UNIVERSITY OF WATERLOO

Senate
Notice of Meeting

Date: Monday 17 October 2022
Time: 3:30 pm
Place: NH 3407 [1]

	OPEN Session		**Page #**
3:30	1. Conflict of Interest	Declaration	
	2. Approval of the Agenda	Decision	
	3. Minutes of the 19 September 2022 Meeting	Decision	3
	4. Business Arising from the Minutes		
	5. Senate Workplan	Information	7
3:40	6. Report of the President a. President's Update b. Strategic Plan Annual Update 2021-2022	 Oral/Information Oral/Information	 9
4:00	7. Leadership Updates a. Report of the Vice-President, Academic & Provost i. Policy 76/77 Update (Rush, Mary Hardy) *To approve the following membership on the Policy 76/Policy 77 Drafting Committee: Mary Hardy (statistics and actuarial science, FAUW appointee); Su-Yin Tan (geography and environmental management, FAUW appointee); Paul Wehr (psychology, FAUW appointee); David DeVidi (associate vice-president, academic, President's appointee); Anna Esselment (political science, President's appointee); and Ian VanderBurgh (mathematics, President's appointee).*	 Decision	 41
4:15	b. Report of the Vice-President, Research & International i. Presentation – Annual Research Report to Senate	 Oral/Information	
4:30	8. Reports from Committees and Councils a. Senate Graduate & Research Council i. *To approve the establishment of the Centre for Sustainability and Business (CSB), as presented.* b. Senate Undergraduate Council i. *That Senate approve the proposed correction of the official name of the Environmental Sciences plans, both Honours and Honours Co-operative, to be pluralized (Environmental Sciences versus Environmental Science), effective 1 September 2023*	 Decision Decision	 43 45

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[1] Telephone coordinates will be provided to Senators unable to attend in person

	c. Senate Executive Committee		
	i. *To approve the appointment of Dr. Scott Kline as the Council of Ontario Universities (COU) Academic Colleague for the University of Waterloo, term to 30 April 2025.*	Decision	47
	d. Senate Long Range Planning		49
	i. Waterloo at 100, Report and Discussion Paper	Information	
	ii. Digital Learning Strategy	Information	
	9. Other Business		
5:00	**CONSENT Agenda** **Motion:** To approve or receive for information the items on the consent agenda, listed as items 10-12 of the Senate agenda		
	10. Reports from Committees and Councils		
	a. Senate Graduate & Research Council	Information	61
	b. Senate Undergraduate Council		
	i. *That Senate approve the following proposed revision to the Undergraduate Communication Requirement for the Faculty of Health, effective 1 September 2023.*	Decision	63
	ii. *That Senate approve the following revisions to the Invalid Plan Combinations, effective 1 September 2023*	Decision	
	11. Report of the Vice-President, Academic & Provost		
	a. Degrees, Diplomas, and Certificates [list of graduands available for review online prior to the Senate meeting]	Decision	79
	12. Reports from the Faculties		81
5:15	**CONFIDENTIAL Session**		
	13. Minutes of the 19 September 2022 Meeting	Decision	83
	14. Business Arising from the Minutes		
	15. Report of the President	Oral/Information	
	16. Other Business		

7 October 2022
  revised 13 October 2022

Mike Grivicic
Associate University Secretary
Secretary to Senate

University of Waterloo
SENATE
Minutes of the Monday 19 September 2022 Meeting

Present: Sheila Ager, Marc Aucoin, Michael Beauchemin, Jason Blokhuis, Jeff Casello, Trevor Charles, Joan Coutu, Neil Craik, Kristine Dalton, Laura Deakin, Charmaine Dean, Jack DeGooyer, David DeVidi, Nenone Donaldson, Aiman Fatima, Paul Fieguth (on behalf of Mary Wells), Wendy Fletcher, Cindy Forbes, Mark Giesbrecht, Moira Glerum, Vivek Goel (chair), Onurcan Gokkaya, Rob Gorbet, Mike Grivicic (secretary), David Ha, Kevin Hare, Dennis Huber, Sonia Ismail, Narveen Jandu, Martin Karsten, Jennifer Kieffer, Veronica Kitchen, Christiane Lemieux, Lili Liu, Brad Lushman, Ellen MacEachen, Carol Ann MacGregor, Peter Meehan, Graham Murphy, Richard Myers, Prateep Nayak (on behalf of Bruce Frayne), Cathy Newell Kelly, Oudy Noweir, Daniel O'Connor, Troy Osborne, Nicholas Pfeifle, Mary Robinson, James Rush, Marcus Shantz, Sharon Tucker , Graeme Turner, Paul Ward, Stan Woo, Clarence Woudsma, Changbao Wu, Annie Yang, En-Hui Yang, Stephanie Ye-Mowe

Guests: Jean Becker, Catherine Burns, Aldo Caputo, Donna Ellis, Anne Galang, Diana Goncalves, Sarah Hadley, Karen Jack, Jimmy Lin, Bessma Momani, Fayaz Noormohamed, Alice Raynard, Chris Read, Daniela Seskar-Hencic, Kerry Stryker, Glen Weppler

Absent: John Abraham*, Dominic Barton*, Sandra Banks*, Lisa Bauer-Leahy, Anne Bordeleau*, Kim Cuddington, Lori Curtis, Catherine Dong*, George Freeman*, Kelly Grindrod, Natalie Hutchings, Achim Kempf, Scott Kline, Alysia Kolentsis, Robert Lemieux*. Xianguo Li, Nasser Mohieddin Abukhdeir*, Blake Madill, Ceileigh McAllister*, Beth Namachchivaya*, Erin O'Connell, Luke Potwarka*, Naima Samuel*, Matthew Schwarze*, Siv Sivaloganathan, Siva Sivoththaman*, Julian Surdi*, Chao Tan, Diana Vangelisti*, Dan Weber*
*regrets

<u>OPEN SESSION</u>

CHAIR'S REMARKS
The chair observed that 19 September is Powley Day, a day recognized and celebrated by Métis people and communities across the country. He also observed that earlier in the day the former head of state for Canada, Queen Elizabeth II, was laid to rest and that the day had been proclaimed a day of mourning both nationally and provincially – he called for a moment of silence. The chair remarked: welcome to new senator Stephanie Ye-Mowe, who is the new WUSA president; welcome to Mike Grivicic as the new secretary to Senate; Johanna Wandel's term as COU Academic Colleague has elapsed, and eligible senators can expect communication in the near term to solicit interest for the role. The chair noted upcoming observances and celebrations, including: Sunrise Ceremony on September 22nd at the Ceremonial Fire Grounds located at St. Paul's (soon to be United College); the National Day for Truth and Reconciliation/Orange Shirt Day (September 30th); National Day of Remembrance for Missing and Murdered Indigenous Women and Girls (October 4th).

1. **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.

2. **APPROVAL OF THE AGENDA**
   A motion was heard to approve the agenda. Beauchemin and Meehan. Carried.

3. **MINUTES OF THE 20 JUNE 2022 MEETING**
   A motion was heard to approve the minutes as distributed. Gorbet and Beauchemin. Carried.

4. **BUSINESS ARISING FROM THE MINUTES**
   There was no business arising.

5.   **MEMO: SENATE GOVERNANCE REVIEW FOLLOW-UPS**
     Karen Jack provided an overview of the memo and indicated that work on the governance review is
     well underway, including: planned engagement with the committee/council chairs as well as
     Faculties; a request for proposals will be issued for a governance portal; potential joint committee
     with the Board of Governors focusing on equity, diversity, inclusion and anti-racism. Members noted
     the move of the consent agenda items to follow the regular session, and the chair indicated that Senate
     Executive Committee reviews the content of all agenda items and reports to ensure Senate's business
     is carried out appropriately – any member may request discussion of any item in the consent agenda.

6.   **SENATE WORK PLAN**
     This item was received for information.

7.   **REPORT OF THE PRESIDENT**
     The chair provided his report: with the start of the fall term, the University is carrying out its plan for
     a safe return to campus and continues to monitor public health data and guidance regarding COVID-
     19, with the potential to impose public health requirements if called for; orientation week was held
     earlier in the month with many students participating; acknowledgement of students' challenges re:
     housing, and more on the topic will be discussed under the provost's report; events held in August to
     welcome new faculty hired under the Black Excellence appointment process; recent launch of
     research initiatives re: sustainable futures as well as quantum and health; appointment of Jacinda
     Reitsma as incoming vice-president, administration and finance, who will start in the role on
     December 1st; the celebration of life for former president Douglas Wright will be held on Friday
     September 23rd.

     Waterloo at 100
     Consultations are well underway with engagement of faculty, staff and students - a discussion paper
     has been posted and approximately 1000 individuals have been engaged to date. Waterloo at 100 will
     be the focus at a special joint session of Senate and the Board of Governors is scheduled for
     September 28th as part of the Board retreat event, and further discussion will occur at the Senate Long
     Range Planning meeting on September 29th. The president will visit each Faculty as part of the
     consultation process, and the topic will be open for discussion at the upcoming President's Forum.

8.   **LEADERSHIP UPDATES**
     a. Report of the Vice-President, Academic & Provost

     i. Operational and Strategic Matters Underway. James Rush provided a PowerPoint presentation
     on operational and strategic matters underway: update on fall term enrollments, and recruitment/
     admissions activity for fall 2023; update on international student visa applications, with the
     observation that this is a common challenge among U6 universities and the Waterloo has extended its
     deadlines to September 27 to provide additional flexibility for students encountering difficulties;
     recent faculty hires made under cluster hire initiatives for both Black and Indigenous faculty;
     summary of five-year financial reporting to observe the unique factors and circumstances related to
     the pandemic that skewed certain revenues and expenses, which provides important context for recent
     media reports. Senators clarified that the financial figures presented are drawn from the consolidated
     financial statements and differ from the presentation seen in the operating budget, and that the
     financial positions of different universities are not uniformly impacted. Senators heard that Campus
     Housing has extended its required arrival date to help accommodate students encountering difficulties
     in arriving, with coordination among Faculties and departments/schools toward that end. Senators
     learned that cluster hiring process may continue to yield new hires, and that there will be similar
     reporting on staff hires and student recruitment at future meetings of Senate.

     ii. Campus Housing. Rush invited Chris Read to provide a PowerPoint presentation: recent media
     coverage has highlighted students' difficulties in secure housing; Waterloo has one of the largest on-

campus housing operations in the country (together with the AFIW); rising rents are a Canada-wide trend; comparisons of on-campus housing offerings and amenities vis-à-vis private off-campus options; facility strategy development process began in 2019 in recognition of the need for campus housing to modernize its facilities/offerings, and key drivers/guiding principles have been enunciated and recommendations formulated. Goel noted that work is ongoing on this important file and that more consultation activity can be expected as the strategy moves forward. Members discussed: process to develop guiding principles arises from consultations held in early 2020 with proposals discussed at five engagement sessions held in early 2022; there are regular communications with Wilfrid Laurier University and Conestoga College on these topics, along with engagement via the City of Waterloo and the Region of Waterloo; potential for the University to add to its housing stock, and recognition that both the affordability and adequacy of students' housing options may pose difficulties; graduate student represent a small portion of students in campus housing, with the University having prioritized undergraduate students as an outcome of the 100% residence guarantee for first-year and transfer students. An update on campus housing will be provided at a future meeting.

b. Report of the Vice-President, Research & International

Charmaine Dean provided a PowerPoint presentation (with Catherine Burns): recent submission to Canada First Research Excellence Fund (CFREF) of a joint initiative with NOSMU focusing on transformative health technologies, with successful applicants to be announced in early 2023; recent launch of sustainable future initiative; evolving funding dynamics and interplay between federal CFI funding and provincial ORF-RI sources, resulting from the province having launched its own strategic reviews and research security reviews, which has brought about more decoupling of CFI and ORF-RI funding decisions; NSERC discovery grants decisions have seen delays; the annual report on research will come to Senate in October. Goel acknowledged the excellent work of the Office of Research over the summer months to develop high-quality and competitive proposals. Dean and Burns affirmed that approval of the CFREF funding submission would bring funding opportunities to both researchers and students.

9. **REPORT FROM COMMITTEES AND COUNCILS**
   a.   **Senate Graduate & Research Council**

Dean spoke to items (i) and (ii) of the report. A motion was heard to approve the dissolution of the Centre for Advanced Trenchless Technologies (CATT), as presented. Dean and Ward. Carried with one abstention. A motion was heard to approve the dissolution of the Institute for Computer Research (ICR), as presented. Dean and Giesbrecht. Carried with one abstention. Casello provided an overview of item (iii) of the report. A motion was heard to approve the deletion of the graduate research fields from the Master of Arts (MA) in History program, effective 1 September 2022, as presented. Casello and Ager. Carried with one abstention.

   b.   **Senate Undergraduate Council**

DeVidi provided an overview of items (i)-(iii). A motion was heard to approve the proposed new Three-Year General English – Creative and Professional Writing academic plan, as described, effective 1 September 2023. DeVidi and Ager. Carried with one abstention. A motion was heard to approve the proposed new Diploma in Health Humanities, as described, effective 1 September 2023. DeVidi and Meehan. Carried. A motion was heard to approve the proposed new Mathematics/ Chartered Professional Accountancy Data Analytics Specialization, as described effective 1 September 2023. DeVidi and Giesbrecht. Carried.

   c.   **Joint Senate Graduate & Research Council and Senate Undergraduate Council**

Cathy Newell Kelly spoke to the joint report, noting that the dates had been previously approved with placeholders for in-person exam dates pertaining to online courses, which have now been determined. A motion was heard to approve the revised academic calendar dates for 2022-2023 and calendar

guidelines for establishing academic dates as presented in Appendix 1, as presented. Newell Kelly and DeVidi. Carried.

d.   Senate Executive Committee

Members noted Stephanie Ye-Mowe's recent WUSA appointment, and the chair indicated that if nominations are received from the floor, then an election will be held electronically following the meeting. Following a call, no nominations were made from the floor. A motion was heard to approve the appointment of Stephanie Ye-Mowe as undergraduate student representative on the Board of Governors, term to 30 April 2024. DeVidi and Giesbrecht. Carried. A motion was heard to approve the appointment of Stephanie Ye-Mowe as undergraduate student representative to Senate Executive Committee, term to 30 April 2023. DeVidi and Murphy. Carried.

10. OTHER BUSINESS

Recalling the discussion under 8(a)(i), the provost observed that budget carryforwards are often subject to restrictions or designations, and that these are articulated in the financial statements.

CONSENT AGENDA

A motion was heard to approve or receive for information the items on the consent agenda, listed as items 11-15 of the Senate agenda. Hare and Turner. Carried with one opposed.

11. REPORTS FROM COMMITTEES AND COUNCILS
   a. **Honorary Degrees.** Received for information.
   b. **Senate Graduate & Research Council.** Received for information.
   c. **Senate Undergraduate Council.** Two items approved; remaining items received for information.

12. REPORTS OF THE PRESIDENT
   a. **Tenure and Promotion of Faculty Members.** Received for information.

13. REPORTS OF THE VICE-PRESIDENT, ACADEMIC & PROVOST
   a. **Call for Nominations for University Professors.** Received for information.

14. REPORTS FROM THE FACULTIES. Received for information.

15. REPORTS FROM THE COU ACADEMIC COLLEAGUE. Received for information.

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

26 September 2022   Mike Grivicic
/dg   Associate University Secretary
                                                            Secretary to Senate

2022-2023 Senate Work Plan

Senate Agenda Items · expected *as needed	16 May 2022	20 June 2022	19 September 2022	17 October 2022 *Strategic Plan Annual Update / Waterloo at 100*	21 November 2022 *Degree Level Expectation*	19 December 2022	16 January 2022 *Talent*	27 February 2023 *TBD*	27 March 2023 *Strategic Plan – Communities - Sustainability*	17 April 2023 *TBD*
REGULAR AGENDA *(including items for information and discussion)*										
Minutes	·	·	·	·	·	·	·	·	·	·
Business Arising	·	·	·	·	·	·	·	·	·	·
LEADERSHIP UPDATES[6]										
Report of the Vice-President Academic and Provost	·	·	·	·	·	·	·	·	·	·
Report of the Vice-President Research & International	·	·	·	·	·	·	·	·	·	·
REPORTS FROM COMMITTEES AND COUNCILS										
Executive Committee	*	*	*	*	*	*	*	*	*	*
Graduate & Research Council (GRC)	·	·	·	·	·	·	·	·	·	·
Undergraduate Council (UC)	·	·	·	·	·	·	·	·	·	·
Long Range Planning Committee				·	·			·		·
Joint Report of GRC & UC on Academic Calendar Dates					·					
University Committee on Student Appeals Annual Report					·					
University Appointment Review Committee Annual Report										·
Finance Committee - Budget Update[3]								·		
Finance Committee - Budget recommendation[2,3]									·	
OTHER SENATE AGENDA ITEMS										
New Senator Orientations (before meeting)	·									
Teaching Awards Committee								·		
Roster of Graduands	·			·						
Undergraduate and Graduate Admissions Update										·
SENATE PRESENTATIONS										
Presentations from the Presidents of the Faculty Association, Waterloo Undergraduate Association and Graduate Student Association										·
Strategic Plan Accountability Update				·						
Research Annual Update				·						
Waterloo International Annual Update									·	

[1] Annual item
[2] Board of Governors approval
[3] Presented by the Vice-President Academic and Provost
[4] Presented by the President and Vice-Chancellor, and Chair of Senate
[5] Presented by the University Secretary
[6] Leadership updates may include such topics as: Talent, We Accelerate Report, Communities (EDI, Sustainability), Waterloo International, etc.

Senate Agenda Items · expected *as needed	16 May 2022	20 June 2022	19 September 2022	17 October 2022 *Strategic Plan Annual Update / Waterloo at 100*	21 November 2022 *Degree Level Expectation*	19 December 2022	16 January 2022 *Talent*	27 February 2023 *TBD*	27 March 2023 *Strategic Plan – Communities - Sustainability*	17 April 2023 *TBD*
CONSENT AGENDA										
Reports from Faculties (e.g., appointments, administrative appointments, sabbaticals)[2]	·	·	·	·	·	·	·	·	·	·
Tenure and Promotion Report[4]				·						
University Professor Designation[3]									·	
Call for Nominations for University Professor[3]				·						
Call for Nominations for Honorary Degree Recipients and Convocation Speakers[4]								·		
Report of the COU Academic Colleague					·					
Senate Committee Appointments[5]	*	*	·	*	*	*	*	*	*	*
CONFIDENTIAL AGENDA										
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 (June)										

Joint SENATE/BOARD Strategic Plan Focus Sessions 3-4:30	Joint SENATE/BOARD Continuing Education Sessions 3-4:30
• January 10 2023 - Talent • March 21 2023 Communities (Sustainability) • May 2 2023 Research	• February 1 2023 – Quality assurance Framework (Undergrad/Grad Programs) • March 1 2023 – Funding Environment, SMA, Corridors

Special Topics for 2022-2023 to be Scheduled:

- President's Anti-racism Task Force Update (PART)
- Waterloo at 100
- Senate Governance Review Recommendations and Updates

For more information:
uwaterloo.ca/secretariat
secretariat@uwaterloo.ca
NH 3060

[1] Annual item
[2] Board of Governors approval
[3] Presented by the Vice-President Academic and Provost
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UNIVERSITY OF WATERLOO

Office of the President

For Discussion	**Public**	**Open Session**

To: **Senate**

Sponsor: Vivek Goel, President and Vice-Chancellor
Contact Information: Office of the President

Presenter: Vivek Goel, President and Vice-Chancellor
Contact Info: Office of the President

Date of Meeting: **October 17, 2022**

Item Identification:

Annual Update for 2021-22 for Waterloo's Strategic Plan ("Annual Update") and Waterloo's Performance Indicator Dashboard for 2019-2022 ("KPIs")

Summary:

The Annual Update compiles progress on selected initiatives per Strategic Plan theme and goal areas over the implementation year of 2021-22. Progress on selected indicators per goal are shared. Focus stories per goal area provide a more in-depth view of success and impact in processes and/or outcomes of a particular strategic initiative. Complementing the Update are the KPIs vis-à-vis the institution's dashboard of indicators and results organized by the three thematic areas of our Strategic Plan. Results are compared against peer groups in the post-secondary education sector in Canada.

