+ alumni around the world – representing a wonderfully diverse and complex community. This revised set of values represents a way of connecting us all as **"One Waterloo"**.

The Waterloo culture promotes **innovation, good work**, and endless **curiosity**. For everyone to thrive, we need to foster an environment that is **equitable, responsive, and accountable**. We all have a role to play. By defining our values and embedding them in our daily practice, we are committing to evolve the culture for all at Waterloo.



## At the University of Waterloo, we...

### **THINK DIFFERENTLY** *we are unconventional | we are bold | we are innovative*

It takes **curiosity** to be innovative. It takes **courage** to stand out. At Waterloo, we know that great ideas are born when we **challenge the status quo** and ask **bold questions**. We **embrace risks** – we do not fear failure because we learn from our mistakes.

Our capacity to *think differently* is expanded when we seek out perspectives and experiences that are different from our own. We do our best work when we break free from the ordinary. **Openness, diversity of thought, and reciprocity** are essential.

At Waterloo we **defy convention**, we explore the uncharted and we celebrate uniqueness. This **unconventional spirit** is at our core and will help us continue to disrupt and shape a better future. We are committed to creating an environment that enables innovative and entrepreneurial thinking in all that we do.

### **ACT WITH PURPOSE** *we drive positive impact | we are responsible | we get things done*

We **make a positive impact** in our community and around the world. Our impact is vast, and so is our responsibility to each other, to the community, the environment, and more. We also have a **responsibility to create an environment** that fosters trust, accountability, and foresight. We identify and develop **equitable and sustainable solutions** for humanity and our planet.

We don't simply solve problems – we seek to **deeply understand**, and we ask, “*what problems should we address?*” We identify new opportunities by asking “*why?*” and “*why not?*” We maintain the highest standards for excellence while acting with commitments to ethics, integrity, generosity, and care.

We value action because we **learn through the process of doing**. We value **hands-on experiences** through learning, teaching, research, and work. Experience teaches us, reflection helps us grow.

### **WORK TOGETHER** *we are collaborative | we value community | we are “one Waterloo”*

We promote a **culture of collaboration** – Waterloo is at its best when we work together – which results in fresh thinking, inspiration, and innovative breakthroughs. **Collaboration as a mindset** extends beyond our students, faculty, and staff– it includes alumni, members of our broader Waterloo community, industry partners, and more.

We encourage our community to stand up for one another and **advocate for positive change** through decolonization, Indigenization, inclusivity, equity, anti-oppression, and antiracism. We value the **diverse voices** of our Waterloo community. We respect differences. We believe that our difference is what makes us whole.

We aspire to be “**One Waterloo**”.

## Senate Executive Committee

**For Approval**

**Open Session**

**To:** Senate

**Sponsor/Presenters:**

David DeVidi  
Associate Vice-President, Academic

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

Gen Gauthier-Chalifour  
University Secretary

**Date of Meeting:** May 6, 2024

**Agenda Item Identification:** **TI(a) Senate Governance Review Recommendation:  
Academic Quality Enhancement (AQuE) Committee**

### **Recommendation/Motion:**

That Senate approve the creation of the proposed Academic Quality Enhancement Committee of Senate, as presented.

### **Summary:**

In response to a request to all Senate Committees as part of the Senate Governance Review, both the Senate Graduate & Research Council (SGRC) and Senate Undergraduate Council (SUC) have engaged in a review of their terms of reference and, after a series of strategic discussions that occurred from December 2022 to November 2023, are bringing forward recommendations to Senate Executive Committee.

As part of this process and in consultation with the Provost and Dean's Council, SGRC and SUC are proposing the creation of a new AQuE Committee of Senate. The draft proposal of the committee's composition and remit is included below.

The AQuE Committee would oversee the quality assurance processes related to academic programming and the formation of the new committee would take the current Institutional Quality Assurance Process (IQAP) process from SGRC and SUC. This change would remove a significant volume of work from the SGRC and SUC agendas, allowing those bodies to give greater focus and attention to issues of strategic priority within the remit of those Councils. More importantly, this change will streamline the approval processes for program reviews, progress reports, and any additional quality assurance processes that the University implements for other categories of academic programming while improving the quality of the feedback that programs receive during the approval process.

With initial endorsement of the creation of the new committee from both SGRC and SUC, the Associate Vice-President, Academic (AVPA) and the Associate Vice-President, Graduate Studies and Postdoctoral Affairs (AVPGSPA) have worked in collaboration with the Academic Quality Enhancement Office (formerly the Quality Assurance Office) and the Secretariat to develop draft terms of reference for the AQuE Committee which are included with this report. On recommendation of the Secretariat, it is proposed that the terms of reference lie outside of Bylaw 2, as is done with the Senate Honorary Degrees Committee, as the proposed committee's mandate is from the IQAP and not the University of Waterloo Act (1972). Dean's Council, SUC, and SGRC have now endorsed the proposed terms of reference for recommendation to Senate for final approval through Senate Executive Committee.

### **Governance Path:**

Senate Graduate & Research Council initial endorsement (mm/dd/yy): 11/13/23

Senate Graduate & Research Council endorsement of the terms of reference (mm/dd/yy): 04/08/24

Senate Undergraduate Council initial endorsement (mm/dd/yy): 04/11/23

Senate Undergraduate Council endorsement of the terms of reference (mm/dd/yy): 04/09/24

Senate Executive Committee recommendation to Senate (mm/dd/yy): 04/22/24

### **Proposal:**

That Senate creates a new AQuE Committee of Senate.

### Contextual Remarks:

A review was conducted of comparator institutions across the province, which found that at least seven Ontario universities have a special committee that is responsible for IQAP business. These include some of Waterloo's frequent comparators: McMaster, Ottawa, Queens and Western. In one case, the special committee is a joint committee of the analogous Senate bodies responsible for undergraduate and graduate academic programming; for the remainder, the committee is one created by the Senate (or analogue) and is devoted specifically to IQAP business.

Counting non-voting "resource" members, six of the seven committees from other institutions have memberships of about 10-15 (three have 10 members, two have 12, one has 15), while Western's committee has 24 members. The mandates of the committees vary slightly, but generally each includes receiving and reviewing Final Assessment Reports (FARs), and the local analogue of Progress Reports, with empowerment to approve said reports on behalf of Senate.

The comparators' activities also include reviewing and approving the responses to reviewers' recommendations from the program and dean(s), as well as implementation plans. To varying degrees, the comparators allocate a nominal oversight role for the IQAP processes with some comparators recommending (via the committee Chair(s)) revisions to the IQAP to Senate. A subset of comparators has embedded their committees more closely in the IQAP operations/ processes. For at least two comparators, the committee is involved in the approval of new academic programs.



Most of these committees are chaired by the AVPA/analogue, and one is co-chaired with AVPGSPA/analogue. Some committees include student members, but several do not. Not counting cases where the AVPGSPA analogue is a Dean of Grad Studies, only one requires that a faculty dean be a member.

#### Proposed Structure and Remit for Academic Quality Enhancement Committee:

In consideration of comparators' practices as well as the unique needs at Waterloo, SUC and SGRC have endorsed a proposed committee with ten voting members and two non-voting resources, with membership as follows:

1. The AVPA [co-Chair]
2. The AVPGSPA [co-Chair]
3. Three (3) faculty members appointed from among the membership of SUC [two-year term; Affiliated and Federated Institutions of Waterloo (AFIW) members of SUC are eligible but not required]
4. Three (3) faculty members appointed from among the membership of SGRC [two-year term, with SUC and SGRC terms staggered]
5. One (1) undergraduate student Senator
6. One (1) graduate student Senator
7. Director, Academic Quality Enhancement Office, or delegate, as a non-voting resource
8. Registrar, or delegate, as a non-voting resource

The streamlined remit for the committee recommends a smaller and more efficient committee, hence the proposed membership.

SUC and SGRC have endorsed the proposed remit of the committee, as follows:

1. On behalf of Senate, to review and approve academic quality assurance reports including Final Assessment Reports (FAR) and related implementation plans, and Progress Reports (PR) within the IQAP, with reporting to Senate on all decisions made thereon.
2. On behalf of Senate, to receive and approve all continuous assessments of credentialing programs that fall outside the remit of the IQAP (e.g., for 'microcredentials' or academic initiatives that do not result in degrees or diplomas, such as the Undergraduate Communications Requirements), with reporting to Senate on all decisions made thereon.
3. To report on and make recommendations to Senate on institutional quality assurance processes. This activity will normally occur in consultation with the administrators and staff responsible for the quality assurance function.

While approval of new academic programs is part of the remit at some universities, it is the view of SGRC and SUC that this would not be appropriate for Waterloo at this time and that these matters would continue to be the responsibility of SUC/SGRC.

#### Proposed Processes for Reviewing and Approving FARs and PRs:

SUC and SGRC have also endorsed the following proposed processes for reviewing and approving FARs and PRs.

As a first step, each FAR/PR is to be read by either the AVPA or the AVPGSPA with the choice of reader being based on academic focus, as well as availability. Following this reading, the AVP will communicate comments/questions to the authors of the report for potential revisions. Once the report is judged by the AVP to be sufficiently ready for

further review it will be shared with the other members of the committee, and this may consist also of sharing the report with the less-pressing questions/comments from the AVP.

Based on the likely degree of discussion of a particular FAR/PR (as judged by the AVP), the AVP will bring forward the report to the committee in one of two processes:

- a. Asynchronous/online process: Committee members questions are gathered and shared with the program. When the program's responses are received, all members' questions and the program's responses will be shared with the committee. This process can be iterated as necessary. Approval of the report may be completed via electronic vote.
- b. Synchronous/in-person meeting process: Representatives of the program attend a meeting to answer questions. After hearing from the program representative, the committee votes. Committee members may request for a given process to move from (a) to (b) at any time.

Possible outcomes of the process are:

- a. Approval of the report with no revisions;
- b. Approval of the report contingent upon the completion of minor revisions to be verified and approved by the AQuE Office; or
- c. A request for substantial revisions to the report which requires a restarting of the evaluation process.

The committee then reports to Senate on its approvals, normally three or four times per year.

### **Proposed Terms of Reference:**

The below draft terms of reference for an Academic Quality Enhancement Committee have been developed by the AVPA and AVPGSPA, in collaboration with the Academic Quality Enhancement Office and the Secretariat, following the initial endorsement from both SGRC and SUC. Final approval of the new committee will be by Senate.

### **Academic Quality Enhancement Committee - Terms of reference**

The Academic Quality Enhancement Committee shall have the following powers and duties:

1. To consider, study, and review all matters pertaining to the University's Institutional Quality Assurance Process (IQAP), and make recommendations to Senate, thereon. In the case of editorial changes to the IQAP, consider and approve such changes on behalf of Senate, and report to Senate for information.
2. On behalf of Senate, consider and approve all Final Assessment Reports and Progress Reports within the University's IQAP, and provide Senate with a summary of the committee's deliberations in this regard. Any matter of controversy that might arise may be referred to Senate.
3. On behalf of Senate, consider and approve any aspects of the quality enhancement processes that fall outside the remit of the IQAP, and provide Senate with a summary of the committee's deliberations in this regard. Any matter of controversy that might arise may be referred to Senate.

The membership of this committee shall consist of the following:

- The associate vice-president, academic, who shall co-chair this committee.
- The associate vice-president, graduate studies and postdoctoral affairs, who shall co-chair this committee.
- Three faculty members, drawn from either the ex-officio or elected/appointed members of the Undergraduate Council of Senate, who shall serve for a term of two years, appointed on the recommendation of the Undergraduate Council.
- Three faculty members, drawn from either the ex-officio or elected/appointed members of the Graduate & Research Council of Senate, who shall serve for a term of two years, appointed on the recommendation of the Graduate & Research Council.
- Two members of Senate from the elected student members, one of whom shall be an undergraduate student and one of whom shall be a graduate student.

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**For Information**

**Open Session**

**To:** **Senate**

**Sponsor/Presenter:** Scott Kline, Chair Religious Studies; COU Academic Colleague  
**Contact Information** [scott.kline@uwaterloo.ca](mailto:scott.kline@uwaterloo.ca)

**Date of Meeting:** May 6, 2024

**Agenda Item Identification:** **12) Report from COU Academic Colleague**

The following is a summary of meetings since my last report in May 2023.

### Summary of Meetings

#### 1. Academic Colleagues Meeting, August 15-16, 2023

**Discussion Theme:** Wellbeing of International Students: Solutions from Design Thinking

Dr. Liliane Dionne, Faculty of Education, University of Ottawa, presented research on the Wellbeing of International Students. Using a design-thinking approach, which included peer interviews between graduating BEd students (solution-makers) and international students at the University of Ottawa, Dr. Dionne and her colleagues developed creative solutions to improve the wellbeing of international students on the University campus, including a number of attempts to connect students with their natural environments. This led to initiatives to enhance campus art and to create more opportunities to socialize and study outdoors. During the discussion, Colleagues reflected on how they might contribute to improving the wellbeing of international students and on the recommendations of COU's International Education Working Group, which we had received an update on at the February 2023 meeting.

#### Updates and Reports—Highlights

COU President Steve Orsini delivered an update on COU's activities in support of the Ontario government's [Blue-Ribbon Panel](#) and shared a preview of his presentation on housing for the upcoming Association of Municipalities Ontario (AMO) Conference.