Recommendation/Motion:

For information/discussion.

Jurisdictional Information:

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:

Other key governance bodies to receive the Annual Update and/or KPIs for information include Deans' Council (DC) with members of the President's senior executive team (PVP), the University's Executive Committee, and the Board of Governors.

Senate   **1**

Previous Action Taken:

In prior Senate meetings, members have received progress updates and opportunities to engage with the Strategic Plan's initiatives based on thematically organized sessions (e.g., in January 2022 on Talent, in March 2022 on Communities, in June 2022 on Research). This meeting serves as a culmination point for the implementation year of 2021-22 vis-à-vis the Annual Update.

Highlights:

Enhancements to the Annual Update report include the placement of progress bars with 'started', 'in progress', and 'completed' statuses against selected initiatives by goal area. Initiatives are hyperlinked, taking the reader to our Strategic Plan website[1] where more details are available. We continue to provide a selection of performance indicators where the data source allows, aligned as far as possible to our Strategic Plan goals. Indicators demonstrate outcomes over time. Focus stories are included for each goal, elevating an initiative for its impact or implementation progress, or both.

In the KPIs document we continue to improve the selection and presentation of metrics to support governance oversight. This year, we have presented a slightly broader set of institutional KPIs as per our Strategic Plan themes (Talent, Research, Communities). Indicators carried over from the Annual Update report are highlighted. We provide our three-year performance against ourselves and our peer group, which varies depending on the data source. There are clearly areas where Waterloo can make improvements. With this analysis, we can better couple how and where our various activities can make a difference. We also hope that by growing our focus on performance indicators we encourage not only improvements but also the unconventional ideas required to fuel our visioning for Waterloo at 100 and the supporting initiatives in our strategic plans.

Next Steps:

Input received from Senators on either the Annual Update or KPIs help to improve both the continuous development of strategic planning and the approach to selecting and analyzing indicators to help track progress and drive enhancements. Key outcomes of our discussion can also be conveyed at the Board of Governors meeting later this month when the same materials are tabled.

Documentation Provided:

- Annual Update for 2021-22 for Waterloo's Strategic Plan
- Waterloo's Performance Indicator Dashboard for 2019-22

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[1] WatIAM credentials required to enter the website (Senators may contact Diana Goncalves in the Secretariat at d3goncalves@uwaterloo.ca to obtain credentials as needed).

2021–22 ANNUAL UPDATE

2020-2025
Strategic Plan

UNIVERSITY OF
WATERLOO

CONNECTING IMAGINATION WITH IMPACT

INTRODUCTION

The 2021-2022 Strategic Plan Annual update offers information about progress on selected initiatives in the three key theme areas covered by the University of Waterloo's 2020-2025 plan: Developing Talent for a Complex Future, Advancing Research for Global Impact and Strengthening Sustainable and Diverse Communities. These selected initiatives offer a flavour of how we are addressing each of the theme areas and eleven goals. Additional work is ongoing in most areas, including Faculty contributions. More detail about these selected Faculty highlights are available at the strategic plan's action and progress website.

The report also offers relevant, high level, indicators that can be meaningfully connected to desired strategic goals. These indicators are important to help monitor Waterloo's longer-term progress. Where available, data includes benchmarks for comparison to Ontario, Canadian, or international contexts. Again, only selected indicators are shown here with additional indicators available on the strategic plan action and progress website.

For additional detail on our strategic plan, and our progress, please visit the Strategic Plan Action and Progress website. This is a password-protected website. To access it, use your campus credentials.

TABLE OF CONTENTS

GOAL T1: EDUCATE GLOBAL CITIZENS FOR THE FUTURE OF WORK AND LEARNING TO THRIVE IN AN AGE OF RAPID CHANGE BY PUTTING LEARNERS AT THE CENTRE OF EVERYTHING WE DO

OBJECTIVES

T1A INCREASE FLEXIBLE CURRICULA

T1B PROMOTE TEACHING AND LEARNING INNOVATION AND REDUCE SYSTEMIC BARRIERS

T1C REMOVE BARRIERS TO COLLABORATION, INTERDISCIPLINARITY, AND KNOWLEDGE INTEGRATION

T1D ADVANCE TECHNOLOGY-ENABLED LEARNING

T1E ENHANCE "BUSINESS AT WATERLOO" MODEL

SELECTED INITIATIVES

CLICK ON THE TITLES TO LEARN MORE ABOUT EACH INITIATIVE.

Progress legend

Started   In progress   Completed

T1B T1C

Designing a Teaching Innovation Incubator (TII) to develop transformative pedagogy and programs

The TII is an exploratory testbed for new, potentially transformative, approaches to teaching. The TII hub is in development. The Beta TII project focuses on engaging graduate students from each Faculty to create a team-taught interdisciplinary course on complex, intractable problems like climate change.

T1B

Focusing on equity, diversity, inclusion, and anti-racism (EDI-R) in curriculum

Waterloo is decolonizing curriculum, addressing equity, and embracing anti-racist pedagogies by: creating new training modules, hiring Indigenous elders, and revising existing and creating new curriculum. The Associate Vice-President Academic office, Centre for Extended Learning (CEL), and faculties are working together with the offices of equity, diversity, inclusion and anti-racism and Indigenous relations to do this important work.

T1A

Removing barriers to innovation: non-credit credentials

Waterloo is developing a new approach to facilitate credentialling of new non-credit and credit courses to support curriculum innovation. The Senate, through the Alternative Credits Approval Committee, has initiated work on this project.

T1A T1B T1D

Advancing an agile, technology–enabled learning ecosystem

The Digital Learning Strategy Working Group is developing a comprehensive strategy that will help Waterloo prepare for the educational marketplace of the future and to position itself as a leader in digital learning. Consulting with key stakeholders, the group will report in late 2022 with recommendations on how Waterloo can best support the creation of exceptional, learner-centred, digitally-enabled learning opportunities, including flexible delivery modes and learning pathways. The development of a digital learning strategy will follow this important work.

T1A T1D

Leveraging online learning to build active learning opportunities

The Blended Learning Initiative (BLI) is a joint project launched in 2021 by the Centre for Teaching Excellence, CEL, and Waterloo's Faculty-based teaching fellows to help instructors leverage technology-enabled strategies that will optimize in-person instruction. Workshops to support these strategies have been developed. The ultimate objective of this work is to improve student learning outcomes and faculty satisfaction, while also reducing pressure on use of classroom space.
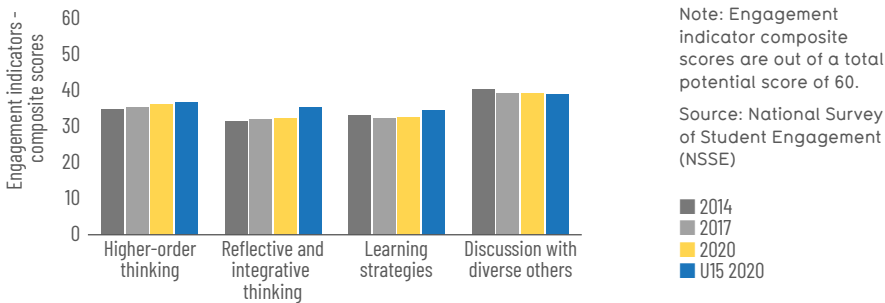
T1D

Optimizing student outcomes for better instructor supports

CEL launched the Agile Development Team in fall 2021 as a two-year pilot to deploy resources to support faculty members interested in adapting or developing online learning materials and courses. As a result of this project's success, it has been extended beyond the two-year pilot period.
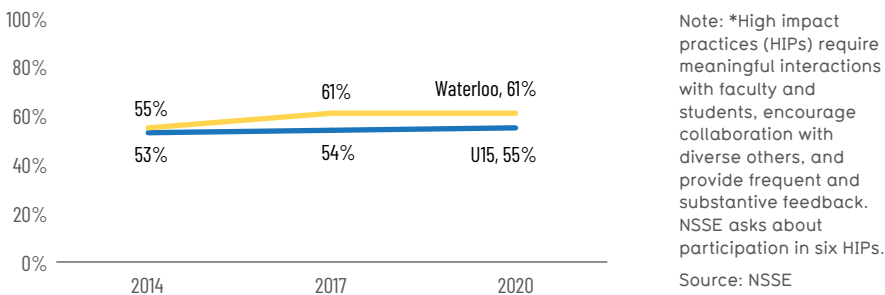
SELECTED INDICATORS

TO READ MORE ABOUT THE INDICATORS BELOW, VISIT THE STRATEGIC PLAN ACTION AND PROGRESS WEBSITE.

Waterloo graduating year students' perception of their exposure to engaging learning practices remained relatively constant T1A T1B

Note: Engagement indicator composite scores are out of a total potential score of 60.

Source: National Survey of Student Engagement (NSSE)

- 2014
- 2017
- 2020
- U15 2020

A greater proportion of Waterloo graduating year students report participating in two or more high impact practices compared to the U15 T1A

Note: *High impact practices (HIPs) require meaningful interactions with faculty and students, encourage collaboration with diverse others, and provide frequent and substantive feedback. NSSE asks about participation in six HIPs.

Source: NSSE

In 2020, 63% of Waterloo graduating year students reported that their education contributed to solving complex, real-world problems compared to 55% among U15 comparators T1A T1C

Source: NSSE
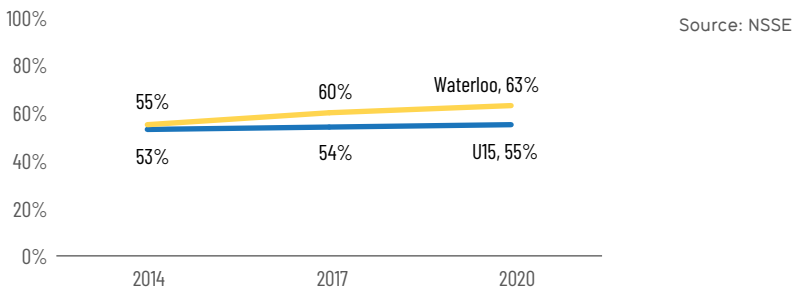
Over the past four years, around 85% of non co-op alumni reported that skills gained at Waterloo were related to their employment compared to around 96% of co-op alumni T1A T1C

Source: Ontario University Graduate Survey
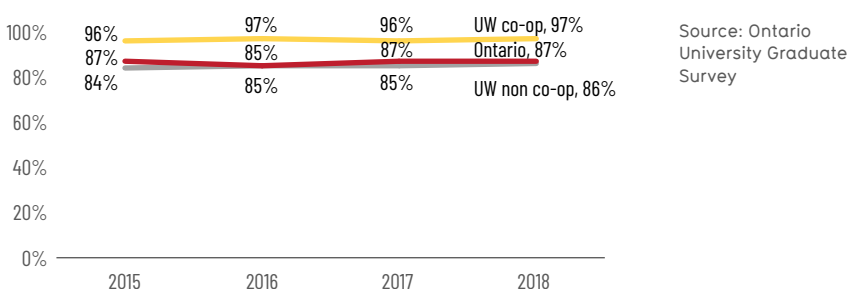
A DEEPER DIVE ON TECHNOLOGY-ENABLED LEARNING

Waterloo's strategic plan makes a direct commitment to advance technology-enabled learning. A working group was formed in 2022 to inform the development of a digital learning strategy. Waterloo has been a leader in digital learning, but the concept of technology-enabled learning is evolving, and Waterloo's approach is evolving with it.

Today, opportunities for using technology in learning are more available than ever, in part because remote learning during the pandemic created more exposure to online learning. The emerging approach makes use of technology to improve student experience in in-person courses by offering many of the online learning advantages (the ability to work at their own pace, watching lectures more than once to review material). This allows in-person components to focus on more interactive activities like problem solving or discussion. Technology also offers new possibilities for the University to reach mid-career professionals who are not interested or able to take on-campus courses, create joint courses and programs with other universities, and offers more opportunities for international students.

While good work in this area is happening across campus, sometimes it is occurring in siloes. The new Digital Learning Strategy coming in late 2022 will provide an umbrella for coordinating these activities, limiting inefficiency and duplication, while still allowing for creativity afforded by local experimentation.

3

GOAL T2: ENHANCE GRADUATE AND POST-DOCTORAL STUDIES BY EMPHASIZING THE UNIQUE ATTRIBUTES OF THE UNIVERSITY OF WATERLOO AND OUR TALENTED AND DIVERSE GRADUATE STUDENT COMMUNITY

OBJECTIVES

T2A GROW GRADUATE WORK-INTEGRATED LEARNING

T2B INCREASE EXTERNAL PARTNERSHIPS FOR GRADUATE LEARNING

T2C FOSTER AN INTERDISCIPLINARY ENVIRONMENT FOR GRADUATE STUDENTS

T2D STRENGTHEN GRADUATE STUDENT SUPPORT

T2E STIMULATE FLEXIBLE, INTERDISCIPLINARY GRADUATE PROGRAMS

SELECTED INITIATIVES

CLICK ON THE TITLES TO LEARN MORE ABOUT EACH INITIATIVE.

Progress legend

Started | In progress | Completed

T2A

Growing graduate work-integrated learning (WIL)

Waterloo's goal is to build GradWIL to be a prominent differentiator for graduate studies. In 2021 Graduate Students and Postdoctoral Affairs (GSPA) formed a working group with Co-operative and Experiential Education to explore structures and models for GradWIL, build a menu of experiential options for faculties and programs to use, and develop a communication plan.

T2B T2C

Increasing thematic research funding and partnerships available for graduate students, post-doctoral fellows, and faculty

Through 2021-2022, GSPA worked with Institutional Analysis and Planning and Information Systems Technology to identify graduate student financial metrics, including research funding and productivity. These efforts will inform future decisions for growing Waterloo's graduate student programs.

T2C T2E

Developing new interdisciplinary graduate programs based on recommendations from the Interdisciplinary Task Force

Building on recommendations from the Interdisciplinary Task Force, and with support from the Teaching Innovation Incubator (TII), GSPA seeds concepts and facilitates administrative hurdles to support faculties developing interdisciplinary programs. Faculties developed and / or implemented four programs over

2021-2022 and the provost office committed $2.1M to support an interdisciplinary postdoctoral scholars' program for 2022-2025.

T2C T2E

Implementing novel, interdisciplinary courses delivered by PhD students

Emerging scholars are working with the TII on the "wicked problem" course development initiative, aiming to solve similar issues from different, interdisciplinary perspectives. In 2021-2022 a senior doctoral student from each Faculty was selected to collaborate and develop an interdisciplinary, team-taught course on addressing climate change. The course will be launched in 2023, along with new opportunities identified to advance the program.

T2D
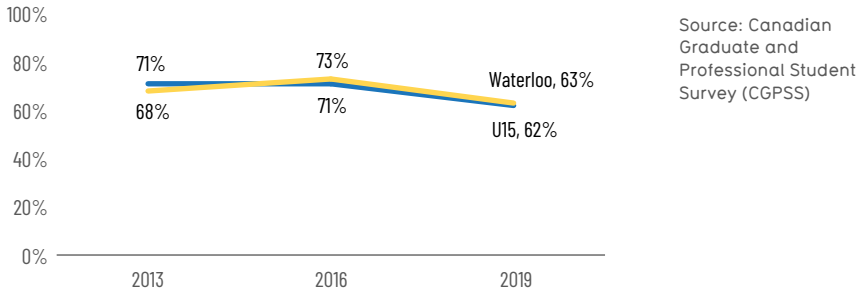
Developing and enhancing graduate student supports

Waterloo's Task Force on Graduate Student Supervision will report their findings in 2022-2023, and combined with results from the 2022 Canadian Graduate and Professional Student Survey (CGPSS), will inform the University's strategic directions on improved graduate student experience. Building on this work, Policy 30 is being revised. Policy 30 governs relationships between teaching assistants (TAs) and the University at all levels and will be implemented to provide greater clarity and support to instructors, students, and TAs.
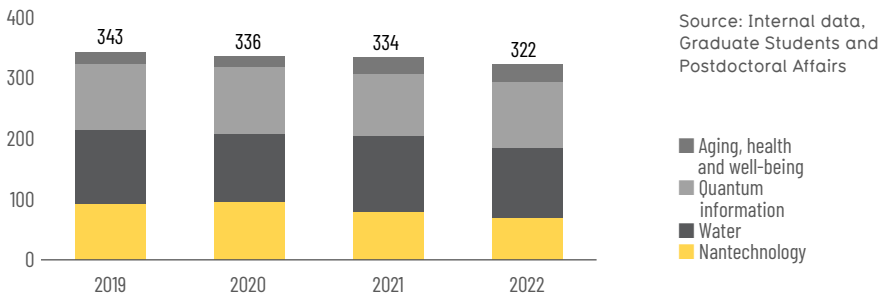
SELECTED INDICATORS

TO READ MORE ABOUT THE INDICATORS BELOW, VISIT THE STRATEGIC PLAN ACTION AND PROGRESS WEBSITE.