#### 2. 316<sup>th</sup> Meeting of Council, October 16, 2023

I want to highlight two items in the agenda: 1) The Colleagues led a discussion on the topic of Mitigating Anti-LGBTQ2S+ Movements and Promoting Safe Spaces on Campus. A few Colleagues highlighted practices at their universities and proposed additional actions that would help ensure the campuses are places where members of the university community can express themselves freely without fear of reprisal or physical harm. A few members of Council expressed interest in future discussions related to the role of the university ensuring freedom of expression on their campus. 2) Steven Orsini provided a brief update on COU's increasing activities related to the release of Blue Ribbon Panel report and recommendations.

### 3. Academic Colleagues Meeting, December 12-13, 2023

**Discussion Theme:** Free Expression in Relation to Geopolitical Events

Dr. James L. Turk, Director of the Centre for Free Expression, Toronto Metropolitan University, met with COU Academic Colleagues to discuss freedom of expression and academic freedom on university campus. One focus was on the University of Chicago Kalven Committee’s “[Report on the University’s Role in Political and Social Action](#) (1967).” Turk notes that the Kalven Report’s language of “institutional neutrality” is often mischaracterized as universities should play no role in political and social debates. This mischaracterization, Turk argues, misses the point made in the Kalven Report: “A university has a great and unique role to play in fostering the development of social and political values in a society.” The distinction the Kalven Report makes is that the university, as an institution, must remain neutral out of respect for free inquiry on the part of faculty and students. As a result, universities play a central role in political and social change *not* by senior leaders taking formal positions on political and social matters on behalf of their institutions but, rather, by ensuring that universities remain a forum for faculty and students to freely question, challenge, inquire, and take positions on political and social matters. Drawing on a [Stanford University update](#) on freedom of expression, from October 2023, Academic Colleagues discussed instances in which universities, fulfilling their operational responsibilities, sometimes take positions that have political and social ramifications such as decisions regarding investments. When such concerns arise, universities must continue to ensure that faculty and students remain free to exercise their freedom of expression and that faculty remain free to exercise their academic freedom. In all cases, universities must comply with existing laws and government standards (e.g., Criminal Code, labour standards).

#### Updates and Reports—Highlights

*Steve Orsini, the COU President*, reported that COU is asking for a timely response from government on the implementation of the Blue-Ribbon Panel report, specifically the recommendations on increasing tuition and operating funding. The President also noted COU recently published an efficiencies report that provides a comprehensive response to the government’s request that universities are committed to greater efficiencies. At the same time, it was noted that the government has a role to play in ensuring the financial sustainability of institutions in terms of increasing tuition and operating grants and in reducing costs to the system (e.g., excessive reporting, red tape and unfunded mandates). As a further response, COU is continuing with its escalating advocacy campaign and is working with provincial associations (such as the Ontario University Student Alliance, and the Ontario Chamber of Commerce and Colleges Ontario) on joint advocacy.

### 4. Academic Colleagues Meeting, February 13-14, 2024

**Discussion Theme:** Ontario Student Leadership and Advocacy

Vivan Chiem, President, and Malika Dhanani, Executive Director from the Ontario University Student Alliance (OUSA) joined Academic Colleagues for a discussion of pressing matters facing university students. Among the matters highlighted in their presentation were mental health, accessibility, housing, and food insecurity. It was noted that OUSA is also focused on the matter of sector sustainability (e.g., constrained university revenues through tuition and grant freezes) and awaiting the Blue-Ribbon Panel Report. Academic Colleagues took a particularly keen interest in issue of food insecurity, with a number noting that this is a “town and gown” issue that requires shared vision and integrated response.

#### Updates and Reports—Highlights

*Steve Orsini, President of COU*, briefed Colleagues on COU increasing efforts to receive a government response on the Blue-Ribbon Panel Report. With a promised end-of-February announcement, COU is continuing to advocate for a response that fully embraces the financial recommendations in the Blue-Ribbon Panel Report. Orsini reported that at least 10 Ontario universities are facing deficit budgets, with a number of them facing serious financial situations without substantial increases in revenue from

government grant, tuition, or both. Orsini acknowledge that any additional revenue would likely not come from tuition but, rather, government grant.

## 5. Academic Colleagues Meeting, April 3-4, 2024

**Discussion Theme:** University Governance

Cheryl Foy, the former University Secretary and In-House Counsel at Ontario Tech University, current President of Strategic Governance Consulting Services Ltd., and the author of [An Introduction to University Governance](#), provided Colleagues with an overview of approaches to university governance and contemporary challenges facing governance. She focused on five themes: 1) the relationship between university governance and institutional autonomy; 2) shared governance as a system and its models; 3) the roles of boards and academic governing bodies; 4) the importance of paying attention to academic governing bodies (senates); and 5) the role of faculty association in governance. The discussion concentrated on the necessity of universities undertaking educational opportunities for their board and senate members to understand the unique roles each plays in collegial governance. Foy made the point that a lack of understanding of members' various roles often provides the basis for a breakdown in communication and trust among boards, senior leadership, and academic governing bodies.

### Updates and Reports—Highlights

*Steve Orsini, President of COU*, briefed Colleagues on COU's response to the Blue-Ribbon Panel Report. On behalf of COU, Orsini expressed concern that the funding recommendations in the Blue-Ribbon Panel Report were not adopted by the Ontario government. Echoing the COU statement "[Ontario's Response Falls Far Short of Blue Ribbon Panel Recommendations](#)" (Feb. 26, 2024), Orsini stated that, while the additional funding provided by Government is welcomed, it does not adequately address the revenue shortfalls created by the multi-year tuition and grant freezes, which will result in further budgetary pressures on a majority of Ontario universities into the future. With the passage of Bill 166, which places a cap on international student study permits, budget pressures will likely become more acute.

## 6. 317<sup>th</sup> Meeting of Council, April 4, 2024

The primary focus of the COU Council meeting was the transition of COU to conform with the Ontario Not-For-Profit Corporations Act (ONCA). While the membership on COU Council did not change, the governing structure and members' responsibilities changed to conform with ONCA. Please contact Scott Kline if you would like further information on the changes.

### Updates and Reports—Highlights

The Council agenda typically includes a presentation from the Colleagues. This meeting, however, the Colleagues decided to forgo a presentation due to the agenda being full of governance matters related to the COU transition. The Colleagues provided a brief report on their meetings.

*Steve Orsini, President of COU*, briefed Council on the Blue-Ribbon Panel Report. He reiterated that the funding provided by Government is welcomed, but it does not adequately address the revenue shortfalls created by the multi-year tuition and grant freezes, which will result in further budgetary pressures on most Ontario universities into the future. These shortfalls will likely be exacerbated by the passage of federal legislation, with Bill 166, to limit the number of international students permitted to study in Canada.

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## Honorary Degrees Committee

**For Information**

**Open Session**

**To:** Senate

**Sponsor:** Vivek Goel  
President and Vice-chancellor

James W.E. Rush  
Vice-President, Academic and Provost

**Presenter:** Vivek Goel  
**Contact Information:** [president@uwaterloo.ca](mailto:president@uwaterloo.ca)

**Date of Meeting:** May 6, 2024

**Agenda Item Identification:** **13) Report – Honorary Degrees Committee:  
2024 Spring Convocation List of Honorands**

### Summary:

The [Honorary Degrees Committee](#) announces the 2024 Spring Convocation List of Honorands.

(S) = speaker

Faculty of Environment: Tuesday, June 11, 2024, 10:00 a.m.

- Sheryl Kennedy – Honorary Doctor of Environment (S)
- Jean Andrey - Honorary Member of the University

Faculty of Health: Tuesday, June 11, 2024, 2:30 p.m.

- Rick Hansen – Honorary Doctor of Law (S)
- Margaret Burnett - Honorary Member of the University
- Rhona Hanning - Distinguished Professor Emerita
- Ron McCarville - Distinguished Professor Emeritus
- Tina Roberts - Honorary Member of the University

Faculty of Mathematics: Wednesday, June 12, 2024, 10:00 a.m.

- Vinton Cerf – Honorary Doctor of Mathematics (S)
- Ian Munro - Distinguished Professor Emeritus
- Lawrence Folland - Honorary Member of the University

Faculty of Mathematics: Wednesday, June 12, 2024, 2:30 p.m.

- TBD – Invited Guest Speaker (S)

Faculty of Mathematics: Wednesday, June 12, 2024, 6:30 p.m.

- Ian Stewart – Honorary Doctor of Mathematics (S)

Faculty of Arts: Thursday, June 13, 2025, 10:00 a.m.

- TBD – Invited Guest Speaker (S)

Faculty of Arts: Thursday, June 13, 2024, 2:30 p.m.

- Brad Regehr – Honorary Doctor of Letters (S)
- Collin MacLeod – Distinguished Professor Emeritus

Faculty of Arts: Thursday, June 13, 2024, 6:30 p.m.

- Dominic Barton – Chancellor Emeritus
- Patricia O'Brien – Distinguished Professor Emerita
- Donna Sutherland – Honorary Member of the University
- Alan Webb – Distinguished Professor Emeritus
- Christine Wiedman – Distinguished Professor Emerita

Faculty of Science: Friday, June 14, 2024, 10:00 a.m.

- Yvonne Stevens – Invited Guest Speaker (S)

Faculty of Science: Friday, June 14, 2024, 2:30 p.m.

- Scott Tremaine – Honorary Doctor of Science (S)

Faculty of Engineering: Friday, June 14, 2023, 6:30 p.m.

- TBD – Invited Guest Speaker (S)
- Murray Zink – Honorary Member of the University

Faculty of Engineering: Saturday, June 15, 2023, 10:00 a.m.

- Claudette McGowan – Honorary Doctor of Law (S)

Faculty of Engineering: Saturday, June 15, 2023, 2:30 p.m.

- David & Linda Cornfield – Honorary Doctor of Law (S)
- David Kibble – Honorary Member of the University

Faculty of Engineering: Saturday, June 17, 2023, 6:30 p.m.

- Bruce Kuwabara – Honorary Doctor of Engineering (S)
- Neil Thomson – Distinguished Professor Emeritus

## **Biographies:**

### **Sheryl Kennedy** (DES, Faculty of Environment Ceremony)

Sheryl Kennedy is a Waterloo Alumna who has held several senior positions in Government, Central Banking, Management Consulting, and Financial Services, where she has played a key role in charting the path to keep Canada competitive on a global market and incorporate a holistic approach to finance including sustainability. As a former Deputy Governor at the Bank of Canada and various roles in Economic Development and Financial Sector Policy Branches of the Department of Finance of the Government of Canada, she brings valuable expertise and

perspective of Finance and Canadian economy to the many organizations she has and continues to work with. Named one of Canada's Most Powerful Women: Top 100 by the Women's Executive Network and awarded the Women in Capital Markets Leadership Award. Her stellar career and community service incorporate her deep values for inclusive community, curiosity, sustainability, and accountability. She was most recently Chair and prior to that CEO at Promontory Financial Group Canada, now a wholly owned subsidiary of IBM, where she established and led the Canadian arm of the global consulting firm and assisted financial services clients in addressing strategic, risk management (including sustainability and climate change risk), governance, and regulatory compliance challenges. Serving on several boards, she brings her deep knowledge of finance to bear with her passion for sustainability and transformative impact. As a member of the board of governors at the University of Waterloo, Kennedy played a leadership role in Waterloo's commitment in reducing the carbon footprint of its pension and endowment portfolios by 50 percent by the year 2030 and achieving carbon neutrality by 2040. As the Chair of the Advisory group, she masterfully led the stakeholder consultations, discussions, and recommendations to the board. In 2019 Kennedy was recognized by the Faculty of Environment with the Faculty Impact Award for her vast contributions to the Faculty through advocacy, advisory role, philanthropy and mentorship of students.

**Jean Andrey** (Honorary Member of the University, Faculty of Environment Ceremony)

Jean Andrey is a former Dean of the Faculty of Environment and professor emeritus in the Department of Geography and Environmental Management (GEM). Professor Andrey retired in 2022, after a long and distinguished career at the University of Waterloo, which began as a doctoral candidate in GEM. Throughout her career, Professor Andrey was recognized as an exemplary educator with several awards for both teaching and graduate supervision. Professor Andrey served on governing bodies at both the University and its affiliated and federated institutions; taking leadership roles at organizations such as the Royal Canadian Geographic Society, Canadian Association of Geographers, and the Sustainable Development Solutions Network; and serving as an expert on panels like the Canadian Institute for Climate Choices Adaptation Panel. Professor Andrey's contributions have been recognized with awards including the Clean 50 Lifetime Achievement Award for Exceptional Contribution to the Clean Economy (2023) and President's Award for Outstanding Service to the Canadian Association of Geographers (2016). As an academic administrator, Professor Andrey began her career in the role of associate dean of graduate studies for the Faculty of Environment, serving from 2005-2008 and then again from 2012-2014. When the Faculty's dean departed mid-term, Professor Andrey was asked and agreed to serve as interim dean. Professor Andrey provided strong leadership in the Faculty for two terms as Dean, during which she fostered a greater sense of community, led the implementation of the 2013-2018 and development of the 2020-2025 strategic plans, hosted the Faculty's 50th anniversary celebrations, oversaw the launch of more than four major research centres and institutes, increased the number of Canada Research Chairs from three to eight and University Research Chairs from one to four, and supported the development of innovative new programs in climate and environmental change, climate risk management, sustainability management, and sustainable financial management, to name a few. At the University level, Professor Andrey's leadership was critical to the launch of the Sustainability Office and formation of the President's Advisory Committee on Environmental Sustainability (PACES). As co-chair of PACES, Professor Andrey facilitated the development and approval of the University's Environmental Sustainability Policy (Policy 53), Environmental Sustainability Strategy, and the *Shift:Neutral* climate action plan. Professor Andrey also chaired the Canadian branch of the Sustainable Development Solutions Network (SDSN Canada), a global initiative under the auspices of the United Nations and helped it grow to include 60 post-secondary institutions, 16 youth hubs, and communities of practice for SDG localization with over 170 members.

### **Rick Hansen** (LLD, Faculty of Health Ceremony)

Rick Hansen is a Canadian Paralympic athlete, world-renowned activist and philanthropist for people with disabilities. In his teenage years, he was involved in an accident that paralyzed him from the waist down. Mr. Hansen has made it his passion and life's work to advocate for people who live with disabilities and spinal cord injuries. He has significantly improved accessibility and equal opportunity for persons living with disabilities, and has made tremendous contributions to members of society to enhance their mobility and enrich their lives. Mr. Hansen was the first person with a disability to graduate with a degree in Physical Education from the University of British Columbia. He continued to participate in athletic activities such as wheelchair basketball and wheelchair cross country to challenge stigmas surrounding disabilities. He earned 19 international wheelchair marathon awards, 4 world titles, and 9 Pan America wheelchair gold medals. He also represented Canada in the 1984 Summer Paralympic Games, was a three-time champion of Canada's Disabled Athlete of the Year, was awarded the Queen Elizabeth II Diamond Jubilee Medal, and received an Order of British Columbia as well as a Companion of the Order of Canada. He has received 24 honorary degrees, including at least three from universities across Canada (Acadia University, Athabasca University, and Dalhousie University). Mr. Hansen changed the way the world viewed people living with disabilities when he embarked on his "Man In Motion" world tour in 1985. By 1987, he had raised \$26 million for spinal cord research and raised awareness of the contributions people with disabilities make within an inclusive society. The tour spanned over two years across 34 countries. After his tour, Hansen opened the Rick Hansen Foundation to continue his passion and "Man In Motion" fundraising activities. To date, the foundation has raised over \$360 million dollars for research in spinal cord injury, and programs for youth. The Rick Hansen Foundation Accessibility Certification program promotes universal access to public spaces so that all citizens can participate to their full potential.

### **Margaret Burnett** (Honorary Member of the University, Faculty of Health Ceremony)

Margaret Burnett is a Waterloo alumna whose links to the University of Waterloo go back to the mid-1970s when she joined the 1975 co-op class in the BSc program in Kinesiology, receiving the degree in 1980. She started working part-time in Dr. Howie Green's laboratory as a research assistant in 1981 and began as full-time Biochemistry Lab Manager in 1982. She went on to receive an MSc in Kinesiology in 1983 under Dr. Green's supervision. In 1997, Burnett was hired by the Department of Kinesiology to be the Biochemistry Lab Manager and in 1999 she took on more administrative duties as the Lab and Admin Coordinator for the department. Finally, in 2014 Burnett became the Administrative Officer for the department, a position she held until her retirement in 2023. Burnett's official UW service is from November 1982-2023, a total of 40 years. At the time of Burnett's retirement, she had been responsible for hiring and/or supervising every current staff member in the department and she had onboarded and mentored every current faculty member in the department. In addition to her HR contribution, Burnett was the project manager for the Health Expansion building, which opened in 2016, and the Tech-Town renovations, which was renamed the Toby Jenkins building in 2015. As Administrative Officer in the Department of Kinesiology for 23 years, Burnett worked closely with 5 Department Chairs. Each Department Chair and everyone that Burnett worked with in the Department, Faculty, and University, benefited from her leadership, council, industry, generosity, and integrity. Burnett played a pivotal role in the growth and development of many members of the department, particularly women. Her guidance and willingness to share her knowledge was invaluable. Throughout her career she served on the following committees: Dean Search Committee; Chair Search

Committee; United Way; and Human Resources Job Description Project. Within the community she on volunteered with the following groups: Heidelberg Parks and Rec Committee; Waterloo North Mennonite Church's Stewardship, Fellowship, Welcoming, Funeral support committees; Waterloo Region Athlete of the Year Selection Committee; and the 100 Women Who Care - Waterloo Region Chapter. Her service to the Department of Kinesiology and Health Sciences and to the University of Waterloo is both distinctive and outstanding.

**Rhona Hanning** (Distinguished Professor Emerita, Faculty of Health Ceremony)

Rhona Hanning completed her BSc (1978) from the University of Guelph and her PhD (1986) from the University of Toronto. She is also a registered dietitian and was appointed a Fellow of Dietitians of Canada (1993). Following an impressive career at Laurentian Hospital, The Hospital for Sick Children Toronto, Seneca College, University of Guelph, McMaster University, St. Michael's Hospital Toronto, and the University of Toronto, she joined the University of Waterloo in 2000 as an Associate Professor in the School of Public Health Sciences. She became a Full Professor in 2013, and she served as Associate Chair of Graduate Studies (2003-2005 & 2009) within the School of Public Health Sciences, and the Associate Dean for Graduate Studies (2015-2020) for the Faculty of Health. Dr. Hanning also served as the Faculty of Health Strategic Plan Implementation Lead for Equity, Diversity, and Inclusion (2022-2023) shaping Indigenous-specific trainings within the faculty and beyond as part of the goals and objectives in alignment with the faculty's strategic plan. Dr. Hanning is recognized for her pioneering work and significant impact in community-based participatory food and nutrition research with Indigenous communities, food and nutrition policy and program evaluation and dietary assessment, including development, and the application and evaluation of novel technologies. She has a very strong record of research funding and over 150 journal publications. Impressively, Dr. Hanning's research communications have extended beyond traditional academic venues and have included accessible infographics and videos for community use. Within In the wider scientific community, Dr. Hanning has provided many grant funding reviews for CIHR across several scientific committees. She had also provided numerous manuscript reviews and has ongoing Editorial Board membership with the International Journal of Environmental Research in Public Health. Her professional service includes being an Inaugural and ongoing (2010-18) member of the Board of Directors of the Canadian Foundation for Dietetic Research and the Canadian Nutrition Society EDI committee (2021-2023). Dr. Hanning also has an impressive record of mentorship, with supervision of 21 graduate students and post-doctoral fellows. She was the recipient of the University of Waterloo Award of Excellence in Graduate Supervision (2006). In 2023, she developed and co-taught a pioneering new course with Elder Myeengun Henry in Truth, Reconciliation & Health. In recognition of her outstanding performance across research, teaching and service, Dr. Hanning was awarded three Outstanding Performance Awards over her career (2007, 2010, & 2013).

**Ron McCarville** (Distinguished Professor Emeritus, Faculty of Health Ceremony)

Ron McCarville received his BSc (1977) in Physical Education, BEd (1980) in Education, and MRec (1981) in Physical Education from Acadia University, and PhD (1989) in Recreation, Parks, and Tourism Sciences at Texas A&M University. He joined the University of Waterloo in 1989 as an Assistant Professor in the Department of Recreation and Leisure Studies. Becoming a full Professor in 2001, he served as the Associate Chair, Graduate Studies (2005-2007) in his Department and Associate Dean, Undergraduate Studies (2007-2016) for the Faculty of Health. Professor McCarville contributions to the field of recreation and leisure studies are recognized for their originality and insight. Over a remarkable and influential career, Professor McCarville earned widespread recognition as a

leading scholar in leisure marketing and the field's foremost expert on leisure service pricing in the public sector and service quality. He authored 88 total publications, including 46 refereed journal manuscripts, 10 book chapters, two books, and 30 refereed conference proceedings. His book titles, *Leisure for Canadians* (editions 1 & 2) and *Improving Leisure Services through Marketing Action*, remain required texts within his field for introductory and marketing courses, respectively, therein making his name recognizable at peer institutions across Canada and internationally. He remains the foremost authority on strategic pricing in the provision of leisure services, including the influence of reference pricing, cost information, and outcome messages on willingness to pay for services. He also established himself as the leading expert in the field on service quality in leisure service delivery. In 2002, he was elected to the Academy of Leisure Sciences. He is affectionately known as "Uncle Ron," by generations of RLS student cohorts, and is widely regarded as the most beloved instructor in the history of his department, in no small part because of his amazing ability to connect with his students on a personal level and his unrelenting commitment to advance teaching excellence. His dynamic teaching style, infectious sense of humour, highly personable nature, and authentic approachability led him to receive the Distinguished Teacher Award at the University of Waterloo (2003).

**Tina Roberts** (Honorary Member of the University, Faculty of Health Ceremony)

An alumna of Waterloo, Tina Roberts began her University of Waterloo career in 1981 as a Liaison Officer/Academic Advisor in the Faculty of Applied Health Sciences (AHS). In AHS, she transformed recruitment, student services, alumni relations, and advancement by implementing a research-based approach and creating multiple marketing plans. In 1997, she took on the inaugural position of Director of Marketing & Undergraduate Recruitment (MUR) within the Registrar, a position she held until her retirement in 2021. Her work transformed how the University recruits students across print, digital, and in-person initiatives. As Director of MUR, she led and contributed to multi-disciplinary efforts and university-wide collaborations. Ms. Roberts consistently pursued opportunities to create connections between colleagues. She was asked to support numerous cross-campus initiatives that have proven to be of great credit to the University. Specific examples include the following: member of the Organizational and Human Development pilot mentorship program; member of leadership team of the i3 Challenge, which led to installation of iconic Waterloo campus entrance sign; member of steering committee of the Celebration 2017 Legacy Project; leader of Keystone's communication group; leader of the creation of the award winning new booth for the Ontario Universities Fair; leader of the University's 50th anniversary marketing committee; and founder of the Enrollment Management Marketing Roundtable. Since 1997, Marketing & Undergraduate Recruitment has won 14 CASE District II Accolades Awards and 26 CCAE Prix d'Excellence Awards, and Ms. Roberts was also individually awarded the CASE Quarter Century Achievement Award. She also founded the Fun Run, one of Waterloo's longest-standing alumni and community traditions. Ms. Roberts' contribution to the advancement of undergraduate recruitment and her passion and support for the University of Waterloo throughout her career have been remarkable.

**Vinton Cerf** (Honorary Doctor of Mathematics, Faculty of Mathematics Ceremony)

Widely recognized as one of the founders of the Internet, Dr. Cerf is the co-designer of the TCP/IP protocols and the architecture of the Internet. He holds a B.S. Math in Computer Science from Stanford University and an M.S. and Ph.D in Computer Science from UCLA. Dr. Cerf is Vice President and Chief Internet Evangelist for Google. He has also served in executive positions at MCI, the Corporation for National Research Initiatives, the Defense

Advanced Research Projects Agency (DARPA), and on the faculty of Stanford University. While at MCI, he made significant contributions to the development of the first commercial email system. He is co-founder of the Internet Society (ISOC) and the Internet Corporation for Assigned Names and Numbers (ICANN). He has been on several boards and committees for public, private, and government organizations, which included appointment to the US National Science Board. He has served as Commissioner for the Broadband Commission for Digital Development, a UN organization that aims to increase access to the Internet in developing areas. His work has been recognized by many awards that include the Turing Award for “pioneering work on internetworking, including the design and implementation of the Internet’s basic communications protocols, TCP/IP, and for inspired leadership in networking”. This award is considered the “Nobel Prize of Computer Science”. He has also received the US Presidential Medal of Freedom, the highest civilian honour of the United States, the US National Medal of Technology, the Queen Elizabeth Prize for Engineering, the Prince of Asturias Award (Spain), the Tunisian National Medal of Science, the Japan Prize, and the Charles Stark Draper Award (US). He has been named an Officer of the Legion d’Honneur in France. He has received 29 honorary degrees, from institutions that include ETH Zurich, the University of Twente, and Yale University. He is also the recipient of the IEEE Alexander Graham Bell Medal, the highest honor awarded by IEEE for achievements in telecommunications and engineering.

**Ian Munro** (Distinguished Professor Emeritus, Faculty of Mathematics Ceremony)

J. Ian Munro completed his BA (1968) from the University of New Brunswick, his MSc (1969) from the University of British Columbia, and his PhD (1971) from the University of Toronto. He joined the University of Waterloo in 1971 as an Assistant Professor in the Department of Applied Analysis and Computer Science which is now the David R. Cheriton School of Computer Science. Dr. Munro was later promoted to Associate Professor (1975), then Professor (1981), and finally University Professor (2006). He has served as Associate Chairs, Graduate (1976-77) and Undergraduate (1980-82) for Computer Science, and as Director of the Institute for Computer Research (1986-1989). He was also a member of the board for the Faculty of Mathematics’ Centre for Education in Mathematics and Computing (1995-2015). He retired in 2023 after more than 50 years at the University of Waterloo. Dr. Munro’s research has focused on data structures and algorithms, and he held the Canada Research Chair in Algorithm Design (2001-2022). His work has impacted generations of scientists and scholars and laid the foundation for some of the most exciting work happening in computer science today. Dr. Munro has published more than 250 papers in the very top journals and conferences and has truly transformed his field. Along with his research portfolio, Dr. Munro has also been a transformative supervisor, mentor, and teacher. He supervised the work of 19 post-doctoral fellows, 25 PhD students, and 50 master’s students. He developed and taught the first two course sequence in Computer Science aimed at those in less technical subjects. In the 1990’s his focus was heavily on introductory Computer Science, but he also developed and taught many times second and third year level courses in core Computer Science. His work has been recognized by his election as a Fellow of the Royal Society of Canada (2003) and Fellow of the Association for Computing Machinery (2008), as well as by receiving the ITRC Innovation Award for Excellence in Strategic Research (1995), the Marsland Family Faculty Research Fellow (2000-2001), Pioneer of Computer Science in Canada (2005), and the CS-Can Lifetime Achievement Award (2017).