Both Waterloo and the U15 have seen a decline in graduate students' rating of the opportunities for support and training for internships, practicums, and experiential learning as good, very good, or excellent T2A T2D

Source: Canadian Graduate and Professional Student Survey (CGPSS)

- 2013: 71% / 68%
- 2016: 73% / 71%
- 2019: Waterloo, 63% / U15, 62%

Enrolment in four Waterloo interdisciplinary graduate programs has remained relatively steady since 2019 T2C T2E

Source: Internal data, Graduate Students and Postdoctoral Affairs

- 2019: 343
- 2020: 336
- 2021: 334
- 2022: 322

Legend:
- Aging, health and well-being
- Quantum information
- Water
- Nanotechnology

About half of both Waterloo and U15 masters with thesis and doctoral students would definitely select the same faculty supervisor if they were to begin their studies again T2D

Source: CGPSS

- U15 masters with thesis 52.3%
- Waterloo masters with thesis 45.6%

- Waterloo doctoral 54.9%
- U15 doctoral 52.8%
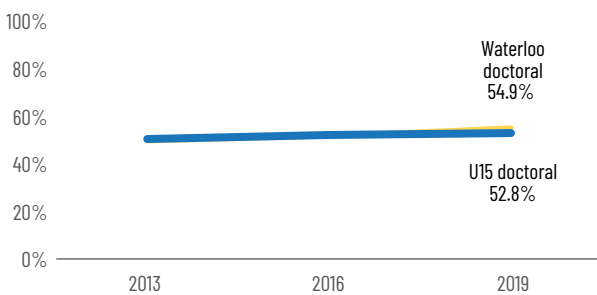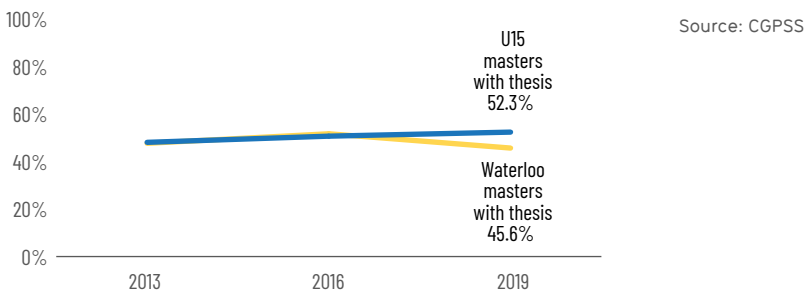
SOMETHING WICKED THIS WAY COMES…

The Wicked Problems Course project is a collaborative effort from GSPA and the Teaching Innovation Incubator (TII). The project addresses a key strategic plan objective – to advance interdisciplinarity – and in doing so, leverages another strategic plan objective: to promote quality and innovation in learning.

This new project will build graduate student capacities to conceive, organize, and deliver novel programming about a complex, global challenge within an interdisciplinary paradigm. It will expose graduate students to scholars with diverse perspectives and approaches for solving the same issue, and develop their skills for working across disciplines. The result will be unique professional development opportunities for graduate students and learning experiences for undergraduate students.

The course is being developed through the TII to harness expertise from across the university: CTE in interdisciplinary course design, CEL for online pedagogy, and multiple academic support units and faculties to address administrative challenges. The course will be offered with online modules, maximizing the value of the cutting edge content generated by emerging researchers.

The first iteration of this project will be a course on climate change, to be offered in winter 2023. The course will also provide a roadmap for the development of future interdisciplinary courses.

GOAL T3: CONTINUE TO LEAD THE WORLD IN CO-OPERATIVE EDUCATION AND SUPPORT THE WORKFORCE OF THE FUTURE THROUGH FULLY INTEGRATED ACADEMIC AND EXPERIENTIAL LEARNING OPPORTUNITIES

OBJECTIVES

T3A LEVERAGE EMPLOYER, INDUSTRY, GOVERNMENT, AND ALUMNI NETWORKS

T3B RECRUIT AND RETAIN FUTURE READY TALENT

T3C INCREASE INTERDISCIPLINARY RESEARCH OPPORTUNITIES FOR CO-OP STUDENTS

SELECTED INITIATIVES

CLICK ON THE TITLES TO LEARN MORE ABOUT EACH INITIATIVE.

Progress legend

Started | In progress | Completed

T3A T3B T3C

Implementing the Future Ready Talent Framework (FRTF) to increase impact

Waterloo's Office of Co-operative and Experiential Education (CEE) created the FRTF in 2020 to lead in a volatile working environment and contribute to a sustainable world. In 2021-2022 CEE integrated new learning competencies identified through this framework throughout co-op evaluations, work term consultations with employers, professional development courses, and career workshops for students. CEE uses the FRTF model to identify evolving competencies through student employment evaluations which are then integrated into student and employer engagement efforts.

T3B

Embedding equity in work-integrated learning (WIL)

To support equity approaches in WIL, CEE is investigating new, more flexible forms of WIL, examining embedded processes and approaches that underpin WIL programs, and hired two new associate directors — one with responsibilities for equity, inclusion, diversity, and anti-racism and one with responsibilities for Indigenous relations.

T3A T3B T3C

Diversifying WIL opportunities

Gaining employment in the first co-op work term is a historic challenge and was exacerbated by COVID-19. CEE created an honorarium-based program, co-developed with industry partners, to provide in-demand skills to students who are unable to secure first work-term jobs. Waterloo Experience (WE) Accelerate has been adopted as an ongoing program. Among WE Accelerate participants who completed the program in spring 2021 and also had a work term in winter 2022, 94 per cent were employed, compared to 90 percent of first work term students who did not participate in WE Accelerate.
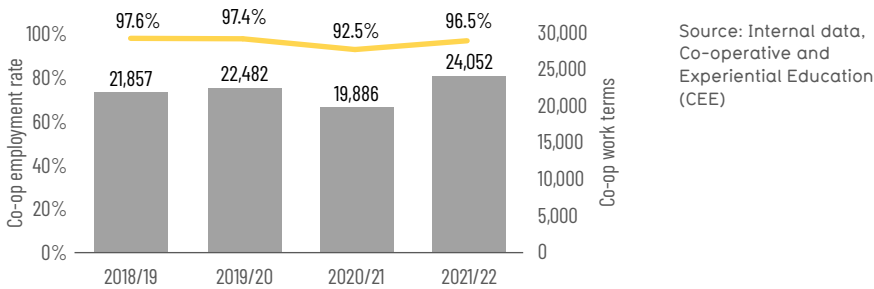
T3A T3B

Securing and advancing Waterloo's global leadership

Waterloo's Work-Learn Institute is the only institute in the world dedicated to researching co-operative and work-integrated learning, helping to propel Waterloo's global leadership in these domains. Three members of the CEE leadership team hold key leadership roles in each of the three national and international groups focused on co-operative and experiential learning. One of these, the World Association for Co-operative Education (WACE) moved its secretariat to Waterloo and in 2023 Waterloo will host the global WACE conference.

SELECTED INDICATORS

TO READ MORE ABOUT THE INDICATORS BELOW, VISIT THE STRATEGIC PLAN ACTION AND PROGRESS WEBSITE.

Co-op employment has now almost returned to pre-pandemic rates as the number of co-op work terms required continues to increase T3A T3B

Source: Internal data, Co-operative and Experiential Education (CEE)

Waterloo continues to increase its co-op employer base T3A T3B

Source: Internal data, CEE
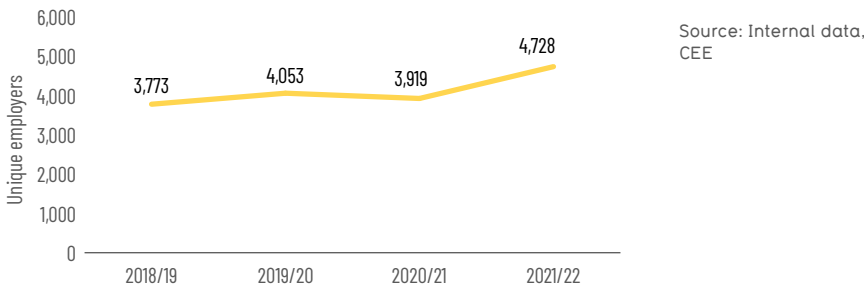
Waterloo continues to rank as one of the world's top institutions for producing job-ready students T3A T3B

INDICATOR	RANK IN CANADA	SCORE
Employer reputation	2 (2)	75.5 (70.1)
Partnerships with employers	2 (2)	98.5 (97.8)
Alumni outcomes	2 (2)	87.4 (84.8)
Employer / student connections	2 (1)	88.0 (85.9)
Graduate employment rate	1 (1)	86.2 (81.8)

INSTITUTION	2022
MIT	1
Stanford	2
UCLA	3
U of Sydney	4
Harvard	5
Toronto	21
Waterloo	24

Note: previous year rank and score is supplied in brackets.

Source: QS Employability Ranking

Enrolment in new forms of work-integrated learning, like EDGE, is increasing T3A T3B

Source: Internal data, CEE
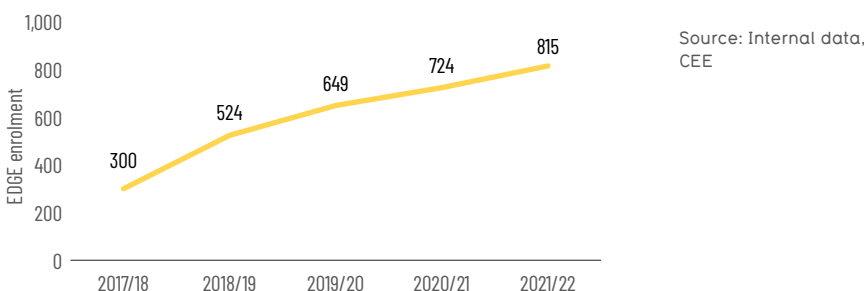
BUILDING ON UNDERGRADUATE SUCCESS TO DEVELOP GRADUATE STUDENT EXPERIENTIAL OPTIONS

Leveraging Waterloo's global leadership in work-integrated learning for graduate students is a major innovation for the University, and vital to strengthen the University's commitment to develop talent for a complex future. Working collaboratively, CEE and Graduate Studies and Postdoctoral Affairs (GSPA) have a goal to offer all Waterloo graduate students an opportunity to participate in WIL, either as a part of the graduate program or an additional experience.

Using its expertise in WIL pedagogy and student support, CEE will develop meaningful WIL experiences for graduate students, with input from GSPA and each Faculty. A GradWIL curriculum development team can support academic programs, ensuring that there are models to build WIL into graduate level curricula. CEE will work with existing employers to articulate the value proposition for employers to engage with graduate students.

These collaborative efforts are paying off. The School of Environment, Resources, and Sustainability launched a new internship program and CEE has developed new supports for graduate students in three Engineering and Math programs. A pre-pilot of enhanced co-op with individualized support in the Master of Management Sciences program is building positive graduate student experiences in WIL. To ensure that the GradWIL initiative is aligned with the interests of the graduate community, consultations will continue this fall.

7

GOAL T4: ESTABLISH A UNIQUE WATERLOO APPROACH TO SUPPORT LEARNING AT VARIOUS STAGES OF INDIVIDUALS' PROFESSIONAL LIVES

SELECTED INITIATIVES

CLICK ON THE TITLES TO LEARN MORE ABOUT EACH INITIATIVE.

Progress legend

Started   In progress   Completed

T4A T4B

Launching WatSPEED to full operation

WatSPEED was developed in 2020 and launched in 2021, in direct response to the strategic plan's goal to establish a lifelong learning centre. The new business unit leverages Waterloo's faculty strengths, learning models, and alumni connections to serve the growing need for upskilling. In 2021-2022 WatSPEED launched three pilots in partnership with professional associations while building operational capacity. WatSPEED's initial business model leverages these partnerships to build initial learning opportunities. Current partners are: Chartered Professional Accountants of Ontario, Canadian Institute for Health Information, and Ontario Society of Professional Engineers. Continuing to build robust partnerships with professional associations and other business partners will remain a cornerstone of WatSPEED's business practice.
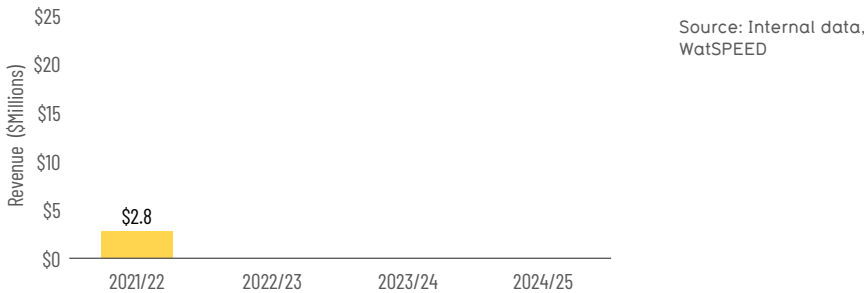
SELECTED INDICATORS

TO READ MORE ABOUT THE INDICATORS BELOW, VISIT THE STRATEGIC PLAN ACTION AND PROGRESS WEBSITE.

WatSPEED secured three business partners in its first year of operation

Source: Internal data, WatSPEED
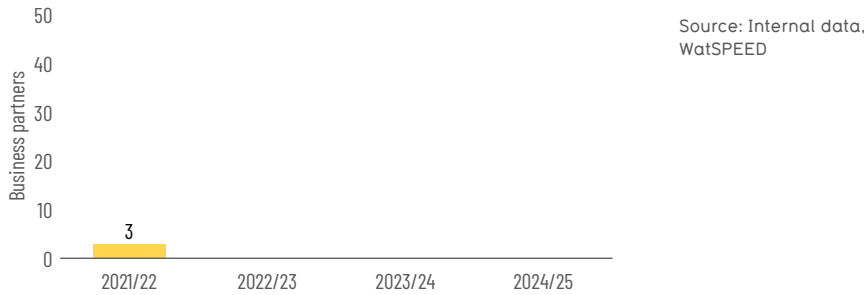
In its initial year, WatSPEED had a revenue of $2.8M

Source: Internal data, WatSPEED

By the end of May 2022, WatSPEED had a complement of approximately 30 resources represented by a mix of ongoing full-time, full-time contingent of funding, secondments, and contracted roles

Source: Internal data, WatSPEED

WATSPEED PARTNERSHIP TO UPSKILL HEALTHCARE EMPLOYEES IN DATA SCIENCE

For more than 20 years, Waterloo worked with the Canadian Institute of Health Information (CIHI) – an organization that provides reliable data to accelerate improvements in health care, health system performance, and population health across Canada. Today, WatSPEED and CIHI's relationship has expanded and deepened as they work towards a mutual goal of upskilling professionals.

Working with Waterloo faculty, WatSPEED created a series of customized online programs to advance the skills of more than 200 data analysts and managers. These offerings are designed to teach CIHI employees data science techniques using modern programming languages, along with the fundamentals and responsible use of data science. CIHI also recognizes the need for upskilling among their stakeholders who work across Canada's health systems. As such, CIHI has supported WatSPEED's application for $1 million in funding Sector Workforce Solutions Program to develop an open artificial intelligence program that leverages CIHI's insights and data.

Discussion for additional collaboration between WatSPEED and CIHI is underway, including experiential learning support for CIHI program participants that leverages Waterloo co-op students. To learn more about this multi-disciplinary partnership, visit **WatSPEED's website**.

9

OBJECTIVES

GOAL R1: WATERLOO WILL USE ITS DISCIPLINARY AND INTERDISCIPLINARY STRENGTHS TO SOLVE INCREASINGLY COMPLEX, REAL–WORLD PROBLEMS

R1A LEAD NATIONALLY AND GLOBALLY AT THE INTERFACE OF SOCIETY, HEALTH, AND TECHNOLOGY

R1B ATTRACT AND RETAIN TOMORROW'S RESEARCH LEADERS

R1C EXPLORE INTERDISCIPLINARY, CROSS-FACULTY RESEARCH OPPORTUNITIES

R1D PRIORITIZE INTERNATIONAL PARTNERSHIPS FOR THE GLOBAL GOOD

SELECTED INITIATIVES

CLICK ON THE TITLES TO LEARN MORE ABOUT EACH INITIATIVE.

Progress legend

Started   In progress   Completed

R1A R1C

Creating a health innovation hub

Waterloo is building an **Innovation Arena** to fast track the development of health technologies. Federal funding for the health innovation partnership was announced in August 2021 and renovation of existing facilities in downtown Kitchener began in early 2022. It is anticipated that the Innovation Arena will be completed in 2023. To attract investment to fuel research and invest in talent, Waterloo engaged with regional partners to develop two national proposals:

• a proposal for the federal government's Canadian Biomanufacturing Research Fund (CBRF) program to establish a hub for biomanufacturing related to pandemic preparedness in conjunction with institutions in Ontario as well as participation in one other CBRF proposal, and

• a Canada First Research Excellence Fund (CFREF) proposal on Transformative Health Technologies in virtual care, point of care diagnostics, therapeutic robotics, assistive technology, and secure data-informed technologies.

R1B

Increasing faculty awards and recognition

Faculty awards and recognition build Waterloo's research profile and increase research capacity. The Waterloo Awards Committee contracted a consultant to identify how to better promote and facilitate the submission of high-quality nominations of Waterloo scholars across all disciplines for prestigious awards and honours, with an equity, diversity, and inclusion lens. This report will be finalized in fall 2022 and an implementation plan will follow.

SELECTED INDICATORS

TO READ MORE ABOUT THE INDICATORS BELOW, VISIT THE STRATEGIC PLAN ACTION AND PROGRESS WEBSITE.

The field-weighted citation impact (FWCI)* for Waterloo and all selected international comparator institutions is above the expected average of 1.0 (2016-2020) R1A R1B R1C R1D
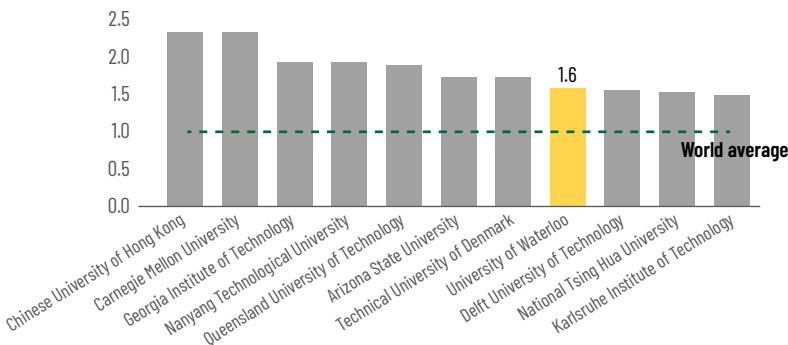
Note: *FWCI is an indicator of research impact. It normalizes for year, subject area, publication type, and size of the dataset. The global (or world) average is the expected value of 1.0.