**Lawrence Folland** (Honorary Member of the University, Faculty of Mathematics Ceremony)

Lawrence Folland the former manager of the Computer Science Computing Facility (CSCF) group. He joined the University of Waterloo in June 2003 after previously working as technology specialist in the software industry.



Folland was hired as the inaugural manager of the CSCF Research Support group and participated in devising the strategic direction and organization of CSCF. Folland oversaw the development of many specialized software tools and services, some of which have gained wide recognition and see high usage across the entire university, such as the Exam Management System (EMS) and the Online Academic Tools (OAT) database infrastructure. In his role as technical manager, he has overseen a number of important research computing initiatives in CS and Math. Folland has been a long-time contributor to the Staff Association and has volunteered in various administrative roles and served on many important committees. He has participated in critical initiatives, such as renegotiation of the Memorandum of Agreement, addressing the Province's Bill 124, and revising Policy 33 on Ethical Behaviour. He served as the President of the Staff Association from 2019-2020 and has also served on the fundraising and social committee. Folland has made it his mission to preserve and showcase the rich history of computing at Waterloo by co-founding the University of Waterloo Computer Museum. With his collaborators, he has worked tirelessly since 2008 to collect and curate artifacts to document Waterloo's famous "red room" along with other milestones of the development of the field of computing. In the Cheriton School of Computer Science, he has introduced and led several social activities for community building in and outside of work. In his early years working on library software, he created "The Data Magician", which is a globally used data conversion tool. Folland retired in 2022 after a distinguished and impactful career at the University of Waterloo. He continues to maintain a close relationship with the University and especially with the David R. Cheriton School of Computer Science through his volunteer work in expanding the Computer Science Museum that he was instrumental in establishing.

#### **Ian Stewart** (Honorary Doctor of Mathematics, Faculty of Mathematics Ceremony)

Ian Stewart is an Emeritus Professor of Mathematics at the University of Warwick. His research lies in the area of dynamical systems, especially singularity theory, bifurcation theory and the application of these ideas to problems in science. Stewart obtained his Bachelor of Arts (1966) from the University of Cambridge and his Doctor of Philosophy (1969) from the University of Warwick, where he remained on as a faculty member. Dr. Stewart has published over 190 papers and is the co-author of several research texts including *The Symmetry Perspective*, *Singularities and Groups in Bifurcation Theory*, and *Catastrophe Theory and Its Applications*. In pioneering work in the 1980's, Dr. Stewart, with Martin Golubitsky and David Schaeffer, married the ideas of group theory and bifurcation theory to show how differential equations with symmetry give rise to solutions with a rich structure and how this structure changes as model parameters are varied. A monograph on this work, published in 1985, has more than 4,000 citations and continues to be highly cited. In addition to his research, Dr. Stewart has made outstanding contributions to the popularization of mathematics. He has published more than 120 books, including a number of bestselling and award-winning books. He is also a critically acclaimed science fiction author, has contributed to a wide range of newspapers and magazines worldwide, and has made more than 400 hundred radio broadcasts and 80 television appearances. Dr. Stewart is a Fellow of the Royal Society (2001), and has received many awards including the Royal Society's Faraday Medal (1995), the IMA Gold Medal (2000), the AAAS Public Understanding of Science and Technology Award and the Balaguer Prize (2001), the LMS/IMA Zeeman Medal (2008), and the Lewis Thomas Prize (2015). His book "Nature's Numbers" was shortlisted for the 1996 Rhone-Poulenc Prize for Science Books, and "Why Beauty is Truth" was shortlisted for the 2008 Royal Society Prize for Science Books. His iPad app "Incredible Numbers" won the Digital Book Award for Best Nonfiction App in 2015 and was selected by Apple as one of the best apps of 2014.



### **Brad Regehr** (DLitt, Faculty of Arts Ceremony)

Brad Regehr is an accomplished Indigenous lawyer that has made significant contributions towards reconciliation by representing First Nations on a variety of issues including land treaty rights and tax laws. Regehr completed an Honours Bachelor of Arts degree (History) from the University of Waterloo in 1993 and then went on to complete a Bachelor of Laws (LL.B.) degree at the University of Manitoba in 1996. A member of the Peter Ballantyne Cree Nation in Saskatchewan, Regehr has focused much of his advocacy work on reconciliation, advocating for all Canadians to learn about the devastating effects of the residential school system and the multi-generations impacts that it has had on Indigenous peoples. Regehr has held numerous positions within the Manitoba Bar Association as well as the Canadian Bar Association (CBA) including Vice-Chair, National Sections Council, CBA (2015-17); Chair, National Aboriginal Law Section, CBA (2010-12), among others. Most notable are his appointments as the first Indigenous lawyer as President of the Manitoba Bar Association (2015-17) as well as President of the CBA (2020-21; noteworthy as it marks a first in the CBA's 76-year history). During his tenure as President of the CBA, Regehr made the Truth and Reconciliation Commission's Calls to Action his personal priority. Under his leadership, the CBA launched a "tool kit" including templates for firms to guide them in attracting, hiring, and retaining Indigenous lawyers, articling students, and staff. In November 2021, Regehr was presented with the Special Recognition Award by the Canadian Bar Association – British Columbia Branch's Aboriginal Lawyers Focus. In January 2022, he appointed by the Queen's (now King's) Counsel by the Province of Manitoba.

### **Collin MacLeod** (Distinguished Professor Emeritus, Faculty of Arts Ceremony)

Colin MacLeod completed his BA (1971) from McGill University and PhD (1975) from the University of Washington. He joined the University of Waterloo in the Department of Psychology in 2003 as a Full Professor following a 25-year career at the University of Toronto. He served as the Chair of the Department of Psychology (2012-2019) and interim Associate Dean of Research in the Faculty of Arts (2019). Professor MacLeod is the lead researcher at the Memory, Attention, and Cognition Lab (MACL), which focus is to examine human cognitive skills, especially attention, learning, and memory with an emphasis on the fundamental processes that underlie memory encoding and retrieval. He is recognized as one of the foremost experts in the world in attention, learning, and memory. Over his career, Professor MacLeod published over 130 journal articles, four edited books, and more than 20 book chapters in highly visible venues. He has a citation count of over 20,340, with a remarkable h-index of 57 and an i10-index of 115. He has taught and mentored thousands of students and has been a pivotal instructor of "Introduction to Psychology", in which he taught more than 700 students on average per semester. Professor MacLeod has successfully supervised 19 PhD students and five postdocs. He has served as editor of both the Canadian Journal of Experimental Psychology and Memory & Cognition. Professor MacLeod has also served as President of the Canadian Society for Brain, Behaviour, and Cognitive Science and was a member of the Governing Board of the Psychonomic Society, where he also served as Chair of the Publications Committee. Professor MacLeod has received numerous distinctions including: the Gold Medal Award for Distinguished Lifetime Contributions to Canadian Psychology from the Canadian Psychology Association (2018); the Donald O. Hebb Distinguished Contribution Award from the Canadian Society for Brain, Behaviour, and Cognitive Science (2010); the Donald O. Hebb Award for Distinguished Contributions to Psychology as a Science from the Canadian Psychological Association (2012); as well as the Richard C. Tees Distinguished Leadership Award from the Canadian Society for Brain, Behaviour, and Cognitive Science (2017). Professor MacLeod was elected as a Fellow of the Royal Society of Canada (2016). He is also an elected Fellow of the Association for Psychological Science (1998), the American Psychological Association (1994 for Division 3; 1998 for Division 1), the Psychonomic Society (2014;

Emeritus Fellow in 2023), and the Canadian Psychological Association (2000; Honorary Life Fellow designation in 2023). In addition to these distinctions, Professor MacLeod has received multiple Outstanding Performance Awards from the University of Waterloo (2007, 2010, 2013, & 2017).

**Dominic Barton** (Chancellor Emeritus, Faculty of Arts Ceremony)

Dominic Barton, business and governance expert and former diplomat, currently serves as the University of Waterloo's 11th Chancellor. As a two-term Chancellor (July 2018 - July 2024), his dedication to our University has accompanied him around the world. With an unyielding belief in the potential of every individual, he has supported and amplified our ability to develop a global network of influential professionals, entrepreneurs, artists, community builders, researchers and international leaders to the broader world. Born in Uganda, Barton received a BA Honours in economics from the University of British Columbia and studied as a Rhodes scholar at Brasenose College at the University of Oxford. He is currently Chair of Rio Tinto and LeapFrog Investments, an impact-investment firm focused on emerging markets. He is also a Senior Advisor and Partner at leading AI investment firm Radical Ventures. Barton is a trustee of the Brookings Institution, a member of the Singapore Economic Development Board's International Advisory Council, and a board member of Memorial Sloan Kettering in New York and the Asia Pacific Foundation Canada. Barton served as Ambassador of Canada to the People's Republic of China (2019-2021); he was the Chair of Teck Resources (2018 - 2019); and was a Senior Partner at McKinsey & Company, serving as Global Managing Partner (2009 - 2018). Barton is the author of more than 80 articles and several books ranging from the role of business in society to leadership and talent development. His recognitions include the INSEAD Business Leader for the World Award (2011), the Korean Order of Civil Merit (Peony Medal, 2013), the Singaporean Public Service Star (2014), the Foreign Policy Association Corporate Social Responsibility Award (2017), and Canada's Public Policy Forum Testimonial Award (2017).

**Patricia O'Brien** (Distinguished Professor Emerita, Faculty of Arts Ceremony)

Patricia O'Brien received her AB (1977) from Cornell University, and MBA (1979) and PhD (1985) from the University of Chicago. Having worked at universities such as the University of Rochester, Massachusetts Institute of Technology, the University of Michigan, the London Business School, and York University, Professor O'Brien began her career at the University of Waterloo's School of Accounting and Finance as a full Professor in 2000. Professor O'Brien has served as Graduate Officer (2008-2012), as Associate Director of Research (2002- 2011), and as PhD Program Director (2017-2020) within the School, and on the tenure and promotion committee in the Faculty of Arts (2007-2012) and the University (2013-2018). Professor O'Brien is best known for her research related to financial analysts, a field in which she was a pioneer in the 1980's and which she remains as one of the top cited scholars. She has had a highly impactful career as a scholar, educator, and contributor to the academic and practicing accounting professions, and is one of the most highly reputed accounting scholars in the history of Canadian academia. Professor O'Brien has over 11,000 citations, an h-index of 32, and has been invited as a plenary speaker and to give paper presentations around the globe. As part of her teaching responsibilities, she has taught courses at the undergraduate, Master's, and Ph.D. level at the University of Waterloo as well as at a number of leading international universities. Her co-authored textbook, Financial Accounting Theory is used in undergraduate, master's and PhD level courses both across Canada and internationally. Professor O'Brien received numerous distinctions throughout her career including most notably the Ernst & Young Professor of Accounting (2004) and the Canadian Academic Accounting Association (CAAA) Haim Falk Award for Distinguished Contribution to

Accounting Thought (2009). Other notable distinctions include her appointment as editor-in-chief of Contemporary Accounting Research (CAR), serving on the board of directors of the CAAA, and serving for over 15 years as a member of the Academic Advisory Council to the Canadian Accounting Standards Board.

**Donna Sutherland** (Honorary Member of the University, Faculty of Arts Ceremony)

Donna Sutherland spent a full career of nearly 40 years at the University of Waterloo making contributions across departments such as Distance Education, the Registrar's Office, the Faculty of Health and the School of Accounting and Finance (SAF). Sutherland came to SAF as the Administrative Officer and served in that role for the last 20 years of her career where she helped shepherd SAF through a period of significant growth. She was the critical individual in terms of developing the SAF staff team and building a culture where it is recognized that all people are making an important contribution to SAF's success. Her positive 'can do' demeanor, wise counsel, and problem-solving abilities were essential to SAF's success. Further, throughout her time in SAF she was called upon to serve on faculty level committees. Prior to the COVID pandemic, she had indicated her plan to retire, however, as a result of that near unprecedented circumstance, she generously put off her initial planned retirement date so as to assist SAF with navigating the extraordinary circumstances, including budget amendments, and related necessary changes. Further, Sutherland played an important role in hiring and mentoring, an impact that continues to ripple across the university even though she has now retired. Sutherland served as a representative in two different Decanal search for two different faculties. She also served on the Hagey Hall 'in fill' Courtyard Project that result in the creation of Founders Hall, a space the benefits all Arts faculty students, and was at the helm when the SAF-wing of Hagey Hall was built. Winner of the 2019 Faculty of Arts Excellence in Service Award, her contribution to the University can also be observed through her service activities. She served as a UW Co-Director for the United Way and encouraged participation in university-wide events such as United Way fundraising, Keystone Campaigns, and faculty-led events such as Arts Dean Advising Committee and Arts recruiting and orientation events. Throughout her career, she has made meaningful contribution to SAF, the Faculty of Health, the Faculty of Arts, and the University of Waterloo as a whole.