Source: 2022 University of Waterloo Library update (2016–2020)

Waterloo's CIHR funding has almost doubled in the last five years, but considered as a share of U15 CIHR funds, Waterloo's proportional share has remained steady at ~1.2% R1A
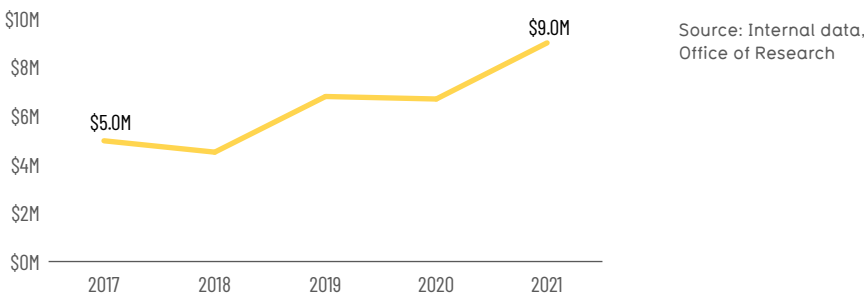
Source: Internal data, Office of Research

Between 2016 and 2020, 10.5% of Waterloo's publications were among the top 10 percent most interdisciplinary publications, consistent with international and national comparators R1B R1C
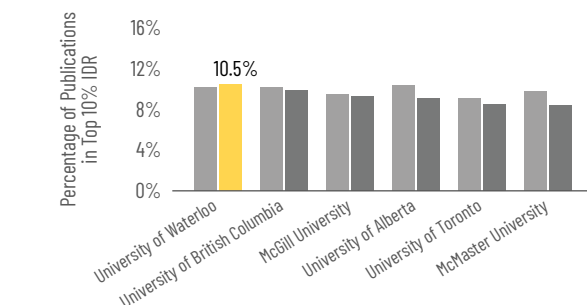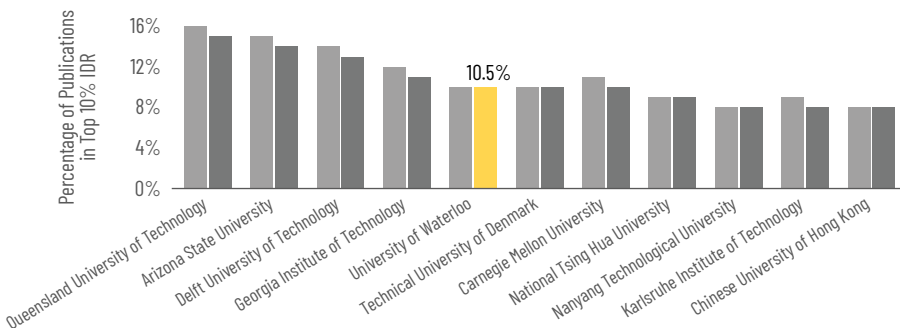
Note: *The interdisciplinarity (IDR) score is used to understand the diversity of research fields cited in publications from a given university.

Source: 2018 Elsevier report (2012–2016) with 2022 update from Elsevier: (2016–2020)

- ■ 2012–2016
- ■ 2016–2020

THE RIGHT STUFF: HEALTH INNOVATION AT WATERLOO

The underpinnings of investment, infrastructure, and talent have started to shape organization of health innovation at Waterloo, building on Waterloo's academic, research, and commercialization strengths.

In August 2021, FedDev Ontario funded the **Southern Ontario Health Innovation Partnership**, led by Waterloo's Velocity program. The investment is vital to developing the Innovation Arena. This infrastructure will co-locate health tech founders at the earliest stages of business building in an environment singularly focused on equipping and guiding new enterprises. New funding proposals that are already in progress are expected to amplify health tech capabilities at the Innovation Arena.

Sixteen existing health tech startups, many connected to research initiatives at Waterloo, are already working at Velocity, using their combined talent to advance health technology solutions. Meanwhile, Velocity is further refining supports for medical device and biotechnology startups by commissioning workflows to support commercialization of existing startups. More heath tech founders are on track to locate at the Innovation Arena, which is on schedule to open late 2023.

Spotlight on existing health tech Innovation Arena startups

HyIvy Health: using tech to support women's pelvic health
Cobionix: using robots to improve health care productivity
Aiimsense: bringing diagnostic to first response for stroke treatment

11

GOAL R2: GLOBAL LEADERSHIP IN INNOVATION AND ENTREPRENEURSHIP

OBJECTIVES

R2A CREATE INTERDISCIPLINARY TEAMS TO SOLVE PROBLEMS RELEVANT TO CANADA'S ECONOMY

R2B INCREASE INFRASTRUCTURE FOR RESEARCH COMMERCIALIZATION AND POLICY APPLICATION

R2C ESTABLISH A COMMERCIALIZATION FUND

R2D LEVERAGE NETWORKS TO EXPAND ENTREPRENEURIAL OPPORTUNITIES

R2E FOSTER AN ENVIRONMENT THAT STIMULATES ENTREPRENEURIAL PURSUITS

SELECTED INITIATIVES

CLICK ON THE TITLES TO LEARN MORE ABOUT EACH INITIATIVE.

Progress legend

Started | In progress | Completed

R2B R2E

Organizational restructuring to support commercialization and entrepreneurship

Waterloo brought together Waterloo Commercialization Office (WatCo) and Velocity under the new position of associate vice-president, commercialization and entrepreneurship, consolidating responsibilities and creating a "low-friction" user experience for innovators and entrepreneurs.

R2B R2E

Creating a roadmap for the entrepreneurship / commercialization support ecosystem

In 2022 the University completed an **online roadmap** outlining the numerous supports, resources, and opportunities available for Waterloo community members pursuing entrepreneurship / commercialization studies or related activities.

R2E

Incorporating equity, diversity, inclusion, and anti-racism (EDI-R) focus in commercialization and entrepreneurship

In 2022, WatCo commissioned an external agency to study Waterloo's commercialization ecosystem through an EDI-R lens with the intent to identify and understand any barriers for broader inclusivity in campus commercialization and entrepreneurship activities.
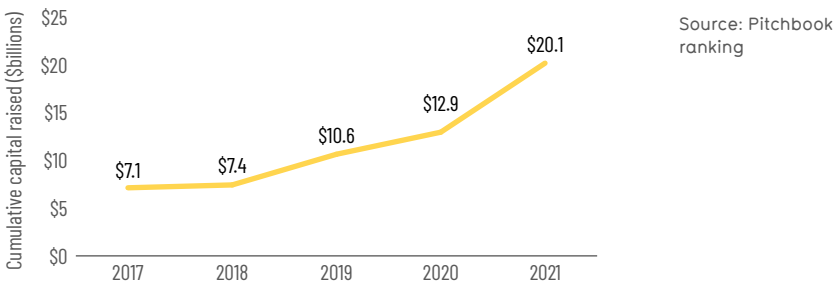
SELECTED INDICATORS

To read more about the indicators below, visit the STRATEGIC PLAN ACTION AND PROGRESS WEBSITE.
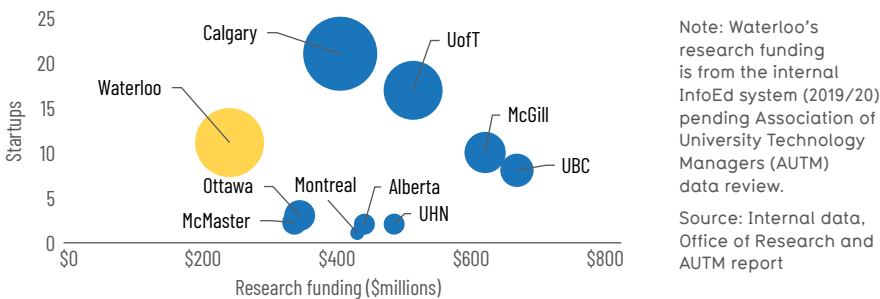
Waterloo continues to rank among top global institutions, and remains the best in Canada, in Pitchbook's overall ranking of universities producing venture capital-backed entrepreneurs R2A R2B R2D R2E

Source: Pitchbook ranking

Waterloo, 22
UofT, 27
McGill, 29
UBC, 47
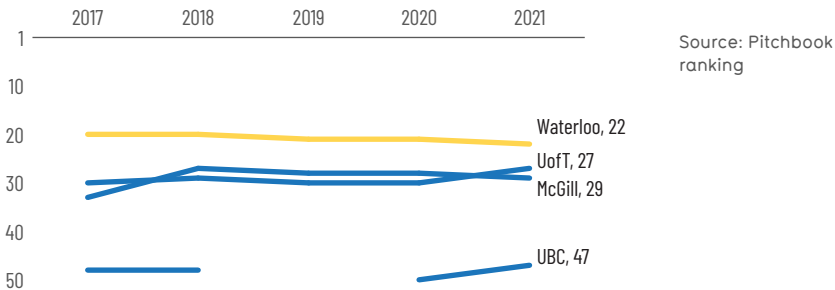
Waterloo ventures have raised over $20B since 2006 R2A R2B R2D R2E

Source: Pitchbook ranking

$7.1, $7.4, $10.6, $12.9, $20.1

By intensity of startup creation (number of startups per $100M in total research expenditure), Waterloo's performance is among the top in the U15 R2A R2B R2D R2E

Note: Waterloo's research funding is from the internal InfoEd system (2019/20) pending Association of University Technology Managers (AUTM) data review.

Source: Internal data, Office of Research and AUTM report

CREATING SPACE AND OPPORTUNITY FOR INNOVATION

Three Waterloo students, Engineering's Adrian Simone, Masters of Business, Entrepreneurship and Technology student Rania Al-Sheikhlv, and Science's Krystal Yang, worked with faculty advisor Brian Ingalls to create **MicroBuild**, a company that uses recycled aggregate and a natural microbial process to form the bio-brick. This masonry unit is lighter and more durable than standard bricks providing an important new carbon-neutral raw material solution.

This project showcases Waterloo's **innovation ecosystem**. Simone began working on the idea while on a co-op work term in the construction industry. A second co-op term, an **Enterprise co-op term** with the Conrad School of Entrepreneurship and Business, allowed the team to further develop their enterprise. Competitions with Conrad and Velocity provided an opportunity to hone concepts and raise interest. Faculty advisors with experience in commercializing research innovations provided leadership and guidance. Finally, **Velocity Science** provides space, mentorship, collaboration opportunities, and access to potential investors and customers.

In September 2022, Simone and Al-Sheikhlv were announced as a national runner-up in the **2022 James Dyson Award competition**. Simone will be speaking on a panel of early-stage start-ups at Waterloo's **Innovation Ecosystem** event and MicroBuild will return to **Velocity Science** to continue working.

Advancing research for global impact

OBJECTIVES

GOAL R3: ACHIEVE GREATER RESEARCH IMPACT BY LEVERAGING WATERLOO'S PARTNERSHIPS

R3A STRENGTHEN AND INCREASE STRATEGIC PARTNERSHIPS WITH RESEARCH PARTNERS

R3B INCREASE PRIVATE-SECTOR PARTNERSHIPS TO ENHANCE COMPETITIVENESS AND INNOVATION

R3C INCREASE PARTNERSHIPS WITH PUBLIC AND NOT-FOR-PROFIT SECTORS FOR POLICY DEVELOPMENT

SELECTED INITIATIVES

CLICK ON THE TITLES TO LEARN MORE ABOUT EACH INITIATIVE.

Progress legend

Started · In progress · Completed

R3C

Creating a knowledge mobilization strategy

Waterloo's institutional research knowledge mobilization strategy is an effort to engage with government and the public sector more effectively around policy issues, creating links between new knowledge and affecting change.

A priority of the knowledge mobilization strategy initiative is to increase partnerships with private and public sector organizations to support translating research into action with government and not-for-profit sectors. In 2021-2022, the Office of Research completed a review and analysis of existing industry partners to identify risks, opportunities, and potential sectors for this work.

R3A

Developing a "whole-of-university" approach for international engagement

Waterloo International (WI) is working with partners across campus to ensure that Waterloo's engagement with priority areas in the world is coordinated, purposeful, and tailored to needs and opportunities. This will help to ensure that Waterloo's presence in the world gives global prominence to Waterloo's activities and achievements, offers effective international opportunities for Waterloo's members, and builds strategic partnerships-for-impact with outstanding peer universities globally.

WI is implementing a new post-pandemic international engagement strategy using virtual, digital, and in-person connection strategies (both abroad and within Canada). This includes meetings with key government representatives and priority university partner members.

SELECTED INDICATORS

While Waterloo's sponsored research funding from industry has been relatively stable over time, the amount of funding received by government to match industry funding has decreased R3A R3B R3C

Source: Internal data, Office of Research

- Industry funding
- Government match of industry funding
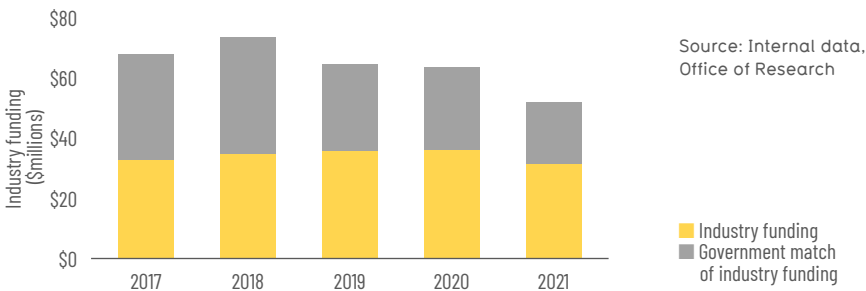
Waterloo's academic collaborations with industry partners, viewed through publications, has remained stable over time and ranks eighth among the U15 in 2021, which is at the U15 average (range is 5.6% to 7.7%) R3A R3B R3C

Source: Leiden ranking

U15, 6.3%
Waterloo, 6.3%

Research funding from international sources has remained relatively constant over time R3A

Source: Internal data, Office of Research

$18.7 $21.0 $19.2 $18.7

Waterloo's academic publishing collaborations with international partners has increased by about nine percentage points in the last five years and ranks third among the U15 in 2021, which is at the U15 average (range is 51.2% to 62.6%) R3A R3B R3C

Source: Leiden ranking

Waterloo, 59.4%
U15, 57.7%
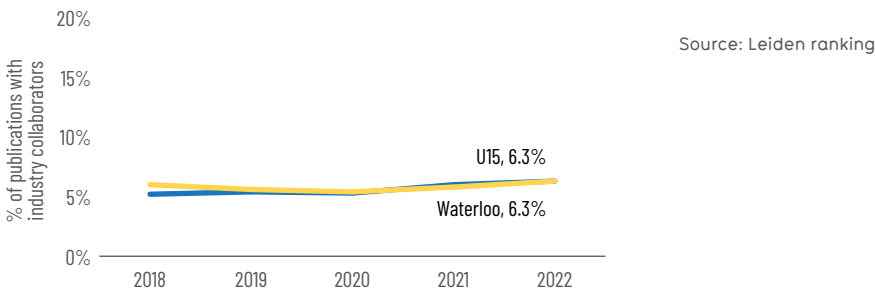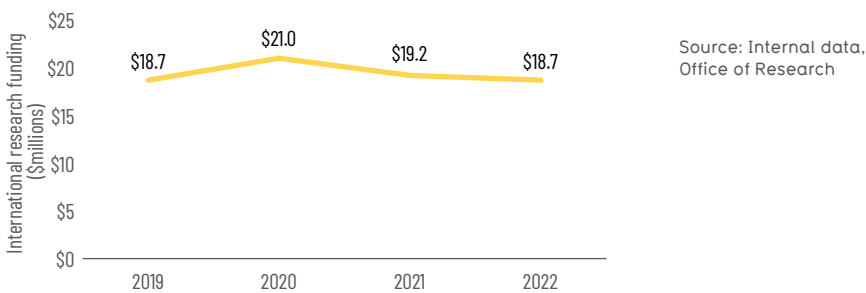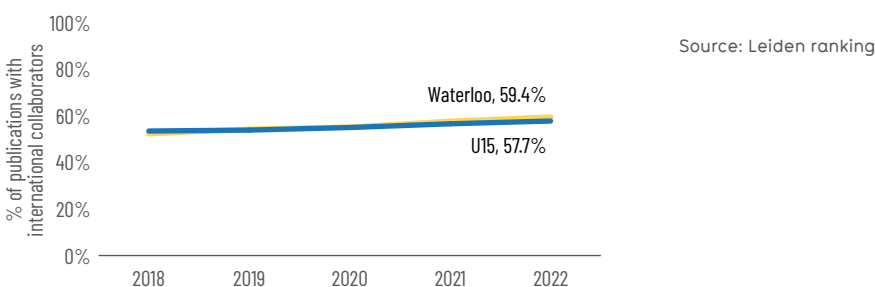
MAGNIFYING IMPACT THROUGH PARTNERSHIPS

The University of Waterloo's relationship with the University of Strathclyde (in the United Kingdom) is an example of how whole-of-university engagement between two committed institutions can lead to impact in multiple ways. Built first on the **universities' shared scholarship strengths**, the partnership has since evolved, cutting across talent, research, and community domains of each university's strategic priorities.

In October 2021 the universities announced the newly formed **Strathclyde and Waterloo Joint Transatlantic Funding Call** to catalyze collaborative work between members and advance the two universities' strategic plans. Thirty-five applications involving more than 100 colleagues from the two universities were received. **Five awards** were made addressing artificial intelligence, biosensors, penal environments, public health, and sustainable energy. Some of the unfunded applicants have continued their collaborations. Staff from each universities' libraries, for instance, have continued to share perspectives on how open access publishing is evolving within each of their communities.

Work is continuing to sustain this momentum – student exchanges are scheduled, efforts to engage business and civil society in collaborative research are planned, and the two universities' vice-chancellors are facilitating leadership dialogues on the role of universities in society. With dedication and purpose, universities working together internationally can magnify their impact.

GOAL C1: BE A PEOPLE–CENTERED INSTITUTION COMMITTED TO GENUINE CARE, CONCERN, RESPECT, INCLUSIVITY AND WELL–BEING FOR ALL

OBJECTIVES

C1A MOBILIZE THE WELLNESS COMMITMENTS FROM THE OKANAGAN CHARTER AND HEALTHY WORKPLACE STATEMENT

C1B NURTURE RELATIONSHIPS AND CREATE A COMMUNITY OF LEARNERS

C1C CREATE A SUPPORTIVE ENVIRONMENT FOR INTERNATIONAL STUDENTS

SELECTED INITIATIVES

CLICK ON THE TITLES TO LEARN MORE ABOUT EACH INITIATIVE.

Progress legend

Started | In progress | Completed

C1A

Informing the Wellness Collaborative

Waterloo's Wellness Collaborative's work is informed by results from the Canadian Campus Wellbeing Survey and a new internal student experience survey, which was developed using the Waterloo Student Experience and Engagement (WatSEE) framework. In 2021-2022 the Wellness Collaborative worked on several priority areas including a Thrive campus-wide health promotion campaign, an integrated wellness framework, food security, a healthy learning environment, and mental health literacy.

C1B

Creating a student-driven food security strategy

In the area of food security, Campus Wellness and Food Services collaborated with the University of Guelph and the University of British Columbia to successfully recruit racialized students for a digital storytelling workshop — Elevating Voices of Food Insecurity. Once produced, these stories will be screened with target audiences.

C1B

Building wellness into the learning envrionment

In 2021-2022, the Wellness Collaborative consulted with academic support units and senior leaders and identified Universal Design for Learning (UDL) as a key approach for achieving an overall positive experience and equal access for all students. UDL is the purposeful design of course outcomes, materials, and assessments that promote equity, diversity, and inclusion.

C1B

Creating a supportive community around mental health

Campus Wellness (CW), Organizational and Human Development and Centre for Teaching Excellence (CTE) partnered to create the Mental Health Literacy Program, which was implemented by CW in fall 2021. After taking the program, 92 per cent of pilot participants felt they can recognize someone in distress and 100 per cent of pilot participants felt confident in supporting someone facing mental health concerns or in mental distress. Program components were also embedded into CTE's tutorial assistant's training program and the Student Success Office's Student Leadership training program.

C1C

Developing international student supports

International student support is a priority at Waterloo. Space for a new international student hub in Needles Hall has been allocated and design is underway. The dedicated, welcoming space for international students will house existing support services for international students, promote awareness within the University of Waterloo community, and cultivate a sense of belonging for everyone.

SELECTED INDICATORS

TO READ MORE ABOUT THE INDICATORS BELOW, VISIT THE <u>STRATEGIC PLAN ACTION AND PROGRESS WEBSITE</u>.

Since 2014, the proportion of Waterloo and U15 graduating year undergraduate students who reported that the University supports their overall well-being quite a bit and very much, has declined C1A

Source: National Survey of Student Engagement (NSSE)
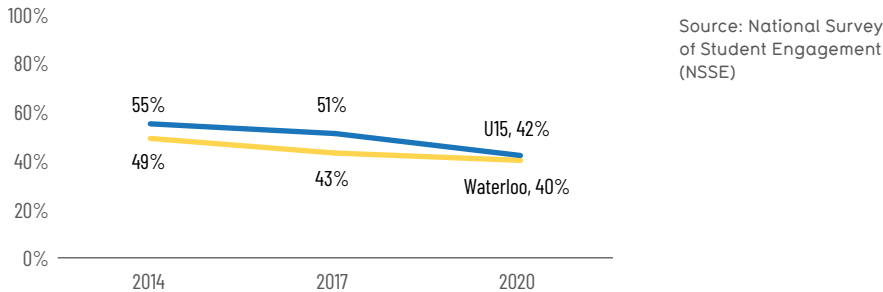
About six out of 10 Waterloo students reported that they are aware of mental health supports, believe that the campus environment supports mental health, and believe that the University has a sincere interest in their well-being C1A

Note: *Not asked in the Canada-wide survey

Source: National College Health Assessment (NCHA) 2019

Since 2014, the proportion of Waterloo international undergraduate students who reported their entire educational experience at Waterloo was good or excellent, has declined C1C

Source: NSSE
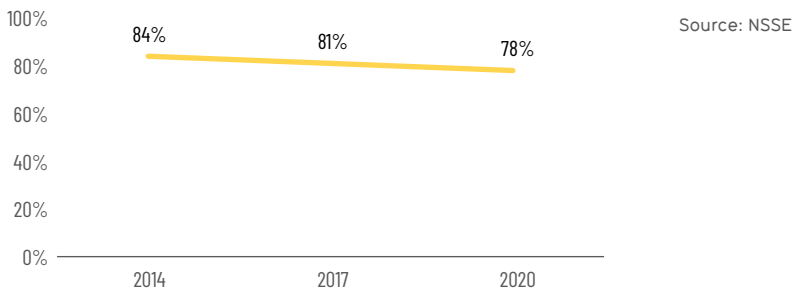
CREATING SPACE TO BUILD A PEOPLE-CENTERED INSTITUTION

Being a people-centered institution means responding to people's needs, in real-time. The shift to remote student life during the pandemic created new challenges for graduate students, especially international graduate students. The same struggles that many graduate students faced in regular life – managing academic and personal demands, concerns about belonging and caring for themselves and others, all while balancing the rigors of graduate student life – were intensified with the shift to virtual learning.

Counselling Services saw the need for a novel approach to community-building and support for mental health and wellness. The **Grad Student Community and Conversation Circle** offered graduate students an opportunity to connect with one another in an informal and confidential environment to talk about the stressors in school and life including relationships, wellness, worries about academic competence, loneliness, stress management, and emotional resilience. Through the facilitated group, students give one another encouraging feedback and explore new ways to manage issues unique to graduate students.

The group meets weekly with consistent engagement of graduate students, virtually and across many time zones – something that is not possible in person. Connections have transcended the group and friendships have formed as a result – an example of true community building and support.

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Strengthening sustainable and diverse communities

GOAL C2: FOSTER A CONNECTED AND SUPPORTIVE COMMUNITY THAT INSPIRES STUDENTS, FACULTY, STAFF AND ALUMNI TO ACHIEVE THEIR PERSONAL, ACADEMIC AND PROFESSIONAL GOALS WHILE FEELING VALUED

OBJECTIVES

C2A INSPIRE COLLABORATION ACROSS THE INSTITUTION

C2B DEVELOP A CULTURE OF INVOLVEMENT THAT FOSTERS INCLUSIVITY AND A SENSE OF BELONGING

C2C SUSTAIN A MEANINGFUL RELATIONSHIP WITH ALUMNI WORLD-WIDE

C2D ENSURE CONTINUED CONNECTION WITH CO-OP STUDENTS

C2E BROADEN UNDERSTANDING AND ENGAGEMENT OF CAMPUS COMMUNITIES, ALUMNI, AND PARTNERS

SELECTED INITIATIVES

CLICK ON THE TITLES TO LEARN MORE ABOUT EACH INITIATIVE.

Progress legend

Started   In progress   Completed

C2B C2E

Creating engaging, collaborative, efficient communications that demonstrate care and concern for students

In spring 2022 the associate provost students portfolio created a dedicated team, UWaterlooLife. The purpose of this team is to streamline student communications and insights across units using a structured form of collaboration, creating a coordinated approach to communicating and engaging with the student community. The new communication strategy will begin in fall 2022.

C2A

Bringing to life the Student Experience and Engagement (WatSEE) Framework for thriving students

In December 2021 Waterloo's special advisor on student experience delivered the WatSEE which provides a holistic approach to student experience. During 2021-2022, the WatSEE Framework was socialized with faculties and academic support units. Discussions with internal stakeholders are ongoing to identify new and optimize existing resources that align with the WatSEE Framework.

C2B

Embracing equity through academic advising

In 2021-2022, a new, purposeful training and development proposal was created focusing on anti-racism training for academic advisors. This will enhance advisors' ability to support equity-deserving students. Outcomes from these measures will be seen in time through changes in student perceptions of sense of belonging, feeling respected, and safety.

C2A C2B

Fostering a supportive employee community

To address Waterloo's talent needs based on inputs from the employee engagement survey, and expert reports on the performance appraisal process and career progression, the office of the associate provost, human resources initiated a project to create a staff Strategic Talent and Performance Framework.

C2C

Exploring robust alumni engagement in remote environments

Working with faculties, Alumni Relations transformed traditional events to an online platform and developed a new LinkedIn Learning pilot to enhance engaging, bite-sized learning opportunities for alumni to stay connected to the University. New engagement metrics and enhanced data tracking processes were implemented. These efforts improve the quality and availability of data for decision-making focused on building relevant and meaningful programming.

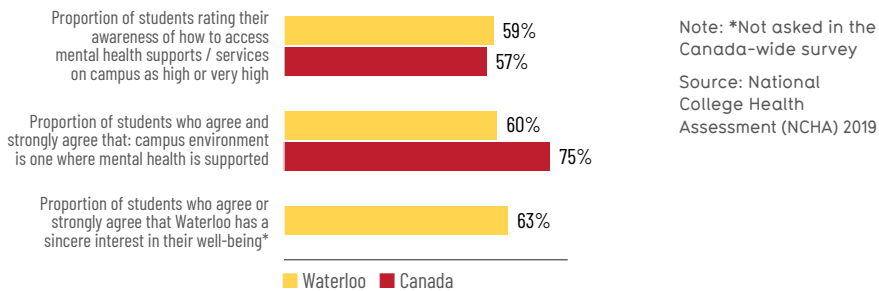# SELECTED INDICATORS

TO READ MORE ABOUT THE INDICATORS BELOW, VISIT THE <u>STRATEGIC PLAN ACTION AND PROGRESS WEBSITE</u>.

*About the same proportion, two-thirds, of Waterloo and U15 international and graduating year students report that they feel a part of a community at Waterloo* C2B

Proportion of international graduating year students who feel a part of a community at Waterloo
- Waterloo: 68%
- U15: 69%

Proportion of graduating year students who feel part of a community at Waterloo
- Waterloo: 64%
- U15: 64%
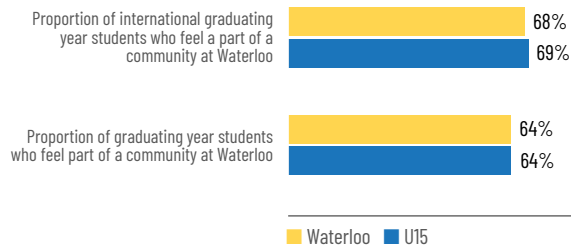
Source: National Survey of Student Engagement 2020

■ Waterloo ■ U15

Alumni engagement scores were maintained throughout the pandemic with just under 15% of alumni engaged through activities such as volunteering, mentoring, outreach, and philanthropy C2C
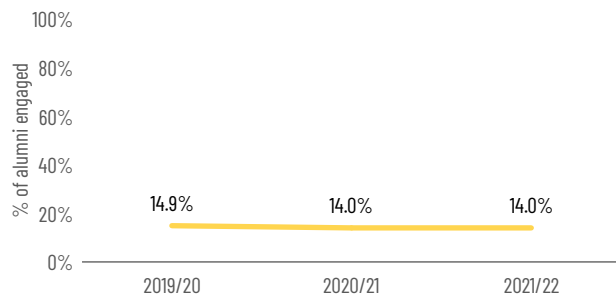
Source: Internal data, Alumni Relations

% of alumni engaged

2019/20	2020/21	2021/22
14.9%	14.0%	14.0%

EMBRACING EQUITY TO FOSTER CONNECTION AND BUILD SUPPORT

Fostering an inclusive community and creating a sense of belonging is a well-communicated University priority. In 2021, Waterloo's Student Success Office (SSO) worked to support students who feel disconnected from the Waterloo experience, let them know that those feelings are valid, and reinforce that there are opportunities to find community on campus.

In a **short video**, Waterloo undergraduate student Rania shares how she found a *"home far away from home"* at Waterloo. As a Warrior, Rania says *"acknowledging how our experiences are unique allows us to address the gaps that exist on campus and beyond. Through community activism, students have created clubs and advocated for services offered through Waterloo's student associations that actively work to address some of these gaps and create safer, more inclusive spaces on campus."* This video acknowledges that students' everyday experiences at Waterloo are shaped by their intersecting identities.

The *"show, not tell"* approach used by the SSO marketing and communications team identified gaps where communications were not highlighting an intersectional approach to experiences that students may face on and/or off campus. This video highlights the crucial role student activism and leadership on EDI-R plays in moving this work forward and informing incoming students about campus services and resources.

19

GOAL C3: CONTINUE TO LEVERAGE OUR RESOURCES TO ENGAGE, DEVELOP AND BUILD OUR CAPACITY AND INFRASTRUCTURE TO CREATE A SUSTAINABLE AND EFFECTIVE INSTITUTION

OBJECTIVES

C3A BECOME A ROLE MODEL BY FULLY IMPLEMENTING THE ENVIRONMENTAL SUSTAINABILITY STRATEGY

C3B LEVERAGE OUR ENTREPRENEURIAL SPIRIT AND MODEL ORGANIZATIONAL EFFICIENCY AND SUSTAINABILITY

C3C ENSURE ALL CAMPUS MEMBERS CONTRIBUTE TO A POSITIVE STUDENT EXPERIENCE

SELECTED INITIATIVES

CLICK ON THE TITLES TO LEARN MORE ABOUT EACH INITIATIVE.

Progress legend

Started | In progress | Completed

C3A

Building awareness of our Sustainable Development Goals progress

In April 2022 the University launched its first report explicitly tracking how it is contributing to the United Nations Sustainable Development Goals through a dedicated **website**. This report builds an important preliminary understanding of how Waterloo is aligning its academic mission and operational practices to solving global challenges. Waterloo is the host of the Sustainable Development Solutions Network in Canada.

C3A

Implementing the Shift:Neutral climate action plan

Waterloo's **Shift:Neutral** climate action plan is a multi-year framework with targets to reduce direct and indirect emissions at Waterloo. In 2021-2022 these actions included developing guidelines for carbon-neutral building design and lifecycle costing, as well as completing a campus-wide energy audit. Waterloo initiated five pilot projects to help reduce carbon emissions and build institutional capacity for further action.

C3B

Completing a next-generation data infrastructure project to facilitate planning and decision-making on graduate student financial support

An integrated central data repository will allow the University to answer strategic questions. Improvements to the institutional data governance structure, policies, and data management guidelines were initiated in 2021. An initial next-generation collaborative data project is underway to facilitate evidenced-based planning and decisions related to graduate student financial support. Project requirements have been finalized as a precursor to developing a technical solution.

C3B

Building a continuous improvement environment and managing institutional change

The associate provost human resources team leads a University-wide steering committee to implement continuous improvement built on Lean principles, building awareness and knowledge about the benefits and application of continuous improvement (CI) methodology. An internal Change Management Community of Practice was established in April 2021. The Change Management Program embraces CI processes and offers a campus-wide, streamlined approach to manage change initiatives and support employees. In 2021-2022, change management principles were used to support preparations for return to campus, establishment of a campus rapid testing centre, and building effective change management principles learning sessions for campus.

SELECTED INDICATORS

TO READ MORE ABOUT THE INDICATORS BELOW, VISIT THE STRATEGIC PLAN ACTION AND PROGRESS WEBSITE.

Since 2018, Waterloo's greenhouse gas emissions have declined C3A

Source: Internal data, Sustainability Office

Greenhouse gas emission change from 2015 baseline

50%	
30%	
10%	2.9% 6.0% 1.1%
0%	Baseline
-10%	-8.6%
-30%	Target -17.5%
-50%	

2018   2019   2020   2021
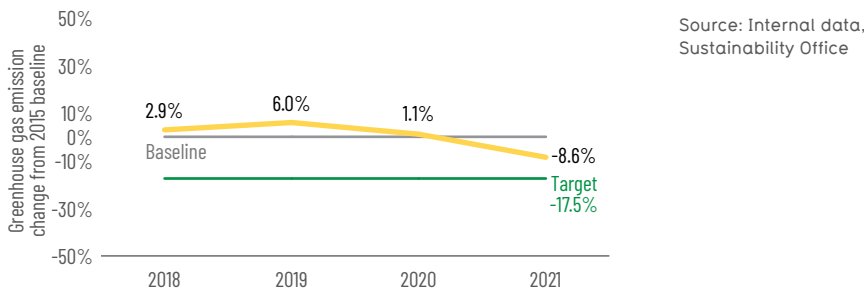
Waterloo's waste diversion rate improved from pre-pandemic rates in 2021 C3A

Source: Internal data, Sustainability Office

Diversion rate

100%	
80%	
60%	Target 60%
40%	33.2% 29.4% 35.8%
20%	
0%	

2019   2020   2021

The proportion of Waterloo employees and students using sustainable transportation has increased C3A

Source: Internal data, Sustainability Office

% sustainable trips to campus

100%	93%
80%	85% 86%
60%	
40%	
20%	
0%	

2016   2018   2020

LEADING IN SUSTAINABLE DESIGN

Higher education institutions have been leaders in the effort to integrate sustainability into the design of campus buildings. As part of Waterloo's commitment to addressing climate change in operations, operationalized through the *Shift*:Neutral climate action plan, the University needed to update its existing commitment to LEED Silver to be more ambitious, and place greater emphasis on energy and greenhouse gas emissions reduction.

Throughout 2021 and 2022, the Sustainability Office and Plant Operations consulted with industry experts, peer institutions, and internal stakeholders to compile the **Net Neutral New Building Guideline**. This is the University's first performance-focused design requirement for new buildings, and is meant to direct campus growth to utilize leading practices for highly-efficient and low carbon design.

The guideline emphasizes efficiency-first approaches with passive principles such as excellent insulation and airtightness, efficient ventilation, and appropriate use of natural lighting. Targets are in place for absolute energy and carbon intensity, pushing buildings to be net-zero or net-zero ready, with flexibility for the variety of lab, classroom, office, and residential buildings at Waterloo.

New buildings constructed under the guideline will mark a key shift on the campus, creating attractive, comfortable, highly-efficient, low carbon, and well-ventilated spaces in which students and employees can thrive.

21

GOAL C4: PROMOTE AND SUPPORT INDIGENOUS INITIATIVES AND A CULTURE OF EQUITY, DIVERSITY, INCLUSION, AND ANTI-RACISM

OBJECTIVES

C4A ACT UPON THE TRUTH AND RECONCILIATION COMMISSION'S RECOMMENDATIONS AND CALLS TO ACTION, AND BUILD RELATIONSHIPS WITH THE LOCAL INDIGENOUS COMMUNITY

C4B IMPROVE THE REPRESENTATION, PARTICIPATION, AND ENGAGEMENT OF EQUITY-DESERVING GROUPS

C4C ADVANCE POLICIES AND PROGRAMMING TO FOSTER EQUITY, DIVERSITY, INCLUSION, AND ANTI-RACISM

SELECTED INITIATIVES

CLICK ON THE TITLES TO LEARN MORE ABOUT EACH INITIATIVE.

Progress legend

Started   In progress   Completed

C4A

Developing strategic direction for the Indigenous relations portfolio

In 2021-2022, the newly formed Office of Indigenous Relations began developing Waterloo's Indigenous strategic plan. This involves integrating the Truth and Reconciliation Commission's recommendations with institutional priorities, creating the office's strategic direction. The plan also outlines a full suite of initiatives. While the plan is being finalized, the focus of the current year has been on building capacity across the institution to support both Indigenous initiatives and new Indigenous faculty and staff.

C4A C4B C4C

Transforming Waterloo's approach and action on equity, diversity, inclusion, and anti-racism (EDI-R)

Like Indigenous relations, the EDI-R Office developed an internal strategic plan to guide their efforts. A key component of these efforts is addressing recommendations from the President's Anti-racism Task Force (PART), reviewing existing policies, practices and procedures, and developing policy and guidelines to identify and remove systemic barriers that contribute to inequitable racial outcomes.

C4B

Supporting transition to post-secondary for Black students

In 2021-2022, the EDI-R Office began creating the Transitional Year Program to offer Black and Indigenous youth in Waterloo Region the opportunity to earn two half-credit courses to increase the likelihood that they will pursue post-secondary studies. A program proposal was developed and is awaiting approval.

C4B C4C

Creating inclusive physical campus space

Ensuring that space, including washroom space, is accessible for diverse genders is important to create an inclusive and welcoming environment. Waterloo continued to convert single-stall gendered washrooms to single-stall gender-neutral washrooms.