**Alan Webb** (Distinguished Professor Emeritus, Faculty of Arts Ceremony)

Alan Webb received his BCom (1985) in Accounting from Mount Allison University, and PhD (2001) in Accounting from the University of Alberta. He became a Chartered Accountant (Nova Scotia) in 1987 and began his academic career at Mount Allison University as an Assistant Professor in 1991. He joined the University of Waterloo in 2000 as an Assistant Professor in what is now the School of Accounting and Finance (SAF). Becoming a Full Professor in 2014, he held the Deloitte Professorship in SAF (2015-2023) and he is the founding Director of the CPA Ontario Centre for Performance Management Research (2017-2023). Professor Webb is one of the most prolific and widely acknowledged scholars in his field. His main areas of research include behavioural consequences of management control system elements such as targets, incentive schemes, and the motivational effects of non-cash rewards. Professor Webb is best known for his research on evaluating and motivating employee performance through the management accounting system of an organization. He has published 25 peer reviewed papers, five case studies and other publications; he has delivered 20 refereed conference presentations and 16 invited lectures; and his work has an h-index of 19 and has garnered over 3095 citations. Professor Webb is also an excellent teacher and supervisor and has contributed to his field by coauthoring an introductory management accounting textbook which is the most widely used accounting textbook in circulation, and by developing a case-based graduate

elective course on performance management and a doctoral seminar on management accounting. His graduate course became a required course that was later adopted by CPA Canada for their professional education program requirements. Within the profession, Professor Webb has taken on a several professional and editorial roles that including: Editor of Contemporary Accounting Research (CAR) (2007-2013); Editor-in-Chief of CAR (2014-2017); Consulting Editor of CAR (2017-2020); Editor-in-Chief of CAR (2020-2023); serving on the Editorial Boards of three top-tier journals of the American Accounting Association, including their highly influential flagship journal, The Accounting Review; and President of the AAA Management Accounting section (2019-2020) with a one-year appointment as President-Elect (2018-2019) and another as Past President (2020-2021). He has received five best paper awards, plus a notable contribution to literature award, and was appointed as a Fellow Chartered Professional Accountant (FCPA) Ontario (2011). In addition to these awards he has also received the Dean's Special Award for continuing service at an outstanding level (2005); the Canadian Academic Association, L.S. Rosen Outstanding Educator Award (2011); and two University of Waterloo Outstanding Performance Awards (2013, 2011).

**Christine Wiedman** (Distinguished Professor Emerita, Faculty of Arts Ceremony)

Christine Wiedman received her BA (1987) and MAcc (1988) from the University of Waterloo (1988), her CA (1989) and CPA (1989) from the Institute of Chartered Accountant of Ontario, and her PhD (1994) from the Johnson Graduate School of Management at Cornell University. Professor Wiedman began her academic career in 1993 as an Assistant Professor at the School of Business Administration at the College of William and Mary and then as an Associate Professor at the Richard Ivey School of Business at Western University (1999). Professor Wiedman joined the University of Waterloo in 2006 as an Associate Professor in the School of Accounting and Finance (SAF). She was promoted to Full Professor in 2011 and held the KPMG Professorship (2009-2021). Professor Wiedman was the SAF PhD Program Director (2007-2010), represented SAF on the PhD Policy Committee (2014), was the coordinator for the faculty mentoring program (2011-2018), and served on Faculty Performance Evaluation Committee (2007-08), Tenure and Promotion (T&P) Committee (2011-2015 & 2021) and UW T&P Appeal Tribunal (2013 & 2015). Professor Wiedman's main areas of research include financial reporting and governance issues, including the determinants of firms' financial reporting and disclosure choices, the role of regulation on corporate fraud, and the interpretation of accounting information by capital market participants. Her most recent projects examine topics such as regulation and aggressive financial reporting, disclosure strategies for restatement firms, managerial learning from the CDS market, as well as issues related to gender bias. Professor Wiedman has garnered close to 2,500 citations, has an h-index of 21, has given several refereed national and international presentations, and has been invited to present her work to professionals at the Ontario Securities Commission, US Securities and Exchange Commission, and the Accounting Standards Oversight Council. She has supervised undergraduate, Master of Accounting, MBA, and PhD students, and has received the L.S. Rosen Outstanding Education Award (2020). She has served on the editorial boards of Contemporary Accounting Research (2007-2020), Accounting Perspectives (2004-2022), Canadian Journal of Administrative Sciences (2004-2022), and as a technical editor of CA Magazine (2008-2011). Other roles include serving as an Academic Advisory Council member to the Accounting Standards Board (2005-2017) and as a member of the Accounting Standards Oversight Council (2017-present). Over the course of Professor Wiedman's academic career she has received two best paper awards at prestigious research conferences; the distinction of Fellow of the Institute of Chartered Accountants (FCA) Ontario (2006); multiple SAF Outstanding Leadership Fellowships (2015, 2017-2019); the SAF Outstanding Research Fellowship (2019-2022); and the University of Waterloo Outstanding Performance Award (2011).

**Yvonne Stevens** (Invited Guest Speaker, Faculty of Science Ceremony)

Yvonne Stevens is the Director of Quality Control at Lyell Immunopharma and Alumna of the University of Waterloo. Ms. Stevens grew up in Geneva Switzerland and attended the University of Waterloo as an international student, receiving a BSc in Biochemistry (1995). In addition to her BSc, she pursued a Master's degree (1998), solidifying her interest in molecular biology and started appreciating the power and potential held by the ability to manipulate the building blocks of life, DNA. She continued to the University of Washington's Primate Research Centre in Seattle, doing HIV research for 6 years. Ms. Stevens' career path continued into research and development at InBios International, a company focused on developing diagnostic kits for infectious diseases where circumstances helped her transition into Quality Control. While developing tests for rapid detection of disease was challenging and rewarding, the appeal of developing curative immunotherapies for blood cancers was compelling. She became Quality Control Manager with Juno Therapeutics where manufacturing therapies for cancer became the most rewarding part of her career. She then went to Lyell Immunopharma, where she now works, which is a new, innovative company committed to using immunotherapy to cure solid tumors.

**Scott Tremaine** (DSc, Faculty of Science Ceremony)

Professor Scott Tremaine, a world-renowned Canadian astrophysicist. He is known for his pioneering work in the field of galactic and planetary dynamics, particularly in establishing the paradigm that every galaxy has a supermassive black hole at its centre. Two of these giant black holes are now famously imaged by the Event Horizon Telescope, which is co-led by Waterloo Astronomers. Professor Tremaine has been recognized for his contributions by several honours, including fellowships from prestigious societies such as the Royal Society of Canada, Royal Society of London, and the American Astronomical Society. He has also been a global leader in the field through his research, mentorship, training, and pedagogy, playing a key role in the development of Astrophysics in Canada, particularly at the University of Waterloo. Dr. Tremaine was an active member of the initial Scientific Advisory Committee of Perimeter Institute in Waterloo and he also served on the inaugural governing board of the Waterloo Centre for Astrophysics, helping to steer it during its initial three years. He has been recognized for his work by receiving three honorary doctorates and is a fellow of the Royal Society of Canada, Royal Society of London and the American Astronomical Society.

**Murray Zink** (Honorary Member of the University, Faculty of Engineering Ceremony)

Murray Zink is a Waterloo alumnus, having received his BAsC and MAsC in Mechanical Engineering at the University of Waterloo. Zink worked as an Instructional Support Coordinator at the University from 2007 until his retirement in 2022, coordinating and delivering professional development courses, ultimately supporting over 15,000 students. During his time as a staff member, he demonstrated excellence as a champion of exceptional student support continually advocating for students, enhancing students' experiences, and providing his colleagues with direction and support. During this time his passion also led him to engage in considerable volunteer activities above and beyond his role, interacting with other departments, faculties, and external organizations, including: judging for Sir Sanford Flemming debates and WEC competitions; acting as a CEE representative to Waterloo Cases in Design Engineering (WCDE); volunteering for UW move-in day with Campus Housing since 2011; and acting as a Camp 15 warden and liaison with Faculty of Engineering responsible for conducting Iron Ring ceremonies since 2012. Most recently Zink cofounded 4RepairKW and the UWRepairHub with support, both financial and in-

kind, from the Sustainability Office and the Sedra Student Design Centre. These Repair Hubs support students and members of the broader Kitchener-Waterloo and beyond community in the sustainable practice of repairing household, small electrical items, and more. Even in retirement Murray can be found consistently operating these repair hubs on campus supporting waste reduction and passing along his skill and passion to students and the University community. Murray's passion for sustainability has also led him to providing leadership and support developing and implementing the Campus Housing's waste diversion pilot project. He has continued to support the program volunteering his time, connecting community partners with the University, and assisting in day of facilitation of the program. As a result of this project, over 15,000 pounds have been diverted from landfills over 3 years and created an affordability measure for incoming students to acquire the diverted goods at no cost. Murray's steadfast and consistent approach to seeking sustainable practices and solutions, his passion for students and their experience at the University, and his generosity of time and spirit are the basis upon which Murray has engaged with, supported, and impacted the University.

### **Claudette McGowan** (LLD, Faculty of Engineering Ceremony)

Claudette McGowan is a global information technology leader with more than 18 years of success leading digital transformations, optimizing infrastructure and designing new approaches that improve service experiences. She has worked for high-profile organizations such as Deloitte, Metropolitan Police Services, North York General Hospital, Bank of Montreal and TD Bank. McGowan began her career at BMO in 2000 and held multiple senior leadership roles before joining TD Bank as the Global Executive Officer for Cyber Security in 2020. Outside of the office, McGowan is a mother of two and displays an unwavering commitment to developing and growing meaningful initiatives for her community. She is the author of five children's books and is the founder of the highly successful Black Arts & Innovation Expo, an annual event that celebrates the contributions of Black Canadians to science, technology, engineering, arts and mathematics (STEAM) during Black History Month. An active member of the Canadian innovation ecosystem, she serves as Chair for the Coalition of Innovation Leaders Against Racism (CILAR), a group committed to fighting systemic racism within the innovation economy. CILAR boasts an impressive membership pool of over 40 distinguished senior business men and women from sectors ranging from finance, higher learning, city and community leaders. She serves multiple high-profile organizations' boards and councils, including SickKids Hospital Foundation, Elevate Technology Festival, Women in the Economy Task Force, the U.S. Consul General of Toronto and Canada's Innovation Council. She also serves on Waterloo's International Advisory Board (IAB). McGowan is the recipient of several prestigious awards, including being named one of Canada's Top 100 Women in Canada by the Women's Executive Network and one of Canada's Top 50 Women in FinTech by the Digital Finance Institute.

### **David & Linda Cornfield** (LLD, Faculty of Engineering Ceremony)

David and Linda Cornfield are engineers, philanthropists, environmentalists, and advocates who are dedicated to making global change. Engineers by trade, they worked for Microsoft in the early nineties, building many of the company's universal product offerings. Since their retirement in their early thirties, they have utilized their expertise in marketing, business, and web design to amplify meaningful causes – most notably as documentary film producers with particular focus on magnifying good governance, civil society, the climate crisis, and the environment. The Cornfields have co-executive produced the high profile documentary films Chasing Ice, Chasing Coral, Inventing Tomorrow, Won't You Be My Neighbor, The Love Bugs, The Social Dilemma and Dark Money. Their



films have seen extraordinary success, having been screened in over 172 countries and receiving numerous award wins and/or nominations of Academy, Peabody, and Emmy Awards. David and Linda Cornfield have also supported education through their patronage of Ashesi University in Ghana, by supporting the travel of a group of Waterloo Engineering's Systems Design professors to help them set up their inaugural engineering program. Thanks to the Cornfields' ongoing support, this connection has blossomed into a mutually beneficial Waterloo-Ashesi partnership, including opportunities for regular idea-sharing and established pathways for research collaboration.

**David Kibble** (Honorary Member of the University, Faculty of Engineering Ceremony)

Dave Kibble is a Waterloo alumnus who has had a career in central IT at the University of Waterloo spanning decades. He has been instrumental in the creation and growth of some of the University's most critical information systems, and in 2013, created Information System & Technology's (IST) first Portfolio Management Group. In 1975, as part of a high school trip from Windsor to meet Math instructors and visit the Red Room, Kibble first arrived at the University of Waterloo. Three years later he would return to Waterloo to begin his post-secondary studies, graduating in 1983 with a Bachelor of Science in Chemical Engineering (with Management Sciences option), having completed six co-operative work terms throughout. He joined Waterloo in 1983 as a programmer/analyst in what was then the Data Processing (DP) department. Kibble went on to hold a project leader role, followed by manager, student systems, and manager, technical services before DP and DCS were reorganized into IST. Within IST, Kibble became director, information systems, followed by director, portfolio management, and later strategic consultant; he also served as acting chief information officer (CIO) when needed. During his time in these key roles, Kibble helped lead the implementation of many of the first information systems that would replace manual and/or non-web based predecessors, including the Quest student information system, JobMine, the Trellis Tri-University Group system, WatIAM, and Raisers Edge. Kibble has always been a strong supporter of staff IT conferences, serving on the WatITis and CANHEIT program committees and presenting regularly at these and other conferences. Kibble's commitment to Waterloo extends beyond IT, having over the years shared his knowledge and insights through student lectures in Math, Computer Science, and Management Sciences. He has also served on the following: the Pension and Benefits Committee; Excellence Canada Steering Committee; Dispute and Resolution Committee (Policy 36); the University Faculty and Staff Credit Union Board; and Staff Association Board. His strong relationships with campus and IT leadership, were pivotal in Kibble's effectiveness in advancing and leading many campus-wide initiative. Kibble's legacy lives on in systems across campus, and in the IT Review (2020) that he authored to lay the strategic foundations for IT at Waterloo going forward.