C4B C4C

Embedding EDI-R across campus

The EDI-R Office created the program area leads (PALs) to build EDI-R competencies and skills across the institution. The EDI-R Office partnered with the Centre for Extended Learning's Agile Development Team to develop EDI-R micro-credential training for PALs. Thirty-three leaders have been identified for the initial pilot of this program, across faculties and academic support units.
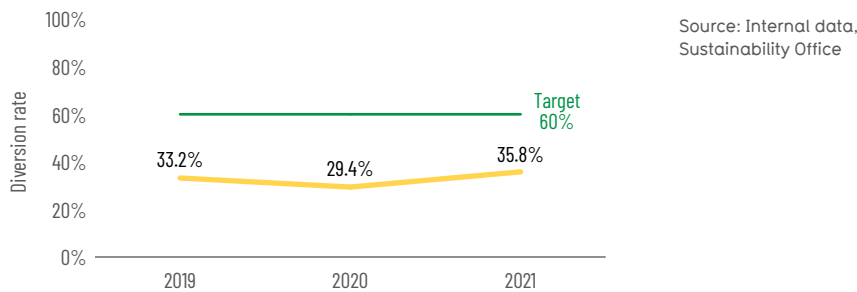
SELECTED INDICATORS

TO READ MORE ABOUT THE INDICATORS BELOW, VISIT THE STRATEGIC PLAN ACTION AND PROGRESS WEBSITE.

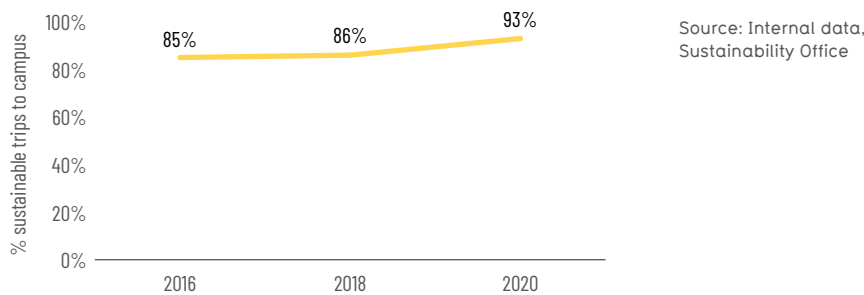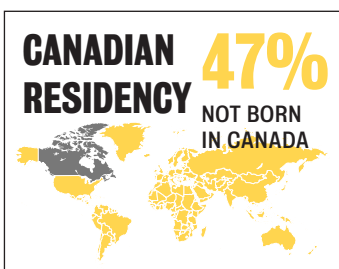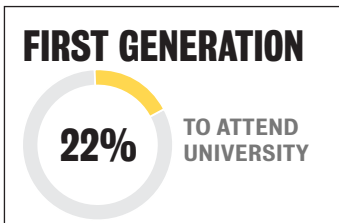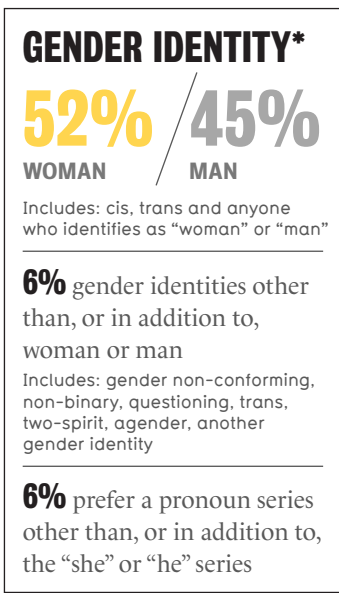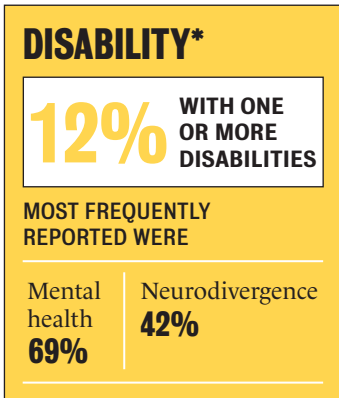*Selected Waterloo baseline student equity demographics* C4A C4B C4C

In 2021, the first Waterloo equity demographics survey collected equity dimensions for students and employees. The following are the results from the student survey.

TO READ MORE ABOUT THE EQUITY SURVEY DATA, VISIT THE EQUITY OFFICE WEBSITE.

1% INDIGENOUS PERSONS
61% Indigenous persons from Canada and **36%** from outside Canada

SEXUAL IDENTITY*
73% heterosexual / straight
11% bisexual
6% asexual

were the most frequently reported

Sexual identities with less than **5%**	queer, questioning, gay, lesbian, pansexual, another sexual identity

RACIAL IDENTITY*

38% WHITE
29% EAST ASIAN
19% SOUTH ASIAN
7% MIDDLE EASTERN
5% BLACK

were the most frequently reported

RELIGIOUS OR SPIRITUAL AFFILIATION*

No religious affiliation — **49%**
Christian — **24%**
Islam — **9%**
Hindu — **8%**

were the most frequently reported

DISABILITY*

12% WITH ONE OR MORE DISABILITIES

MOST FREQUENTLY REPORTED WERE

Mental health **69%**	Neurodivergence **42%**

GENDER IDENTITY*

52% WOMAN / **45%** MAN

Includes: cis, trans and anyone who identifies as "woman" or "man"

6% gender identities other than, or in addition to, woman or man

Includes: gender non-conforming, non-binary, questioning, trans, two-spirit, agender, another gender identity

6% prefer a pronoun series other than, or in addition to, the "she" or "he" series

FIRST GENERATION

22% TO ATTEND UNIVERSITY

CANADIAN RESIDENCY

47% NOT BORN IN CANADA

NOTE: Survey results are accurate to within +/- 2 percentage points, 99 times out of 100.

*Multiple response question; respondents could select more than one response option

26% overall response rate

BEGINNING TO ADDRESS HISTORIC UNDER-REPRESENTATION IN THE ACADEMY

In 2021, Waterloo announced cluster hiring initiatives as one step to address historic under-representation by committing a minimum of 12 positions for Black faculty and 12 for Indigenous faculty. Thus far, eight faculty have been hired through the Black Excellence cluster and three through the Indigenous Excellence cluster.

The Equity, Diversity, Inclusion, and Anti-Racism (EDI-R) Office and Office of Indigenous Relations developed a Black and Indigenous Faculty Mentorship Program to create a mutually beneficial learning environment to support retention and learning. A monitoring program will ensure that program meets key objectives. Two recent examples of the Black and Indigenous excellence cluster hires are highlighted here.

Zelalem Negeri: Dr. Negeri joined the Department of Statistics and Actuarial Science as an Assistant Professor. His research interests are developing and validating statistical methods for applications in public health research, with an emphasis on aggregate data and individual participant data meta-analyses of diagnostic and screening test accuracy studies.

David Fortin: Dr. Fortin joined the School of Architecture as a professor. He is a member of the Royal Architectural Institute of Canada, a LEED accredited professional, and a registered architect in four provinces. Dr. Fortin developed and taught a building science course emphasizing the impact of climate change on architectural thinking and maintains research interests in speculative thinking in design.

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WATERLOO, ON, CANADA N2L 3G1

uwaterloo.ca

The Performance Indicator Peer Comparative Dashboard provides an overall quantitative view of the university through the lens of top-level performance indicators derived from the following key performance descriptors…

- We attract top students
- We are internationalized
- We are a leader in experiential learning
- We retain students to graduation
- Our graduates are in demand by employers
- Our students and faculty create companies and jobs
- We attract a significant level of research funding
- We produce high impact research
- We are financially sustainable
- We have a strong connection with alumni and community

The PI dashboard illustrates the top-level performance indicators associated with these descriptors. The table includes three years' worth of data across each indicator for both Waterloo and the peer comparator group. Comparing performance over time and relative to a group of peer institutions can help place the performance into a relative context. The relevant peer comparator is denoted in the "Peer Comp" column and will vary somewhat by indicator (i.e., U15, U6, Comprehensives in Canada, or Ontario Universities as peer comparators). The "3 Year Trend" column denotes whether Waterloo's most recent year's performance is higher or lower than performance in the earliest year shown on the report. The "Relative to Peer" column denotes whether Waterloo's most recent year's performance is higher or lower than that of the peer comparator group.

Top-level indicators provide a starting point for looking deeper into underlying indicators to better understand what is driving performance (up or down). Similarly, there are lower-level underlying indicators that may serve as leading indicators of future performance in top-level indicators.

Note: Some of the peer comparator indicators in the dashboard are derived from U15 data that is subject to use and disclosure protocols. These protocols require that the recipients of such information are subject to confidentiality restrictions (or NDA's) and that they use the data for administrative, operational, and accountability purposes only. Further dissemination is not permitted.

Additional institutional performance indicators can be found on the following publicly accessible webpage https://uwaterloo.ca/performance-indicators/.

Theme	Performance Descriptor	PI (SP Indicators are highlighted)	Waterloo			Peer Comparator			Peer	3 Yr Trend	Relative to Peer
			19/20	20/21	2021/22	19/20	20/21	2021/22			
Developing talent for a complex future	Attract top students	Undergrad enrolment growth (from base year)	2.1%	5.5%	6.1%	1.8%	6.1%	9.1%	U6	↑	↓
		Grad enrolment growth (from base year)	3.3%	3.4%	7.5%	4.4%	5.3%	12.3%	U6	↑	↓
		% of entry averages > 90%	59.5%	59.8%	69.5%	48.6%	50.0%	60.1%	U6	↑	↑
	Graduates in demand by employers	Graduate employment rate	95.6%	96.9%	94.9%	95.2%	95.6%	92.7%	ON	↓	↑
		Graduates jobs related to skills developed at university	92.1%	91.4%	92.7%	85.3%	86.8%	87.4%	ON	↑	↑
		% Earnings above $60K two years after graduation	51.2%	53.5%	55.9%	36.0%	39.1%	41.2%	U6	↑	↑
		Median income two years after graduation ($'000)	$ 59.1	$ 61.5	$ 63.0	$ 53.3	$ 56.6	$ 59.3	U6	↑	↑
		QS Employability ranking - Overall rank in world	25 (2020)	-	24 (2022)	2nd in U15	-	2nd in U15	U15	↑	↑
	Internationalization	% International students	23.3%	23.0%	22.5%	19.9%	20.1%	21.1%	U6	↓	↑
	Leader in experiential learning	% of Enrolment in co-op	68.9%	73.2%	74.4%	11.5%	11.7%	12.0%	U15	↑	↑
		Co-op employment rate	97.4%	92.5%	96.5%	-	-	-	U15	↓	
		Rating of graduate internships, practicum, and experiential learning (good, very good, or excellent)	68% (2013)	73% (2016)	63% (2019)	71% (2013)	71% (2016)	62% (2019)	U15	↓	↑
	Retain students to graduation	1st to 2nd year retention	94.3%	94.7%	93.2%	92.1%	93.4%	91.8%	U6	↓	↑
		Graduation rate (Undergrad)	80.8%	83.1%	83.3%	78.7%	79.7%	79.8%	U6	↑	↑
		Graduation rate (Master's)	88.3%	88.4%	88.2%	90.5%	91.1%	91.4%	U6	↓	↓
		Graduation rate (Doctoral)	63.4%	58.1%	60.5%	57.8%	56.5%	54.8%	U6	↓	↑
	Engaged learning	Overall score for reflective and integrative learning (graduating year students)	31.6 (2014)	32.2 (2017)	32.3 (2020)	35.5 (2014)	35.7 (2017)	35.6 (2020)	U15	↑	↓
		% of graduating year respondents who participated in two or more high impact practices	55% (2014)	61% (2017)	61% (2020)	53% (2014)	54% (2017)	55% (2020)	U15	↑	↑

Updated September 22nd, 2022

Theme	Performance Descriptor	PI (SP Indicators are highlighted)	Waterloo 19/20	Waterloo 20/21	Waterloo 2021/22	Peer Comparator 19/20	Peer Comparator 20/21	Peer Comparator 2021/22	Peer	3 Yr Trend	Relative to Peer
Advancing research for global impact	Attract significant research funding	Annual sponsored research revenue growth (from base year)	13.2%	-0.7%	3.9%	3.7%	6.2%	21.1%	U15	↓	↓
		Research revenue from industry/ non-gov't sources ($M)	$ 52.3	$ 48.2	$ 48.5	$ 58.8	$ 60.2	$ 65.9	ON	↓	↓
	Internationalization	% International collaborative publications (4-year span)	55.1%	57.6%	59.4%	54.9%	56.5%	57.7%	U15	↑	↑
	Produce high impact research	Publication count - Compound annual growth rate (CAGR) - rolling 4-year spans	-	1.8% (2012-2016)	3.7% (2016-2020)	-	1st	1st	UoT, UBC, McGill, UoA, McMaster	-	↑
		Field-weighted citation impact - rolling 4-year spans	-	1.57% (2012-2016)	1.58% (2016-2020)	-	1.61%	1.57%	U15	-	↑
		% Publications in top 10% of their field (4-year span)	11.8%	11.6%	11.7%	11.7%	11.6%	11.7%	U15	↓	–
		% Publications with industry partners (4-year span)	5.4%	5.8%	6.3%	5.3%	6.0%	6.3%	U15	↑	–
		QS	166	149	154	7th	7th	7th	U15	↑	↑
		ARWU	151-200	151-200	151-200	9th(T)	8th(T)	7th (T)	U15	-	↑
		THE	201-250	201-250		6th(T)	6th(T)		U15	-	
	Research capacity growth	Tenured/tenure track faculty growth (from base year)	1.8%	4.3%	4.6%	0.5%	1.2%	5.3%	U15	↑	↓
	Students and faculty create companies/jobs	Research-based start-ups (3-year total)	50	60	51	20	21	21	U15	↑	↑
		Pitchbook ranking	22	22	22	1st	1st	1st	UBC, UoT, McGill	-	↑
Strengthening sustainable and diverse communities	Strong connection with alumni & community	New funds raised ($M)	$ 35.9	$ 43.5	$ 30.2	$ 21.6	$ 15.0	$ 18.6	Comp	↓	↑
		Alumni donors as a % of contactable alumni	3.5%	3.8%	2.5%	2.4%	2.2%	1.0%	Comp	↓	↑
		% engaged alumni	13.8%	28.1%	32.3%	12.4%	6.0%	6.1%	CASE	↑	↑

Updated September 22nd, 2022

Theme	Performance Descriptor	PI (SP Indicators are highlighted)	Waterloo			Peer Comparator			Peer	3 Yr Trend	Relative to Peer
			19/20	20/21	2021/22	19/20	20/21	2021/22			
	Student wellness	Proportion of undergraduate students who report the university provides support for overall wellbeing (NSSE GY)	49% (2014)	43% (2017)	40% (2020)	55% (2014)	51% (2017)	42% (2020)	U15	↓	↓
		Proportion of students feel UW has a sincere interest in their well-being (NCHA)	-	71.7% (2016)	62.7% (2019)	-	-	79.1% (2019)	CAN		↓
		Proportion of students agree and strongly agree that: campus environment is one where mental health is supported (NCHA)	-	-	60.6% (2019)	-	-	74.5% (2019)	CAN		↓
		Proportion of students agree and strongly agree that: they are aware of how to access mental health supports / services on campus (NCHA)	-	-	59.1% (2019)	-	-	56.5% (2019)	CAN		↑
		Proportion of graduating year students feel part of a community at Waterloo (NSSE GY)	-	-	64% (2020)	-	-	64% (2020)	U15		-
		Proportion of international graduating year students feel a part of a community at Waterloo (NSSE GY)	-	-	68.1% (2020)	-	-	69.4% (2020)	U15 (excl. McGill, UoT)		↓
	Sustainability	Greenhouse gas emissions: Change from base year (2015)	6.0%	1.1%	-8.6%	tbd	tbd	tbd	U6	↓	
		STARs certification	-	Silver (2018)	Silver (2021)	-	Gold - 6 Silver - 3	Gold - 9 Silver - 3	U15*		↓
Other KPIs	Attract top students	% of Total operating expeditures on financial aid	9.9%	9.9%	9.7%	7.7%	7.4%	7.7%	U6	↓	↑
	Financial	Operating revenue growth (from base year)	7.3%	9.7%	21.9%	7.4%	7.8%	24.5%	U6	↑	↓

Notes: "3 Yr Trend" represents comparison between the most recent year and earliest year shown in this report. Figures in the "21/22" reporting year columns represent the most current data available as of September 22, 2022. The actual data year (or years) will vary by indicator. For example, "Undergraduate Enrolment Growth" in the "21/22" columns is based on 2021/22 enrolment data; "Graduate Employment Rate" in the "21/22" columns is based on a survey of the 2018 graduating class conducted during 2020/21. *For STARs certification, of the U15 members, 9 are certified Gold, 3 are certified Silver (including Waterloo), and 3 did not participate.

Updated September 22nd, 2022

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UNIVERSITY OF WATERLOO

To:	Senate
From:	Co-chairs of the Faculty Relations Committee
	Lori Curtis, President, Faculty Association of the University of Waterloo
	James W.E. Rush, Vice-President Academic & Provost
Date:	17 October 2022
Subject:	**Policy 76 – Faculty Appointments and Policy 77 – Tenure and Promotion of Faculty Members**

BACKGROUND

In accordance with Policy 1 – Initiation and Review of University Policies, the Faculty Relations Committee (FRC) approved the formation of a Faculty Policy Drafting Committee (the PDC) charged with the task of reviewing, and recommending changes to Policy 76, and assessing Policy 76 for consistency and/or conflict with related policies and procedures, including Policy 77, in September 2014.

Despite the dedication of numerous members of the University community over many years, there remain outstanding issues that must be resolved in order to arrive at a final draft for approval.

In order to achieve this objective the FRC is proposing the formation of a new PDC, again in accordance with Policy 1. The committee will be formed as required by the Policy, and will report regularly to the FRC. The following Policy Drafting Plan (the Plan) will be put into place to assure that reasonable timelines for completion can be met and that communication on progress with the community will be maintained.

The following is an outline of the Plan, as approved by the FRC and as anticipated by Policy 1. The members of the FRC (both members representing senior administration (the Administration) and members representing the Faculty Association of the University of Waterloo (FAUW)) share an interest and desire to bring closure to this process in a way that is best for the University community, including closure of the drafting process proposed in the Plan at the earliest stage possible.

1. **STEP 1**
   The Administration and FAUW agree to exchange policy drafts at FRC to determine what work remains to be completed on the revisions of Policy 76, including revisions to Policy 77, other related policy changes and the drafting of any necessary agreements in the form of a memorandum of understanding to support transitional matters. The exchange of policy drafts will occur by 20 October 2022.

2. **STEP 2**
   A Faculty Policy Drafting Committee (PDC), as contemplated by, and in accordance with, Policy 1 will be convened and the PDC will be co-chaired by representatives from the Administration and FAUW. The PDC will meet approximately once per week over approximately four weeks, recognizing that there may be feasibility issues for members of the PDC in scheduling and in their ability to do effective work between the meetings that may require flexibility, within reason, given the timing of other elements of this process. The PDC will engage in good-faith negotiations and make every reasonable effort to reach an agreement redraft Policies 76 and 77 following the PDC Terms of Reference, as well as other related policy changes and any necessary agreements in the form of a memorandum of understanding regarding transitional matters. The PDC will begin their work no later than 7 November 2022 and may continue their work after their four initial meetings with the mutual consent of the Administration and FAUW. The PDC will report regularly on progress to FRC, and when their work is completed they will present an updated draft of the Policy

to FRC, highlighting any areas where agreement was not reached. If the outstanding matters can be resolved by FRC in one meeting, FRC may recommend a policy draft proceed for governance approval. If this is not possible, the process will move to Step 3.

3. **STEP 3**
An external mediator (chosen in advance using the process specified in section 10.9 of the Memorandum of Agreement – UW/FAUW (the MOA)) will assist the parties in reaching an agreement at the PDC over up to two additional meetings (decided in advance at FRC, depending on the number and nature of unresolved issues identified by FRC after the PDC work described in Step 2). On the advice of the mediator, the period of mediation may be extended with the agreement of FRC. The Administration and FAUW will report variously on the results of Step 3, and if applicable, will report that the Plan is moving to Step 4. Policy revisions agreed to by members in the PDC and/or with the assistance of the mediator, will be sent to FRC which will forward the completed draft polices for governance approval as specified in Policy 1.

4. **STEP 4**
With regard to any matters where no agreement has been reached with the assistance of the mediator after the allocated number of meetings, the matter will be sent to interest arbitration through which the arbitrator will work with the parties, within and across the elements of agreement and non-agreement, to ultimately come to a final binding decision that could incorporate compromise between the two overall positions. The mediator and the arbitrator shall be the same person in order to expedite matters.

The cost of the mediator/arbitrator shall be shared equally by the University and FAUW. FRC additionally recognizes that separate from the PDC's responsibilities, changes to the MOA resulting from the new Policy 76 will be addressed by FRC. FRC will have the authority to adjust timelines as necessary.

GOVERNANCE APPROVAL

Should an agreement be reached at FRC after Step 2 or Step 3, above, FRC will jointly recommend the agreed-to changes to Policies 76 and 77 and other related documents to the University President, who will then bring forward the recommendation to Senate and the Board of Governors for decision. Should an arbitration be necessary, FRC will recommend the arbitrated decision on Policies 76 and 77 and other related documents resulting from Step 4, above, to the President who will recommend approval of the arbitrated decision to Senate and the Board of Governors. The arbitration decision shall be made public 30 days prior to its presentation at Senate for the University community's information and awareness.

PROPOSED PDC MEMBERSHIP

FOR APPROVAL
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Policy 76/Policy 77 Drafting Committee

Motion 1: To approve the following membership on the Policy 76/Policy 77 Drafting Committee: Mary Hardy (statistics and actuarial science, FAUW appointee); Su-Yin Tan (geography and environmental management, FAUW appointee); Paul Wehr (psychology, FAUW appointee); David DeVidi (associate vice-president, academic, President's appointee); Anna Esselment (political science, President's appointee); and Ian VanderBurgh (mathematics, President's appointee).

Rationale: This committee was introduced by the Faculty Relations Committee (FRC) under Policy 1 – Initiation and Review of University Policies to begin with a new phase of work on the revision of Policy 76 and Policy 77, as detailed in the Policy Drafting Plan submitted to Senate. Normally, Policy 1 requires that class "F" policy development committees be composed of a minimum of three (maximum of six) members, one (or two) appointed by the President of the University, one (or two) members appointed by the President of FAUW and one (or two) members appointed by Senate. FRC seeks Senate's approval of the membership above such that it take the place of the Policy 1 requirement that Senate appoint additional members to the committee. The PDC will be co-chaired by one member appointed by FAUW and one member appointed by the President.

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University of Waterloo
SENATE GRADUATE & RESEARCH COUNCIL
Report to Senate
17 October 2022

</div>

Senate Graduate & Research Council met on 12 September 2022 and agreed, in accordance with Senate Bylaw 2 (section 4.03), to forward the following item to Senate for approval as part of the regular agenda.

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

FOR APPROVAL
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NEW RESEARCH CENTRE

Centre for Sustainability and Business
1. **Motion:** To approve the establishment of the Centre for Sustainability and Business (CSB), as presented.

    Rationale: Sustainable business models have become ubiquitous and a tremendous amount of research across disciplines is underway to support this new approach. Accordingly, the CSB, a faculty-funded research centre of the Faculties of Environment and Arts, is being proposed in order to support interdisciplinary research that creates a societal impact and increases the visibility of the University of Waterloo as a powerhouse for sustainability and business, accounting, and economics. The centre will become a hub to support sustainability and business research across campus by raising funds, hosting interdisciplinary academic and joint academic-practitioner conferences, and fostering partnerships with corporations to enable practical collaborations, as well as the development of new experiential pedagogical materials—including executive training—in sustainability and business. Notably, with its focus on sustainability, interdisciplinary research, and high impact, the CSB is perfectly aligned with the University's strategic plan.

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

Charmaine Dean
Vice-President, Research & International

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University of Waterloo
SENATE UNDERGRADUATE COUNCIL
Report to Senate
17 October 2022

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Senate Undergraduate Council met on 13 September 2022 and agreed, in accordance with Senate Bylaw 2 (section 5.03) to forward the following items to Senate for approval in the regular agenda.

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

FOR APPROVAL

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ACADEMIC PLAN CHANGES

Faculty of Science
Environmental Sciences

1. **Motion:** That Senate approve the proposed correction of the official name of the Environmental Sciences plans, both Honours and Honours Co-operative, to be pluralized (Environmental Sciences versus Environmental Science), effective 1 September 2023.

Background and Rationale: While the June 2021 convocation program drafts were being reviewed, an oddity regarding Honours Environmental Science(s) was uncovered: some plans were singular (Geoscience Specialization and Water Science Specialization), others were plural (Ecology Specialization). In the UG Calendar, all plans are listed as "Science" (singular). However, in the plan description in Quest, the Ecology Specialization is listed as "Sciences" (plural), while the other Specializations are listed as "Science" (singular). Thus, the Ecology Specialization appears on diplomas, transcripts, and convocation programs in the plural form, while the other Specializations appear in the singular form.

Effective September 1, 2023, all existing Honours and Honours Co-operative Environmental Sciences plans will be renamed (pluralized) but will retain the same plan code. Students graduating after September 1, 2023, regardless of their requirement term, will graduate with the new pluralized plan name.

/twk   David DeVidi
                                                                      Associate Vice-President, Academic

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University of Waterloo
SENATE EXECUTIVE COMMITTEE
Report to Senate
17 October 2022

This report is submitted following the committee's meeting of 3 October 2022, for inclusion in the regular agenda.

FOR APPROVAL
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Motion: To approve the appointment of Dr. Scott Kline as the Council of Ontario Universities (COU) Academic Colleague for the University of Waterloo, term to 30 April 2025.

Background: With the completion of the previous COU Academic Colleague's term, Senate was advised at the September 2022 meeting that a call for nominations would be forthcoming to eligible Senators. The appointment term for the role is three years renewable, and the call for nominations included relevant details on the responsibilities/expectations for the role. Academic colleagues are selected from among the "academic staff members of the Senate", and at the University of Waterloo these are "members of faculty" as defined by the *University of Waterloo Act*:

> "…those members of personnel employed by the University or employed by a federated or affiliated college, whose duties are basically those of performing and administering the teaching and research functions of the University, or, as the case may be, of a federated or affiliated college, and who are included in the lecturer and professorial ranks…"

In response to the call for nominations, one nomination was received, and the committee unanimously recommends Dr. Scott Kline for this appointment. He obtained his PhD from McGill University, and his research focuses on the relationship between religious ethics and public policy, particularly in Canada and the United States. He has served in a variety of roles at St. Jerome's University since 2007 including as chair of his department, as associate dean, as vice-president academic and dean, and as interim president and vice-chancellor.

Vivek Goel
Chair, Senate Executive Committee

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University of Waterloo
SENATE LONG RANGE PLANNING COMMITTEE
Report to Senate
17 October 2022

Senate Long Range Planning Committee (the "Committee") met on 29 September 2022 and agreed, in accordance with Senate Bylaw 2 (section 3.04b), to forward the following item to Senate for information.

Further details are available at: *https://uwaterloo.ca/secretariat/committees-and-councils/long-range-planning-committee*

FOR INFORMATION

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1. WATERLOO AT 100

The Committee participated in its second visioning exercise related to the Waterloo at 100 Discussion paper. Led by President and Vice-Chancellor, Dr. Vivek Goel, the Committee focused its discussion on suggestions and innovations for the Institution's development and its programs across research, education, and service into its long-term future, as signaled for in the document.

The Committee reflected on the following:
- Inclusion of sustainable finance, policy and technology throughout the sustainable futures;
- Integration of a specialized form of business education across disciplines given Waterloo's key differentiator of entrepreneurship;
- Use of a creative digital framework and imagery to present the Waterloo at 100 strategy and to convey the five interconnected futures;
- Use of the five futures as pathways for students to direct their education and to inform administrative structures;
- Opportunity for social futures to allow for engagement in the community, particularly in areas that are traditionally underfunded;
- Increasing opportunities to teach policy to students, such as embedding policy courses and education across disciplines;
- Connections between the futures and the student experience, including lifelong learning and professional training; and
- Consideration of the physical forms of the campuses and how that might be used to reflect the values of the organization, including Waterloo's commitment to indigenization, and to enhance opportunities for students.

2. DIGITAL LEARNING STRATEGY

The Committee received an update and presentation on the progress towards Waterloo's Digital Learning Strategy from Aldo Caputo, Director, Centre for Extended Learning and Johanna Wandel, Associate Professor and Associate Dean, Undergraduate Studies. The Committee provided feedback on the themes, values and principles as well as the recommendations that are emerging as a result of the work of the Digital Learning Strategy Working Group.

In particular, the Committee discussed the following:
- Understanding the needs of instructors in a post-pandemic teaching environment;
- Flexibility and availability of University resources in the creation of online courses;
- Understanding how learning takes place inside and outside of the classroom;

- Establishment of digital learning standards and impact on in-person learning; and
- Relationship between the Digital Learning Strategy and institutional digital strategy.

/swt   James Rush
                                          Vice-President, Academic and Provost

Digital Learning Strategy

Senate Long-Range Planning

September 2022

Aldo Caputo, CEL
Johanna Wandel, Associate Dean, Undergrad ENV

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DLS

- an institutional project, aligned with the 2020-2025 strategic plan
- delivering a **report** with actionable recommendations for consideration by the institution

"a defined plan of technological systems, workforce development, and cultural changes that enable the institution's digital learning initiatives. As a component of the institution's digital transformation, the DLS **transforms learning** by **ensuring flexible, equitable pathways to student success**. It furthers the institutional mission by **aligning resources** and providing a **shared vision for digital learning** at the institution"

https://er.educause.edu/articles/2022/8/educause-quickpoll-results-transforming-teaching-and-learning-with-a-digital-learning-strategy

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Digital Learning Strategy Working Group

Sponsor: Jim Rush, VPA & provost

Co-chairs

- Aldo Caputo, CEL
- Johanna Wandel, AD Undergrad, ENV

Faculty Reps

- **ENG** - Carolyn MacGregor
- **ARTS** - James Skidmore
- **Math** - Diana Skrzydlo
- **ENV** - Peter Johnson
- **HEALTH** – Tamara Maciel
- **SCI** - Robert Hill

Student Reps

- **WUSA** - Stephanie Ye-Mowe
- **GSA** – Kevin Bonnell (resigned, TBA)

ASU reps

- **CTE -** Mary Power
- **ITMS -** Pam Fluttert
- **Library -** Victoria Chu

Project Management & Communications

- Wendy Hague, **PMO**, IST
- Alisa Sivak, Communications Associate, **AVPA**

Kickoff
(April 2022)

Planning & Prep
(May 2022)

Consultations with Faculty, Students, and ASU groups
(Jun-Aug)

Consultations with leaders/leadership groups
(Aug-
(Oct 2022)

Consolidation of input (Sept-Oct)

draft ready for review/feedback
(Oct 2022)

OPERATIONAL

STRATEGIC

Reviews (including different lenses) and iteration

DLS report structure

Guiding Principles & Values

↓

Strategic Directions

↓

Recommendations for action

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Emerging Themes, Values, & Principles

- taking a learner-centred approach

- desire for flexibility

- extending reach (international, underserviced, LLL, partnerships)

- accessibility

- interaction

- quality

- intentional outcomes through design and planning

- importance of community

- need for agility & resilience

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Emerging Themes, Values, & Principles

digital .... face-to-face

consistency .... instructor autonomy

central .... local decision-making

BALANCE

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Examples of Emerging Recommendations

- learner-centredness should underpin approach

- understand student needs post-pandemic

- conduct curricular reviews to thoughtfully integrate digital

- articulate the strengths of on-campus vs. digital

- define class mode and set standards for digital learning (in progress)

- take a more team-based and collaborative approach to digital

- revise IP policy to encourage sharing and reuse

- increasing agility in ability to offer different modalities

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Guidance from SLRP

- do themes, values and principles resonate with you? Have we missed anything?

- are the emerging recommendations on track?

- suggestions for moving forward to ensure success?

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University of Waterloo
SENATE GRADUATE & RESEARCH COUNCIL
Report to Senate
17 October 2022

Senate Graduate & Research Council met on 12 September 2022 and agreed, in accordance with Senate Bylaw 2 (section 4.03), to forward the following items to Senate for information as part of the consent agenda.

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

FOR INFORMATION

UNIVERSITY RESEARCH ETHICS
On behalf of Senate, council approved the following:
- Human Research Ethics Board – member renewal (1)
- Clinical Research Ethics Board – new member (1); member renewal (3)

GRADUATE AWARDS
On behalf of Senate, council approved the Women in Mathematics Directed Reading Program Mentorship Award (operating) and the John Parish Memorial Graduate Scholarship (trust).

CURRICLUAR SUBMISSONS
On behalf of Senate, council approved one new course for the Faculty of Environment (Environment, Enterprise and Development).

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

Charmaine Dean
Vice-President, Research & International

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University of Waterloo
SENATE UNDERGRADUATE COUNCIL
Report to Senate
17 October 2022

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Senate Undergraduate Council met on 13 September 2022 and agreed, in accordance with Senate Bylaw 2 (section 5.03) to forward the following items to Senate for information or approval, as noted, in the consent agenda.

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

FOR APPROVAL

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ACADEMIC REGULATIONS

Faculty of Health
Undergraduate Communication Requirement

1. **Motion:** That Senate approve the following proposed revision to the Undergraduate Communication Requirement for the Faculty of Health, effective 1 September 2023.

Background and Rationale: The additional text will ensure consistency in the Faculty of Health transfer credit process, along with adhering to the University's communication requirement.

Current calendar text: https://ugradcalendar.uwaterloo.ca/page/HEA-Undergraduate-Communication-Requirement

Proposed Calendar Text: (bold = new)

Students, including transfer students entering the Faculty Health, should fulfil the Undergraduate Communication Requirement (see Note 1) by the end of their 3A term. The Faculty offers a communication course that is required for all degree programs. Successful completion of HEALTH 107 fulfils the Undergraduate Communication Requirement.
Notes
1. Students enrolled in the Faculty of Health before September 2017 should consult the English Language Proficiency Requirement described in the Calendar of their entry year.
2. Successful completion of the Undergraduate Communication Requirement will be recorded on a student's transcript as completion of the Undergraduate Communication Requirement.
3. Students transferring to another faculty should note that additional courses may be required to satisfy the other faculty's Undergraduate Communication Requirement.
4. Students transferring into the Faculty of Health who have completed their Undergraduate Communication Requirement in another faculty **at the University of Waterloo** will be eligible to have it count for their Faculty of Health Undergraduate Communication Requirement.
5. **The Faculty of Health does not permit external transfer credits for HEALTH 107 from students transferring from another institution. HEALTH 107 must be taken at the University of Waterloo to satisfy the Faculty of Health, Undergraduate Communication Requirement.**

Registrar's Office
Invalid Plan Combinations

2. **Motion:** That Senate approve the following revisions to the Invalid Plan Combinations, effective 1 September 2023.

Background and Rational: For the 2022-2023 Undergraduate Studies Academic Calendar, existing invalid plan combinations listed throughout the Calendar were centralized on a single page:

https://ugradcalendar.uwaterloo.ca/page/Acad-Regs-Invalid-Credential-Combinations. The goal of centralizing the content was to assist students and academic advisors by providing one location to review what type of credential combination is acceptable or not, especially as students combine academic plans across faculty lines.

Once centralized, it became apparent that not all combinations were previously listed as reciprocal in the Calendar. For example, the Faculty of Arts listed that their Management Studies Minor could not be combined with Recreation and Sport business (major offered by Faculty of Health) or Environment and Business (major offered by Faculty of Environment); however, those majors did not previously list they could not be combined with the Minor.

To make the list truly reciprocal, the Office of the Registrar is seeking approval to ensure all parties are aware of the invalid combinations. This is essentially a "clean up" exercise.

1. All specific invalid combinations falling outside the main guidelines are listed, except those recently approved during the 2021-22 academic year (no clean up needed for those).
2. Combinations that were not previously stated as reciprocal are highlighted in green.
3. A new general guideline is being created (highlighted in yellow) regarding academic plan name changes so that academic plans falling into those scenarios can be removed from the large table.
4. A new operational guideline (highlighted in blue) regarding how long to list inactive academic plans is being created so that plans no longer appearing in the 2019 Calendar and beyond can be removed, but highlighting to students that those invalid combinations still apply.
5. Clarity is being added where vagueness existed.

Academic Calendar text:
The University of Waterloo offers many types of credentials, with a variety of intended audiences. For example:
- Minors are normally open to all undergraduate students.
- Options are normally open to all students registered in a major in the same faculty as the option.
- Specializations are normally open to all students majoring in the affiliated field.

Certain credential combinations are not permitted.
- No student may enrol in or graduate from two credentials with significant overlapping content, including, but not limited to:
  - a minor, option, or diploma/certificate in the same subject as their major (e.g., Honours Anthropology and Anthropology Minor; Honours Software Engineering and Software Engineering Option);
  - a minor and a diploma in the same subject (e.g., Applied Language Studies Minor and Diploma in Applied Language Studies);
  - a certificate and a diploma in the same language (e.g., Certificate in French Language I and Diploma in French Language I);
  - more than one language certificate or diploma in the same language (e.g., Diploma in Japanese Language I and Diploma in Japanese Language II);
  - **the same credential that has been renamed (e.g., Communication Studies, formerly Speech Communication).**

To facilitate the application to graduate process, students should declare all minors, options, and specializations as early as possible, but no later than the start of their last academic term.