**Bruce Kuwabara** (DEng, Faculty of Engineering Ceremony)

Bruce Kuwabara is renowned as one of Canada's leading architects and, co-founder of Kuwabara Payne McKenna Blumberg Architects (KPMB). He is an influential practitioner and advocate of architectural excellence with expertise creating and communicating compelling design visions that inspire stakeholders and the wider community. His unwavering belief in the power of architecture to implement social and civic change and maximize cultural, environmental and economic potential has earned him hundreds of awards, including an Officer of the Order of Canada, the Royal Architectural Institute of Canada Gold Medal, the Ontario Association of Architects Lifetime Achievement Award, and more than 15 Governor General Medals of Excellence and Awards of Merit. Having led the design of major cultural, civic, educational, hospitality, healthcare, and performing arts buildings across Canada, the United States and Europe, Mr. Kuwabara's portfolio is incredibly diverse. His work includes projects

such as the LEED Platinum Manitoba Hydro Place in Winnipeg, the Kellogg School of Management at Northwestern University, the Julis Romo Rabinowitz Building and Louis A. Simpson International Building at Princeton University, Canada's National Ballet School, the Canadian Museum of Nature, and the Global Centre for Pluralism in Ottawa. Recent completed works include the Remai Modern Art Gallery of Saskatchewan and the Ronald O. Perelman Center for Political Science and Economics at the University of Pennsylvania. He designed Kitchener City Hall (25 years last year) and the Balsillie School for International Affairs, the only building ever to win a Governor General Award, an American Institute of Architects Award, along with a Royal Institute of British Architecture award. He was also the force behind the exhibition, The Evidence Room, an installation presented at the Venice Biennale in 2016, brought to the Royal Ontario Museum in 2017 and now on view at the Hirshhorn Museum in Washington, DC. Mr. Kuwabara is Chair of the Board of Trustees for the Canadian Centre for Architecture in Montreal, a member of the Design Review Committee for the University of Toronto, and the former chair of Waterfront Toronto's Design Review Panel. He has taught or served as a critic at several architecture schools, including Waterloo, Toronto, Harvard, Manitoba, Cornell and Carleton.

**Neil Thomson** (Distinguished Professor Emeritus, Faculty of Engineering Ceremony)

Neil Thomson received three degrees in Civil and Environmental Engineering from the University Waterloo ending with a PhD, which was awarded in 1987. He joined the University of Waterloo as an Assistant Professor in the Department of Civil and Environmental Engineering the same year, being promoted to the rank of Associate Professor in 1993 and Full Professor in 2000. He served an Associate Chair, Graduate Studies of his department and Chair of the Department of Civil and Environmental Engineering (2008-2016). Professor Thomson has earned a global reputation in research thanks to his significant contributions to soil and groundwater remediation. Recent topics of his research include emerging soil and groundwater remediation technologies, petroleum hydrocarbons and polycyclic aromatic hydrocarbons, chemical oxidants, functional nanoparticles, electrokinetics, high resolution monitoring, isotopes and biomarkers, delivery methods, site characterization, and physical model and comprehensive pilot-scale studies. His publications are of very high quality, appearing in some of the most prestigious journals in his field of research, and are very highly cited. His Google Scholar h-index is 34 and Google Scholar lists more than 3700 citations. He has remained a devoted educator who has delivered several highly rated engineering undergraduate and graduate courses and has been widely recognized for his exceptional teaching abilities, including receiving the Sir Sanford Fleming Teaching Excellence Award (1999). Throughout his academic career he has supervised 67 graduate students who have gone on to have successful careers and achieving prominent positions in academia, government, and engineering. He has also served as the Editor in Chief, Ground Water Monitoring & Remediation a NGWA Publication Journal, and on the Editorial Board, Journal of Contaminant Hydrology and Journal of Advanced Oxidation Technologies. He has been recognized with the Keith E Anderson Award (2020) for scientists and engineers who make outstanding contributions to the National Ground Water Association. He has also been received the Faculty of Engineering's Distinguished Performance Award (2008), and multiple University of Waterloo Outstanding Performance Awards (2005, 2014, & 2018).



<b>Senate Agenda Items</b>  · expected *as needed	<b>May 6, 2024</b>	<b>June 10, 2024</b>	<b>September 23, 2024</b>	<b>October 21, 2024</b> <i>Strategic Plan Annual Update / Waterloo at 100</i>	<b>November 25, 2024</b>	<b>January 27, 2025</b>	<b>March 3, 2025</b>	<b>April 7, 2025</b>
<b>REGULAR AGENDA (including items for information and discussion)</b>								
Minutes	·	·	·	·	·	·	·	·
Business Arising	·	·	·	·	·	·	·	·
<b>LEADERSHIP UPDATES<sup>6</sup></b>								
Report of the Vice-President, Academic & Provost	*	*	*	*	*	*	*	*
Report of the Vice-President, Research and International	*	*	*	*	*	*	*	*
<b>COMMITTEE/COUNCIL REPORTS</b>								
Executive Committee	*	*	*	*	*	*	*	*
Graduate & Research Council (GRC)	·	·	·	·	·	·	·	·
Undergraduate Council (UC)	·	·	·	·	·	·	·	·
Long Range Planning Committee				·		·		·
Fall Update, University Operating Budget				·				
Joint Report of GRC & UC, Academic Calendar Dates <sup>1</sup>					·			
University Committee on Student Appeals Annual Report <sup>1</sup> (Policy 72)					·			
University Appointment Review Committee Annual Report <sup>1</sup> (Policy 76)								·
Finance Committee - Budget Update <sup>3</sup>							·	
Finance Committee - Budget recommendation <sup>2, 3</sup>								·
<b>OTHER SENATE AGENDA ITEMS</b>								
New Senator Orientations (before meeting)	·							
Teaching Awards Committee, appointment of members							·	
Delegation of Roster of Graduands								·
Report of Roster of Graduands			·		·			
Convocation Report – summary of this years’ ceremonies					·			
Undergraduate and Graduate Admissions Update						·		
Conduct Self-Assessment Survey <sup>1</sup>							·	
<b>SENATE PRESENTATIONS</b>								
Presentations from the Presidents of the Faculty Association, Waterloo Undergraduate Association and Graduate Student Association <sup>1</sup>							·	
Strategic Plan Accountability Update <sup>1</sup> (June)		·						
PART Annual Update		·						
Faculty Updates		SCI						

<sup>1</sup> Annual item

<sup>2</sup> Board of Governors approval

<sup>3</sup> Presented by the Vice-President Academic and Provost

<sup>4</sup> Presented by the President and Vice-Chancellor, and Chair of Senate

<sup>5</sup> Presented by the University Secretary

<sup>6</sup> Leadership updates may include such topics as: Talent, We Accelerate Report, Communities (EDI, Sustainability), Waterloo International, etc.

<b>Senate Agenda Items</b>  • expected *as needed	<b>May 6, 2024</b>	<b>June 10, 2024</b>	<b>September 23, 2024</b>	<b>October 21, 2024</b> <i>Strategic Plan Annual Update / Waterloo at 100</i>	<b>November 25, 2024</b>	<b>January 27, 2025</b>	<b>March 3, 2025</b>	<b>April 7, 2025</b>
<b>CONSENT AGENDA</b>								
Reports from Faculties (e.g., appointments, administrative appointments, sabbaticals) <sup>2</sup>	•	•	•	•	•	•	•	•
Tenure and Promotion Report <sup>4</sup>			•					
University Professor Designation <sup>3</sup>								•
Call for Nominations for University Professor <sup>3</sup>			•					
Call for Nominations for Honorary Degree Recipients <sup>4</sup>						•		
Report of the COU Academic Colleague <sup>1</sup>	•							am
Senate Committee Appointments <sup>5</sup>	*	*	•	*	*	*	*	*
<b>CLOSED AGENDA</b>								
Minutes	•	•	•	•	•	•	•	•
Business Arising	•	•	•	•	•	•	•	•
Reports from Committees and Councils	*	*	*	*	*	*	*	*
Honorary Degree Recommendations	*	*	*	*	•	•	*	*
Reports from Search and Review Committees for Policy-based Senior Leadership Appointments and Reappointments	*	*	*	*	*	*	*	*
Report of VP Advancement on Policy 7 <sup>1</sup>		•						

<b>Joint SENATE/BOARD Strategic Plan Focus Sessions 3-4:30</b>	<b>Joint SENATE/BOARD Continuing Education Sessions 3-4:30</b>
• To be determined	• To be determined

**Special Topics for 2024-2025 to be Scheduled:**

- President's Anti-racism Task Force Update (PART)

**For more information:** [secretariat@uwaterloo.ca](mailto:secretariat@uwaterloo.ca)  
[uwaterloo.ca/secretariat](http://uwaterloo.ca/secretariat), NH 3060

<sup>1</sup> Annual item

<sup>2</sup> Board of Governors approval

<sup>3</sup> Presented by the Vice-President Academic and Provost

<sup>4</sup> Presented by the President and Vice-Chancellor, and Chair of Senate

<sup>5</sup> Presented by the University Secretary

<sup>6</sup> Leadership updates may include such topics as: Talent, We Accelerate Report, Communities (EDI, Sustainability), Waterloo International, etc.

## Senate Graduate & Research Council

**For Information**

**Open Session**

**To:** Senate

**Sponsor:** Charmaine Dean  
Vice-President, Research & International

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

**Presenter:** Jeff Casello  
**Contact Information:** [jcasello@uwaterloo.ca](mailto:jcasello@uwaterloo.ca)

**Date of Meeting:** May 6, 2024

**Agenda Item Identification:** **15) Report – Senate Graduate & Research Council**

### Summary:

[Senate Graduate & Research Council](#) met on April 8, 2024 and agreed to forward the following items to Senate for information as part of the consent agenda. On behalf of Senate, the following items were approved:

1. Research Ethics

Council approved the membership of two (2) new members and the role change of two (2) member of the [Human Research Ethics Board \(HREB\)](#), and the renewal of one (1) member of the [Clinical Research Ethics Board \(CREB\)](#).

2. Academic Program Reviews

Following the review of the report and presentation from the programs, Council approved the following report:

- a. Final Assessment Report: [Classical Studies](#)
- b. Progress Report: [French Studies](#)
- c. Progress Report: [Taxation](#)

There were no issues noted in the report.

### 3. Curricular Submissions

Council approved new courses, course changes, course inactivations, and minor program modifications for:

- a. [Faculty of Arts](#) (Anthropology; Classic; Economics; English; French; German; Global Governance; History; Peace and Conflict Studies; Philosophy; Political Science; Psychology; Sociology)
- b. [Faculty of Engineering](#) (Civil and Environmental Engineering; Management Science and Engineering)
- c. [Faculty of Health](#) (Public Health Sciences; Kinesiology and Health Sciences)
- d. [Graduate Studies](#) (Interdisciplinary Studies)

#### **Jurisdictional Information:**

As provided for in [Senate Bylaw 2](#), section 4.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

- c. Receive, consider, study and review briefs on any aspect of graduate studies and research from members of the university.
- f. On behalf of Senate, consider and approve all new graduate courses, the deletion of graduate courses, and proposed minor changes to existing graduate courses and programs, and provide Senate with a brief summary of council's deliberations in this regard. Any matter of controversy that might arise may be referred to Senate.
- i. On behalf of Senate, consider and approve all new graduate scholarships and awards. Any matter of controversy that might arise may be referred to Senate.

## Senate Undergraduate Council

### For Information

### Consent Agenda

### Open Session

**To:** Senate

**Sponsor:** David DeVidi  
Associate Vice-President, Academic

**Presenter:** David DeVidi  
**Contact Information:** [david.devidi@uwaterloo.ca](mailto:david.devidi@uwaterloo.ca)

**Date of Meeting:** May 6, 2024

**Agenda Item Identification:** **16) Report – Senate Undergraduate Council**

### Summary:

[Senate Undergraduate Council](#) met on April 9, 2024 and agreed to forward the following items to Senate for information as part of the consent agenda. On behalf of Senate, the following items were approved:

1. Academic Program Reviews

Following the review of the report and presentation from the programs, Council approved the following report:

- a. Final Assessment Report: [Systems Design Engineering, and Biomedical Engineering](#)
- b. Progress Report: [Communication Studies, and Digital Arts Communication](#)

There were no issues noted in the report.

2. Curricular Submissions

Council approved new courses, course changes, and course inactivations for:

- a. [Faculty of Environment](#): (Dean of Environment Office)
- b. [Faculty of Health](#): (Recreation and Leisure Studies)

**Jurisdictional Information:**

As provided for in [Senate Bylaw 2](#), section 5.03, council is empowered to make approvals on behalf of Senate for a variety of operational matters:

- c. On behalf of Senate; consider and approve all new undergraduate courses; the deletion of undergraduate courses; and proposed changes to existing undergraduate courses and minor changes to programs and/or plans; and provide Senate with a summary of council's deliberations in this regard. Any matter of controversy that might arise may be referred to Senate.
- e. Consider, study and review briefs on any aspect of undergraduate studies from members of the university.

**For Information****Open Session****To:** Senate**Sponsor:** James W.E. Rush, Vice-President, Academic and Provost  
**Contact Information:** [provost@uwaterloo.ca](mailto:provost@uwaterloo.ca)**Presenter:** James W.E. Rush, Vice-President, Academic and Provost  
**Contact Information:** [provost@uwaterloo.ca](mailto:provost@uwaterloo.ca)**Date of Meeting:** **May 6, 2024****Agenda Item Identification:** **17) Report from Senate Long Range Planning Committee****Summary:**

Senate Long Range Planning Committee met on April 10, 2024. A summary of the item discussed is provided for the information of Senate.

## 1. Waterloo Values

The committee reviewed the most current draft of the values statement, and provided feedback on the draft to emphasize strong points and to offer potential improvements for consideration. The feedback will be reviewed by the working group, and the final draft of the Waterloo Values statement will come forward to Senate in May 2024 as a separate item in the regular agenda.

## 2. Integrative Library Space and Utilization Strategy

The committee received a presentation from Beth Namachchivaya, University Librarian, and Paul Fieguth, Associate Vice President - Academic Operations, on prospective activities and plans for an integrative library space and utilization strategy. This is supported by a commission of the provost to transform library services and spaces in line with the Waterloo@100 strategic direction, seeking a long-term space plan with recommendations for near-term programs and space transformations, with congruence with the One University concept. A steering committee has been formed which will link to the campus community, and work in this space will benefit from examining similar transformations underway at comparator institutions to identify the best strategies for Waterloo.

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For Discussion

Open Session

**To:** Senate**Sponsor:** Charmaine B. Dean, Vice President Research and International  
**Contact Information:** [vpri@uwaterloo.ca](mailto:vpri@uwaterloo.ca)**Presenter:** Charmaine B. Dean, Vice President Research and International  
**Contact Information:** [vpri@uwaterloo.ca](mailto:vpri@uwaterloo.ca)**Date of Meeting:** May 6, 2024**Agenda Item Identification:** 18) Report, Vice-President, Research and International - Awards, Distinctions, Grants, Waterloo International Engagements**Summary:**

Presenting the Vice-President, Research and International Report to Senate for May 2024. This report to Senate highlights successful research, international and entrepreneurial outputs and outcomes for the period March 2024 by the thematic areas as outlined in Waterloo's Strategic Plan 2020-25.

**Documentation Provided:**

- Vice-President, Research and International May 2024 Report to Senate

**Vice-President, Research & International  
Report to Senate  
May 2024**

**Introduction**

This report to Senate highlights successful research and international outputs and outcomes for the period March 2024.

**Velocity Highlights:**

**The Velocity Pitch Competition 2024**

This annual pitch competition gives creative, early-stage ventures with potential for cross-industry impact the chance to compete for \$5,000 and obtain further business guidance from Velocity. This year, the competition attracted more than 100 student applications from Faculties across campus. The four winning teams are highlighted below:

**CELLECT (CT Murphy, BAsC. '23, Chemical Engineering and Founder)**

CELLECT was created out of Murphy's fourth-year capstone design project under the thesis supervision of Chemical Engineering professor, Marc Aucoin. CELLECT's innovative technology uses nanomaterials in menstrual products to diagnose HPV and cervical cancer - potentially eliminating the need for Pap smears. "Menstrual blood is such a stigmatized bodily fluid," says Murphy. "But more than half the world's population experiences it so let's use it to be more informed and proactive about their health. Women's health demands better attention and more knowledge, and I want to help make that happen."

**GreaseTech (Minaal Butt, MBET '24 and Co-founder | Jesurun Ramesh, MBET '24 and Co-founder)**

GreaseTech is changing how the manufacturing industry maintains its machinery through their hardware and software that accurately lubricates machine bearings, saving time and money. Using sensors on each bearing, the Grease Tech platform signals lubrication status, making scheduling and maintenance easier for companies and tapping into a \$24 billion North American market opportunity,

**PatientCompanion (Ethan Alvizo, current BAsC. - Biomedical Engineering and Co-founder | Christy Lee, current BAsC. - Biomedical Engineering and Co-founder | Valerie Liu, current BAsC. - Biomedical Engineering and Co-founder)**

PatientCompanion has created a system that enables patients to submit specific requests that are automatically prioritized for nursing staff. The platform intelligently routes non-medical requests, such as those for water or blankets, to personal support workers or volunteers. This innovation promises to alleviate the workload of nurses in hospitals and long-term care facilities.

**SheepIt (Noumaan Kaleem, current - Bachelor of Computer Science and Co-founder | Nathan Philippon, current - Bachelor of Computer Science and Co-founder | Saahibdeep Dhaliwal, current - Bachelor of Computer Science and Co-founder | Josiah Plett, current - Bachelor of Computer Science and Co-founder)**

SheepIt aims to support hobbyist and specialist sheep farmers by electronically monitoring production rather than relying on pencil and paper for data tracking. The innovation fills a need that smaller sheep farmers have as currently this type of solution is only available for industrial farms.

## **Co-operative Education and Velocity 2023 Problem Award Recipients**

The Problem Award is earned by students who provide the best analysis of an important problem relevant to a co-operative education employer or their larger industrial area. The following six students have earned the 2023 award for their solutions:

- **Adrian Jendo, Engineering 4B – Employer: Carta**

Adrian won the problem award for helping facilitate a new web form upload tool to house financial documents. The change improved customer satisfaction while filing documents.

- **Ashley Juraschka, Engineering 4B – Employer: Toronto Dominion Bank**

Ashley won the award for her efforts to resolve issues related to fraud-induced cybercrime caused by deepfakes. While all industries are at risk of attack, Juraschka pinpointed how financial institutions must take precautionary measures.

- **Luna Li, Engineering 3A – Employer: AECON**

While working with Aecon, Li realized that the company was experiencing delays due to an inefficiency with the shipping and tracking of metals. Li aimed to turn this into an efficiency to improve organization.

- **Claire Thompson, Engineering 4A – Employer: University of Waterloo ORTHOtron Laboratory**

While working at the ORTHOtron Laboratory, Thompson researched spinal biomechanics and identified an issue within the research process, specifically related to recruitment and knowledge transfer.

- **Victoria Ventura, Arts 2B – Employer: Romano Law Office**

At the firm, Ventura observed inefficiencies in conducting court proceedings online that could compromise the integrity of justice systems. [insert what she did to combat this].

- **JD Zhu, Engineering 2A – Employer: Grand River Hospital (GRH)**

At GRH Zhu strived to solve an issue related to personalized cancer treatments. Recognizing how slower and costly simulations limited the development of these treatments. Utilizing CompuCell3D and TOPAS programs, Zhu helped improve operations for medical physicists by ensuring accuracy for their patients.

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## **Funded Research Awards:**

### **Canada Research Chairs**

The Canada Research Chairs (CRC) Program invests up to \$311 million per year to attract and retain some of the world's most accomplished and promising minds. Chairholders aim to achieve research excellence in engineering and the natural sciences, health sciences, humanities, and social sciences.

### **Tier 1 CRCs**

A Tier 1 CRC is valued at \$200,000 per year for seven years and renewable one time. Tier 1 CRCs recognize full professors, or associate professors, who are expected to be promoted within two years of the nomination and who are acknowledged by their peers as world leaders in their fields. There are currently 763 active Tier 1 CRCs in Canada.

The following are new and renewed Tier 1 CRCs at the University of Waterloo.

**New: Ruodu, Wang - (Department of Statistics and Actuarial Science)**

**Tier 1 NSERC CRC in Quantitative Risk Management**

Wang studies several topics, including the recently developed theory of “e-values” in statistical testing, as well as modeling and assessing uncertainty. He works with financial institutions, regulators and scientists in other fields to help to design risk management tools and statistical procedures.

**Renewed: Christopher Eliasmith - (Arts and joint appointment in Systems Design Engineering)**

**Tier 1 NSERC CRC in Theoretical in Neuroscience**

Eliasmith is developing a mathematical theory to help understand how brains process information. He hopes to apply his theory to a wide variety of systems in specific parts of the brain. He is doing so by building biologically-realistic models that are involved in perception, motor control and several aspects of cognition.

**Tier 2 CRCs**

A Tier 2 CRC is worth \$100,000 per year for five years, plus \$20,000 per year for five years of Federal Research Funds. The Chairs are renewable one time. Tier 2 CRCs recognize exceptional emerging researchers for having the potential to lead in their field. There are currently 1,263 active Tier 2 CRCs in Canada.

The following are the new and renewed Tier 2 CRCs at the University of Waterloo.

**New: Talena Atfield - (Department of History)**

**Tier 2 SSHRC CRC in Tentewatenikonhra'khánion (We Will Put Our Minds Together)**

Atfield's goal is to contextualize life at Ohswé:ken (Six Nations) during the first quarter of the 20th century. This goal will be met through analysis and interpretation of archival, linguistic, photographic, and material culture by using community-led interviews and talking circles.

**New: Zahid Butt - (School of Public Health Sciences)**

**Tier 2 CIHR CRC in Interdisciplinary Research for Pandemic Preparedness**

Butt's research aims to understand 'syndemics,' - those interrelated interactions between diseases and social and behavioural factors that result in adverse consequences.

**New: Kaylena Ehgoetz Mertens - (Department of Kinesiology and Health Sciences)**

**Tier 2 CIHR CRC in Gait and Neurodegeneration**

Ehgoetz-Martens investigates the relationship between walking behaviour and neurodegeneration with the goal of understanding the complexity of walking to identify at-risk individuals and tracking their progression.

**New: Aukosh Jagannath - (Department of Statistics and Actuarial Science)**

**Tier 2 NSERC CRC in Mathematical Foundations of Data Science**

Jagannath's research focusses on the mathematics of data science, high-dimensional statistics, average case analysis of high-dimensional non-convex optimization problems.

**Renewed: Andrew Bauer – (School of Accounting and Finance)**

**Tier 2 SSHRC CRC in Taxation, Governance and Risk**

Bauer’s research examines the influence of agency issues on tax planning, including governance mechanisms, and the role of uncertainty in shaping tax planning, including risk assessment.

**Renewed: Laura Hug – (Biology)**

**Tier 2 NSERC CRC in Environmental Microbiology**

Hug seeks to define microbial diversity at contaminated sites and identify currently unknown metabolic functions. She and her research team are sequencing the total DNA and RNA of a microbial community from a contaminated site. This will generate a blueprint of which species exist e and which pathways are active.

**Renewed: Luis Ricardez-Sandoval – (Chemical Engineering)**

**Tier 2 NSERC CRC in Multiscale Modelling and Process Systems**

Ricardez-Sandoval is developing new computational tools that can aid in the design of innovative products and systems for emerging applications in the energy and advanced manufacturing sectors. He does this by using advanced process system techniques and modelling methods, such as multiscale modelling.

**Canada Foundation for Innovation – John R. Evans Leaders Fund (CFI JELF) – CRC Partnership Grants**

The CFI JELF – CRC program assists institutions to attract and retain researchers and provides support for the CRC program. In the current 2023 announcement, Waterloo had 3 successful proposals which totalled **\$260,000**.

**Kaylena Ehgoetz Martens – (Kinesiology) – \$100,000**

Project title: Can Gait Identify and Predict Brain Health?

**Aukosh, Jagannath – (Statistics and Actuarial Science) – \$80,000**

Project title: Project title: Mathematical Foundations of Data Science

**Ruodu Wang – (Statistics and Actuarial Science) – \$80,000**

Project title: Quantitative Risk Management Lab

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**Applied Public Health Chair**

This funding opportunity aims to fund diverse mid-career applied public health researchers in Canada who will undertake inclusive and equitable applied research programs that tackle pressing public health challenges and who will work with decision makers from various sectors and communities to help support evidence-informed decisions that improve health and health equity.

**William Wong – (School of Pharmacy)**

Dr. Wong will receive **\$1.15 million** in funding over the next five years for his Applied Public Health Chair in HIV and Sexually Transmitted and Blood-Borne Infections (STBBI) Research. His research helps guide policy and decision-making to ultimately improve HIV/AIDS and STBBI care. Wong’s unique interdisciplinary training in computer science, machine learning, economic evaluation and health services research, brings a novel approach to help solve this great health challenge.

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## **Canadian Foundation for Innovation (CFI)**

The Canada Foundation for Innovation (CFI) is a non-profit corporation that invests in research infrastructure at Canadian universities, colleges, research hospitals and non-profit research institutions. Since 1997 the CFI and its affiliate programs such as CFI Innovation Fund and JELF have funded 13,074 projects across Canada worth \$8.8 billion CAD.

In the current round of CFI funding (2023 announcements), 100 proposals were approved across Canada, which represented \$392 Million in investment across 32 research institutions. In addition, \$689 million was leveraged in matching funds from private-sector, provincial and other partners to bring the overall investment to \$1.1 billion in support of Canada's research community.

Since 1997, the University of Waterloo has received \$217 Million CAD across 476 funded CFI projects. In the 2023 awarded projects, The University of Waterloo was successful in securing CFI Innovation Fund (IF) funding for 6 proposals that totalled **\$30.5 Million**.

### **Dipanjan Basu - (Department of Civil and Environmental Engineering) - \$2,723,302**

Project title: Geothermal Energy and Energy Geo-storage Research Laboratory

This project is a field- and laboratory-scale research facility which operates on a hybrid geothermal energy and energy geo-storage system. Low-to-intermediate temperature geothermal energy harvesting in conjunction with underground energy storage has the potential to be a trailblazing technology because it can be employed across Canada and the world and does not require high temperature geothermal resources.

### **Kaan Erkorkmaz - (Department of Mechanical and Mechatronics Engineering) - \$6,458,020**

Project title: Canadian Technology Accelerator for Digital Transformation of Manufacturing (CAN-DX)

CAN-DX will be one of the most advanced, integrated, connected, and multidisciplinary digital manufacturing research facilities in the world. Building upon the remarkable research and commercialization track record of the team, this strategic investment from CFI will boost the competitiveness of Canadian industry and solidify Canada's scientific ranking as one of the top countries in the creation, dissemination, and implementation of new knowledge and technologies driving Industry 4.0.

### **Ian Goldberg - (Cheriton School of Computer Science) - \$800,000**

Project title: UPSCOPE: Understanding Privacy, Security, and Cryptography in Online and Physical Environments

The UPSCOPE Facility will have two primary sets of components: those for studying online environments, and those for studying physical environments – both of which will assist with safely isolating potentially malware-laden devices without harming the privacy or security of existing users of the technologies.

### **Scott Hopkins - (Chemistry) - \$10,006,500**

Project title: A Canadian Free Electron Laser (FEL) project

This project brings together 10 researchers and 8 institutions from across Canada to establish the first infrared free electron laser (IR-FEL) facility in the western hemisphere. The facility will enable fundamental science concerned with monitoring energy flow through molecules and materials, with applications in light harvesting and photo-control of molecular properties.

**Christopher Hudson and Elizabeth Irving - (School of Optometry and Vision Science) - \$2,362,150**

Project title: Canadian Vision Imaging Center (CVIC)

The infrastructure will comprise specialized facilities for: 1) Imaging of the eye at the cellular level; 2) Imaging of structure and function of the eye; and 3) Imaging the integration of vision and body. The infrastructure will enable the team to create world-leading and unique imaging facilities with advanced capabilities to solve mounting health-care crises related to vision and vision loss, and neurodegenerative and vascular diseases.

**Hamid Jahed - (Department of Mechanical and Mechatronics Engineering) - \$8,123,420**

Project title: Canadian Alliance in Cold Spray Technology (CACST)

The CACST facilities will connect and accelerate world-class CS research underway at the Universities of Waterloo, Ottawa, Western, New Brunswick, Sherbrooke, Toronto, and Windsor. Specifically, it will enable a holistic approach to CS technology innovation, providing cutting-edge infrastructure for novel CS-specific powder synthesis and manufacturing, transformative CS 3D additive manufacturing, innovative coatings and parts consolidation for intelligent manufacturing.

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**SSHRC Insight Development Grants**

Insight Development Grants support research in its early stages and enable the development of new research questions, as well as experimentation with new methods, theoretical approaches and ideas. Funding is available to both emerging scholars and established scholars for research initiatives of up to two years.

From the 2023 competition, thirteen Waterloo researchers will receive funding that totals more than **\$650,000**.

**Nazli Akhtari - (Communication Arts) - \$72,080**

Project title: Archival Animations in the Global Iranian Disapora

**Katherine Bruce-Lockhart - (History) - \$62,461**

Project title: Beyond the Mandela Rule: Global Governance, Prisoners' Rights, and "Universal" Prision Rules from the 19th-21st Centuries

**Ada Hurst & Frank Safayeni - (Management Science and Engineering) - \$42,418**

Project title: Understanding Collaborative Design Problem Framing by Novice Engineers: Implications for Engineering Design Education

**Adan Jerreat-Poole - (Communication Arets) - \$21,330**

Project title: Disabled Feminists and Digital Storytelling: Zine-Making Pandemic Lives

**Samuel Johnson - (Psychology) - \$62,989**

Project title: Mental Task Management Theory

**Logan McDonald - (Fine Arts) - \$75,000**

Project title: Environmental Scan of Indigenous Artists in Archives

**Katherine Misener - (Recreation and Leisure Studies) - \$74,974**

Project title: Disrupting the Norms of Community Sport Through Co-Participation of Parents and Children

**Juan Moreno-Cruz - (School of Environment, Enterprise and Development) - \$72,928**

Project title: The Role of Narratives on Sustainable Food Consumption

**Elizabeth Nilsen - (Psychology) and Edith Law - (Cheriton School of Computer Science) - \$66,461**

Project title: Associations Between Children's Characteristics and Their Perceptions of, Strategies Toward, and Learning from Teachable Robots

**Manaal Fahim Syed - (School of Social Work) - \$61,469**

Project title: Intergenerationality in the COVID-19 Crisis: Evolving Definitions and Relations Between Older and Younger Generations in Immigrant Families and Society

**Keisuke Teeple (Economics) - \$44,820**

Project title: Financial Market Tatonnement

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**Alliance Grants**

Alliance grants encourage university researchers to collaborate with partner organizations from the private, public or not-for-profit sectors. These grants support research projects led by strong, complementary, and collaborative teams that will generate new knowledge and accelerate the application of research results to create benefits for Canada. Waterloo will receive **\$13.7 Million** in Alliance grants across 28 researchers.

**Dayan Ban - (Electrical and Computer Engineering) - \$120,000**

Project title: Near-Infrared Micro-Light Emitting Diodes for Biomedical Applications

**Jonathan Baugh - (Chemistry) - \$1,481,200**

Project title: Next-Generation Photonic Source to Enable Quantum Remote Sensing and Communications

**Timothy Brecht - (Cheriton School of Computer Science) - \$59,929**

Project title: Real-Time Hockey-Analytics Using Puck and Player Tracking Data

**Cliff Butcher - (Department of Mechanical and Mechatronics Engineering) - \$167,692**

Project title: Characterization and Modelling of an Advanced 7xxx-Series Aluminum Alloy in Hot Forming for Enhanced Lightweighting and Crash Safety

**Naveen Chandrashekar - (Department of Mechanical and Mechatronics Engineering) - \$64,567**

Project title: Design, Development and Evaluation of Smart Grip Force Monitoring Device for Industrial Use

**C. Perry Chou - (Chemical Engineering) - \$202,500**

Project title: Novel Strain Engineering and Bioprocessing Strategies for Microbial Production of Heme and Its Porphyrin Precursors



**David Del Rey Fernandez - (Applied Mathematics) - \$25,000**

Project title: Provably Stable Reduced Basis Methods

**David Del Rey Fernandez - (Applied Mathematics) - \$97,998**

Project title: Entropy Stable and Asymptotic Preserving Discretizations of Kinetic Models for Fluid Flow Problems

**Goretty Maria Dias - (School of Environment, Enterprise and Development) - \$35,000**

Project title: Decision Support Tool to Characterize the Energy Use, Impacts and Profitability of Biofertilizers and Alternative Technologies in Controlled Environment Agriculture

**Ayman El-Hag - (Electrical and Compute Engineering) - \$25,000**

Project title: A Drone-based Inspection System for Outdoor Insulators

**Paul Fieguth - (Systems Design Engineering) - \$80,000**

Project title: High-Resolution Projector-Camera and LED-Wall Display Calibration

**Adrian Gerlich - (Department of Mechanical and Mechatronics Engineering) - \$174,600**

Project title: Optimization of Filler Wire and Post-Weld Treatment in AHSS Laser Welds

**Adrian Gerlich - (Department of Mechanical and Mechatronics Engineering) - \$265,667**

Project title: High Speed Droplet Transfer and Feedback Control in Arc Welding

**Carl Haas - (Department of Civil and Environmental Engineering) - \$320,000**

Project title: Masonry, Masons and Machines: Leveraging Augmented Reality to Improve Productivity, Health and Safety Outcomes

**Carl Haas - (Department of Civil and Environmental Engineering) - \$212,295**

Project title: Digitization and Asset Information Modeling to Support Planning for Nuclear Power Plant decommissioning

**Roland Hall - (Biology) - \$59,288**

Project title: 'Pre-release' Baselines for Compounds of concern in Lakes of the Peace-Athabasca Delta Before Treated Oil Sands Process Water is Discharged to the Athabasca River

**Jean-Pierre Hickey - (Department of Mechanical and Mechatronics Engineering) - \$25,000**

Project title: Clustering Dynamics of Particles on Our Turbulent Waterways

**Trevor Hrynyk - (Department of Civil and Environmental Engineering) - \$106,200**

Project title: Toward Hybrid GFRP/FRC Construction for Sustainable Next Generation

**Soo Jeon - (Department of Mechanical and Mechatronics Engineering) - \$25,000**

Project title: Realtime Reinforcement Learning for Mechatronic Systems with Non-Stationary Behaviors

**Kunho Eugene Kim - (Department of Civil and Environmental Engineering) - \$62,000**

Project title: Cost effective Retrofit of Ageing Concrete Bridge Components Using Iron-based Shape Memory Alloy (Fe-SMA) Composites

**Jan Kycia - (Physics and Astronomy) - \$1,113,491**

Project title: Low Temperature Material Characterization of Superconducting Devices for Quantum Computing

**Yuning Li - (Chemical Engineering) - \$270,000**

Project title: Development of Solid Electrolytes Based on Novel Oxirane-based Polymers

**Juewen Liu - (Chemistry) - \$48,000**

Project title: Aptamer-based Biosensors for Monitoring Carbamazepine, A Drug with a Narrow Therapeutic Window

**Adrian Lupascu - (Physics and Astronomy) - \$1,137,724**

Project title: Development of a Scalable Superconducting Quantum Computing Platform Based on Fluxonium Qubits

**Sushanta Mitra - (Department of Mechanical and Mechatronics Engineering) - \$25,000**

Project title: High Throuhput Ferrofluid Encapsulation using Magnet

**Giovanni Montesano - (Department of Mechanical and Mechatronics Engineering) - \$80,000**

Project title: Advanced Structural Analysis Toolchain to Support the Development of Lightweight Composite Airframes for High-speed Uncrewed Aerial Vehicles

**Michael Reimer - (Electrical and Computer Engineering) - \$1,500,000**

Project title: Portable Semiconductor Nanowire Quantum Sensors with Enhanced Efficiency and Timing Resolution

**Rebecca Rooney - (Biology) - \$772,235**

Project title: Restoring Urban Meadow: The Meadoway

**Ehsan Toyserkani - (Department of Mechanical and Mechatronics Engineering) - \$3,498,073**

Project title: Holistic Innovation in Additive Manufacturing 2.0 (HI-AM 2.0): Capitalizing on Prior Achievements and Exploring New Frontiers in Directed Energy Deposition Processes

**James Tung - (Mechanical and Mechatronics Engineering) - \$30,000**

Project title: Foot-based Sensor Fusion for Ambulatory Gait Analysis for Occupational Health and Safety

**Lan Wei - (Electrical and Computer Engineering) - \$1,690,122**

Project title: Towards Large-scale Spin Qubit Quantum Computers: Simulation, Modeling and Experiment

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## Awards and Distinctions:

### Wei "Adam" Tsen (Chemistry)

#### [Dorothy Killam Fellowship - National Killam Program](#)

The Dorothy Killam Fellowships provide support to scholars of exceptional ability by granting them time to pursue research projects of broad significance and widespread interest within the disciplines of the humanities, social sciences, natural sciences, health sciences, engineering or studies linking any of these disciplines. These Fellowships are now specifically targeted to mid-career researchers in need of relief from teaching and administrative duties to focus on their research career.

### M. Tamer Özsü (Cheriton School of Computer Science)

#### [2024 IEEE Technical Committee on Data Engineering Education \(IEEE TCDE\) Award](#)

One of four prestigious annual awards conferred by IEEE TCDE, the Education Award recognizes database researchers who have made an impact on data engineering education, including impact on the next generation of data engineering practitioners and researchers. M. Tamer won the IEEE Technical Committee on Data Engineering Education Award for his fundamental contributions to data management and data science pedagogy.

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## International Agreements:

**Student Exchange** – Two new and two renewal exchange agreements were signed with the following institutions:

- **Chung-Ang University (Korea) | University College Dublin (Ireland)** – These are two new institution-wide agreements.
- **Czech Technical University (Czech Republic) | Australian National University (Australia)** – These two renewed institution-wide agreements.

**Memorandums of Understanding (MOUs)** – One MOU and one strategic partnership agreement were renewed that will enable the institutions to continue to explore collaboration across a range of areas including joint research projects, staff and graduate student exchange, seminars and conferences:

- **Dayalbagh Educational Institute (India)** – This MOU involves the Faculty of Engineering.
- **Hong Kong Polytechnic University (Hong Kong)** – This is an institution-wide strategic partnership.

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## International delegations hosted at the University of Waterloo:

- **Karlsruhe Institute of Technology (KIT)** – Waterloo International hosted virtual Seed Funding celebrations with KIT, Germany.
- **British Consulate General Toronto** – Faculty of Engineering, Waterloo International, and Velocity hosted a delegation which included the Senior Investment Officer, Department for Business and Trade (Auto Sector) from the British Consulate General Toronto.
- **Embassy of Canada to Kazakstan** – Waterloo International hosted a delegation led by the Senior Trade Commissioner at the Embassy of Canada to Kazakhstan and the Director of Strategic Planning and Communications at Karaganda Technical University.

- **Asia Pacific Foundation of Canada** – Renison University College, with support from Waterloo International, hosted a delegation of six Japanese students on the Kakehashi Project led by Asia Pacific Foundation of Canada.
  - **EU Commission** – The Office of Research, in collaboration with Waterloo International, hosted a delegation from the EU Commission on Horizon Europe.
  - **Singapore Institute of Technology (SIT)** – Cooperative and Experiential Education (CEE), Waterloo International, Waterloo Ventures, the Waterloo Institute for Sustainable Aeronautics and the Conrad School of Entrepreneurship & Business hosted a Presidential delegation from the Singapore Institute of Technology (SIT), Singapore.
  - **Dutch Consulate General Toronto** – The Faculty of Environment, with support from Waterloo International, hosted the Cities in Transition Roundtable which featured a former Dutch cabinet minister, the current Dutch Consulate General Toronto, the mayors of Waterloo and Kitchener, and local and industry champions.
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# Office of the Vice-President, Academic and Provost

**For Information**

**Open Session**

**To:** Senate

**Sponsor:** James W.E. Rush, Vice-President, Academic and Provost  
**Contact Information:** [provost@uwaterloo.ca](mailto:provost@uwaterloo.ca)

**Presenter:** James W.E. Rush, Vice-President, Academic and Provost  
**Contact Information:** [provost@uwaterloo.ca](mailto:provost@uwaterloo.ca)

**Date of Meeting:** **May 6, 2024**

**Agenda Item Identification:** **19 (a). Report of the Provost – Faculty Appointments, Leaves**

**Summary:**

The Faculty Reports for Senators’ information regarding the variety of appointments, reappointments, special appointments, leaves, and other matters of interest about individuals in the Faculties are available at the [Senate agenda page](#)<sup>1</sup>.

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<sup>1</sup> <https://uwaterloo.ca/secretariat/sites/default/files/uploads/documents/faculty-may-2024.pdf>

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