Additional Constraints
Faculty of Arts
- No student may enrol in or graduate from:
  - Two majors from the same group in the following list:
    - Department of Classical Studies: Classical Studies, Classics
    - Department of Economics: Economics, Mathematical Economics

- ▪ Department of English Language and Literature: Literature; Literature and Rhetoric; Rhetoric, Media, and Professional Communication
  - o Two intensive specializations offered by the same major.
  - o Multiple "topic" specializations offered by the same major in the following departments:
    - ▪ Economics (maximum of one topic specialization)
    - ▪ History (maximum of one topic specialization)
    - ▪ Political Science (maximum of one topic specialization)
  - o Two financial management degrees in the following list:
    - ▪ Accounting and Financial Management, Bachelor of
    - ▪ Computing and Financial Management, Bachelor of
    - ▪ Sustainability and Financial Management, Bachelor of
- When pursuing a Bachelor of Arts, students may combine two honours major academic plans only (i.e., not an honours major plan with a general major academic plan).

Faculty of Mathematics
- No student may enrol in or graduate from:
  - o A stand-alone Bachelor of Computer Science (BCS) academic plan with any Bachelor of Mathematics (BMath) academic plan (including Joint Honours academic plans).
  - o A stand-alone BMath Joint Honours academic plan with any non-Mathematics Joint Honours acdemic plan.
  - o Data Science (BMath or BCS) with any other Faculty of Mathematics Honours or Joint Honours academic plan, except that the BCS (Data Science) can make up the BCS component of the Business Administration and Computer Science double degree program.
  - o Two academic plans from the same group in the following list:
    - ▪ All academic plans offered in Actuarial Science
    - ▪ All academic plans offered in Applied Mathematics
    - ▪ All academic plans offered in Combinatorics and Optimization (including all Mathematical Optimization academic plans)
    - ▪ All academic plans offered in Computational Mathematics
    - ▪ All academic plans offered in Computer Science
    - ▪ All academic plans offered in Pure Mathematics
    - ▪ All academic plans offered in Statistics
    - ▪ All Mathematics/Business academic plans other than Mathematical Economics
    - ▪ Exception: Mathematical Finance can be combined with another Actuarial Science and/or Pure Mathematics academic plan.
  - o A stand-alone BCS Honours co-operative academic plan or BMath Honours co-operative academic plan with any stand-alone regular Honours academic plan (including Joint Honours academic plans).

Specific Invalid Credential Combinations

The University will amend the list of invalid credential combinations when new academic programs or plans (i.e., majors, minors, options, diplomas, certificates, and specializations) are created. The University has done its best to include all specific invalid credential combinations in the table below; however, students should confirm any plan combination with their academic advisor.

Legend

* Indicates an inactivated academic program or plan. **When credentials are inactivated, they will remain in this table for three years; once removed, the combination remains invalid and students should refer to historical versions of the academic calendar.**

Table - List of Invalid Credential Combinations
…

List of reciprocal invalid plan combinations (not as it appears in the academic calendar):

How to read the following table:
- Invalid combinations only appear once.
- Ordered alphabetically by majors, then minors, then options.
- Invalid combinations meeting high-level rules listed above are not included (e.g., Computer Engineering and Computer Engineering Option; or Anthropology major and Anthropology Minor).

Plan/program #1	Faculty #1	Plan/program #2	Faculty #2	Change being applied
Accounting and Financial Management, Bachelor of	Arts	Arts and Business	Arts	
Accounting and Financial Management, Bachelor of	Arts	Management Studies Minor ~~or Diploma*~~	Arts	Removing old inactive plan
Applied Mathematics with Scientific Computing	Mathematics	Computational Mathematics (major and minor)	Mathematics	
Arts and Business	Arts	Honours Arts Co-op	Arts	Not previously listed as reciprocal
Arts and Business	Arts	French Teaching Specialization (French major)	Arts	
Arts and Business	Arts	Global Business and Digital Arts, Bachelor of	Arts	
Arts and Business	Arts	Management Studies Minor	Arts	
Arts and Business	Arts	Mathematical Economics major (BA and BMath)	Arts and Math	(BMath) not previously listed as reciprocal
~~Arts and Business~~	~~Arts~~	~~Sociology/Legal Studies - Criminology Specialization*~~	~~Arts~~	Removing old inactive plan – June SUC
Arts and Business	**Arts**	**Sustainability and Financial Management, Bachelor of**	**Arts and Env**	Added June SUC
Biomedical Sciences major	Science	Biology Minor	Science	Not previously listed as reciprocal

Biochemistry major	Science	Biology Minor	Science	Not previously listed as reciprocal
Bioinformatics Specialization (Computer Science major, BCS or BMath)	Mathematics	~~Any plan offered by the Biology Department~~ Biochemistry major; Biochemistry Minor; Bioinformatics Option; Biology major; Biology Minor; Biomedical Sciences major; Biophysics Minor; Environmental Sciences major (all specializations); Science and Business – Biochemistry Specialization; Science and Business – Biology Specialization; Science and Business – Biotechnology Specialization	Science	Not previously listed as reciprocal Adding clarity
Biology Specialization (Applied Mathematics major)	Mathematics	~~Any plan offered by the Biology Department~~ Biochemistry major; Biochemistry Minor; Biology major; Biology Minor; Biomedical Sciences major; Biophysics Minor Environmental Sciences major (all specializations); Science and Business – Biochemistry Specialization;	Science	Not previously listed as reciprocal Adding clarity

		Science and Business – Biology Specialization; Science and Business – Biotechnology Specialization		
Biophysics Specialization (Life Physics major)	Science	Biology Minor	Science	Not previously listed as reciprocal
Biotechnology/Chartered Professional Accountancy major	Science	Biology Minor	Science	Not previously listed as reciprocal
Business Administration and BCS/BMath double degree plans	Mathematics	Any plan similar to one appearing on the student's Laurier academic record transcript	N/A	
Business Administration and Mathematics double degree plans	Mathematics	Management Studies Minor	Arts	Not previously listed as reciprocal
Business Specialization (Computer Science major, BCS or Math, Software Engineering)	Mathematics	Economics Minor	Arts	Not previously listed as reciprocal
Business Specialization (Computer Science major, BCS or Math, Software Engineering)	Mathematics	Human Resources Management Minor or Diploma	Arts	Not previously listed as reciprocal
Business Specialization (Computer Science major, BCS or Math, Software Engineering)	Mathematics	Management Studies Minor	Arts	Not previously listed as reciprocal
Business Specialization	Mathematics	Mathematics/Financial Analysis and	Mathematics	

(Computer Science major, BCS or Math, Software Engineering)		Risk Management major		
Business Specialization (Mathematical Studies major)	Mathematics	Management Studies Minor ~~or Option*~~	Arts	Not previously listed as reciprocal; Removing old inactive plan
Classics major	Arts	Classical Studies Minor	Arts	
Communication Arts and Design Practice major	Arts	~~Communications Studies plans~~ **Communications Studies Minor and major**	Arts	Adding clarity
Communication Arts and Design Practice major	Arts	Digital Arts Communication Minor	Arts	
Communication Arts and Design Practice major	Arts	~~Speech Communication * plans~~ **Speech Communication Minor* and major***	Arts	Adding clarity
Communication Arts and Design Practice major	Arts	~~Theatre and Performance plans~~ **Theatre and Performance Minor and major**	Arts	Adding clarity
Communication Arts and Design Practice major	Arts	Performance Creation Minor	Arts	
~~Communication Studies plans~~	~~Arts~~	~~Any Speech Communication* plan~~	~~Arts~~	Replace by new guideline about renamed plans
Computational Fine Art Specialization ~~or Option*~~ (Computer Science major, BCS or BMath, Software Engineering)	Mathematics	~~Any plan offered by the Fine Arts Department~~ **Fine Arts major; Fine Arts Studio Minor; Visual Culture in a Global Context Minor;**	Arts	Not previously listed as reciprocal; Adding clarity

		Visual Culture major		
Computer Engineering major	Engineering	Computing Option	Engineering	Not previously listed as reciprocal
Computing and Financial Management, Bachelor of	Arts and Math	Computer Science, Bachelor of	Mathematics	Added June SUC
Data Science (BCS)	Mathematics	Artificial Intelligence Specialization ~~or Option*~~	Mathematics	Removing old inactive plan
Decision Support and Geographic Information Systems Specialization (Planning major)	Environment	Excellence in Geographic Information Systems, Diploma in	Environment	
Digital Media Studies Specialization (English majors)	Arts	Digital Arts Communication Minor	Arts	
~~Digital Media Studies Specialization (English major)~~	~~Arts~~	~~Digital Arts Communication Specialization * (Arts and Business)~~	~~Arts~~	Removing old inactive plan
~~Diversity and Equity Specialization (Social Development Studies major)~~	~~Arts~~	~~Cultural Diversity Specialization* (Social Development Studies major)~~	~~Arts~~	Replace by new guideline about renamed plans
~~Earth Sciences major~~	~~Science~~	~~Earth Sciences Minor~~	~~Science~~	Existing guidelines cover this scenario
Ecology Specialization (Environmental Science major)	Science	Biology Minor	Science	Not previously listed as reciprocal
~~Economics plans~~ Economics major; Mathematical Economics major (BA and BMath)	Arts	Biotechnology/Economics major*	Science	Not previously listed as reciprocal Adding clarity
~~Economics plans~~	Arts	Economic Theory Minor	Arts	Adding clarity

Economics major; Economics Minor				
~~Economics plans~~	~~Arts~~	~~Environmental Economics Minor*~~	~~Environment~~	Removing old inactive plan
Economics Specialization (Applied Mathematics major)	Mathematics	Economics Minor	Arts	
Economics Specialization (Applied Mathematics major)	Mathematics	~~Economics plans~~ **Economics major; Mathematical Economics major (BA and BMath)**	Arts	Adding clarity
Economics Specialization (Applied Mathematics major)	Mathematics	Economic Theory Minor	Arts	
English majors	Arts	Creative Writing, Diploma in	Arts	
English majors	Arts	Technical Writing Minor	Arts	Not previously listed as reciprocal
Entrepreneurial Mindset Specialization (Accounting and Financial Management, Bachelor of)	Arts	Entrepreneurship Minor	Engineering	
Environment and Business major	Environment	Business Option	Environment	Not previously listed as reciprocal
Environment and Business major	Environment	Management Studies Minor	Arts	Not previously listed as reciprocal
French Teaching Specialization (French major)	Arts	Any other stand-alone major		
Geological Engineering	Engineering	Joint Honours X with Earth Sciences	Science	Not previously listed as reciprocal
Geoscience Specialization	Science	Earth Sciences Minor	Science	Not previously listed as reciprocal

(Environmental Science major)				
Global Business and Digital Arts, Bachelor of	Arts	Digital Arts Communication Minor	Arts	
Global Business and Digital Arts, Bachelor of	Arts	Management Studies Minor ~~or Diploma*~~	Arts	Removing old inactive plan
Global Business and Digital Arts, Bachelor of	Arts	Any stand-alone major	Arts	
Information Technology Management major	Mathematics	Computing Minor or Option* (Mathematics)	Mathematics	
International Relations Specialization (History major)	Arts	International Relations Specialization (Political Science major)	Arts	
Joint Computer Science (BCS or BMath)	Mathematics	Joint Statistics	Mathematics	
Joint Honours X with Physics	Science	Physics Specialization (Applied Mathematics)	Mathematics	
Joint programs in Mathematics or Computer Science	Mathematics	Bioinformatics Option	Science	Not previously listed as reciprocal
Liberal Studies major	Arts	Any other stand-alone major	Arts	
Life Physics major	Science	Biophysics Minor	Science	Not previously listed as reciprocal
Life Physics major	Science	Physics Minor	Science	Not previously listed as reciprocal
Materials and Nanosciences major	Science	Physics Minor	Science	Not previously listed as reciprocal
Mathematical Economics major (BA or BMath)	Arts and Mathematics	Economics Minor	Arts	

Mathematical Economics major (BA or BMath)	Arts and Mathematics	~~Economics plans~~ **Economics major**	Arts	Adding clarity
Mathematical Economics major (BA or BMath)	Arts and Mathematics	Economic Theory Minor	Arts	
Mathematical Economics major (BA or BMath)	Arts and Mathematics	Any other stand-alone major		Adding clarity
Mathematical Physics major (Bachelor of Mathematics)	Mathematics	~~Any plan offered by the Physics and Astronomy Department, including Joint Honours X with Physics~~ Astrophyiscs Minor; Biophysics Minor; Life Physics major; Joint Honours X with Physics; Mathematical Physics major (Bachelor of Science); Physics major; Physics Minor; Physics and Astronomy major	Science	Not previously listed as reciprocal Adding clarity
Mathematical Physics major (Bachelor of Science)	Science	Life Physics major; Joint Honours X with Physics; Mathematical Physics major (Bachelor of Mathematics); Physics major; Physics Minor Physics and Astronomy major	Science	Not previously listed as reciprocal Adding clarity
Mathematical Studies major (with or without a Business Specialization)	Mathematics	Any other stand-alone or Mathematics Joint plan	Mathematics	
Mathematics/Business	Mathematics	Management Studies Minor	Arts	Not previously listed as reciprocal

Administration major				
Mathematics/Financial Analysis and Risk Management major	Mathematics	Business Specialization ~~or Option*~~ (Computer Science major, BCS or BMath, Software Engineering)	Mathematics	Removing old inactive plan
Music and Peace Specialization (Music major)	Arts	Music in a Global Context Specialization (Music major)	Arts	
Music major	Arts	Church Music and Worship Minor, or Diploma in	Arts	
Physics and Astronomy major	Science	Astrophysics Minor	Science	Not previously listed as reciprocal
Physics and Astronomy major	Science	Physics Minor	Science	Not previously listed as reciprocal
Physics Specialization (Applied Mathematics major)	Mathematics	~~Any plan offered by the Physics and Astronomy Department,~~ Astrophyiscs Minor; Biophysics Minor; Life Physics major; Joint Honours X with Physics; Mathematical Physics major (SCi); Physics major; Physics Minor; Physics and Astronomy major	Science	Not previously listed as reciprocal Adding clarity
Political Science major	Arts	Canadian Politics and Public Policy Minor	Arts	
Political Science major	Arts	Politics and Business Minor	Arts	
Public Policy Specialization (Economics major)	Arts	Public Policy and Administration Minor*	Arts	
Recreation and Sport	Health	Management Studies Minor	Arts	Not previously listed as reciprocal

Business major				
Science and Business major (all specializations)	Science	Biology Minor	Science	Not previously listed as reciprocal
Science and Business major (all specializations)	Science	Management Studies Minor	Arts	Not previously listed as reciprocal
Software Engineering, Bachelor of	Engineering and Mathematics	Computing Option (Engineering)	Engineering	Not previously listed as reciprocal
~~Spanish plans~~ Spanish major; Spanish Minor; Spanish Language, Diploma in	Arts	Latin American Studies, Diploma in	Arts	Adding clarity
~~Spanish plans~~	~~Arts~~	~~Spanish/English Translation Minor*~~	~~Arts~~	Removing old inactive plan
Sustainability and Financial Management	Arts and Env	Management Studies Minor	Arts	Added June 2022 SUC
Sustainability and Financial Management	Arts and Env	Any stand-alone major		Added June 2022 SUC
Water Science Specialization (Environmental Science major)	Science	Biology Minor	Science	Not previously listed as reciprocal
Water Science Specialization (Environmental Science major)	Science	Earth Sciences Minor	Science	Not previously listed as reciprocal
Astrophysics Minor	Science	Physics Minor	Science	Added May 2022 SUC
Biochemistry Minor	Science	Biology Minor	Science	Not previously listed as reciprocal
Biochemistry Minor	Science	Chemistry Minor	Science	

Biology Minor	Science	Biophysics Minor	Science	Not previously listed as reciprocal
Biology Minor	Science	Medical Physiology Minor	Science/Health	Not previously listed as reciprocal (Health version)
Biology Minor	Science	Biotechnology/Economics major*	Science	
Biophysics Minor	Science	Physics Minor	Science	Not previously listed as reciprocal
Canadian Politics and Public Policy Minor	Arts	Public Policy and Public Administration Minor*	Arts	
Classical Studies Minor	Arts	Greek Minor*	Arts	
Classical Studies Minor	Arts	Latin Minor*	Arts	
Computer Science Minor	Mathematics	Bioinformatics Option	Science	Not previously listed as reciprocal
Computer Science Minor	Mathematics	Computing Minor or Computing Option* (Mathematics)	Mathematics	
~~Digital Arts Communication Minor~~	~~Arts~~	~~Digital Arts Communication Specialization (Arts and Business)*~~	~~Arts~~	Removing old inactive plan
Economics Minor	Arts	Biotechnology/Economics major*	Science	
Economic Theory Minor	Arts	Biotechnology/Economics major*	Science	
Geography and Environmental Management Minor	Environment	~~Any plan offered by the Geography and Environmental Management Department~~ Climate and Environmental Change major; Geography and Aviation major; Geomatics major	Environment	Not previously listed as reciprocal Adding clarity
Computing Minor	Mathematics	Bioinformatics Option	Science	Not previously listed as reciprocal
Human Resources Management Minor	Arts	Business Option	Environment	Not previously listed as reciprocal
Human Resources	Arts	Students who have completed a	N/A	

Management (HRM) Minor, or Diploma in		Diploma in HRM or the course requirements for the Certified Human Resources Professional (CHRP) designation, or who have graduated from a college or university HR or business program		
~~International Trade Minor~~	~~Arts~~	~~International Trade Specialization (Arts and Business)*~~	~~Arts~~	Removing old inactive plan
~~Legal Studies Minor~~	~~Arts~~	~~Crime and Deviance Specialization (Sociology major)*~~	~~Arts~~	Removing old inactive plan – June SUC
~~Legal Studies Minor~~	~~Arts~~	~~Sociology/Legal Studies - Criminology Specialization*~~	~~Arts~~	Removing old inactive plan – June SUC
Management Studies Minor	Arts	Business Option	Environment	Not previously listed as reciprocal
Mathematics Minor	Mathematics	Bioinformatics Option	Science	Not previously listed as reciprocal
~~Performance Creation Minor~~	~~Arts~~	~~Theatre and Performance Minor*~~	~~Arts~~	Replace by new guideline about renamed plans
Politics and Business Minor	Arts	Politics and Business Specialization* (Political Science major)	Arts	
Physics Minor	Science	Chemical Physics major*	Science	Needs to be listed as inactive
Computer Engineering Option	Engineering	Computing Option	Engineering	
Computer Engineering Option	Engineering	Software Engineering Option	Engineering	
Computing Option	Engineering	Software Engineering Option	Engineering	

FOR INFORMATION

MINOR PLAN & CURRICULAR MODIFICATIONS
Council approved the following on behalf of Senate:

- minor plan changes for the Faculty of Health (bachelor of science, honours health sciences, bachelor of public health, honours, pre-clinical specialization, health research specialization, gerontology minor, aging studies option, diploma in gerontology); and Faculty of Science (honours biology, honours biomedical sciences, honours environmental sciences, ecology specialization, honours material and nanosciences, science and business).
- new courses for the Faculty of Health (dean of health, school of public health science); and Faculty of Science (biology).
- course changes for the Faculty of Health (gerontology, school of public health science, kinesiology, recreation and leisure studies); and Faculty of Science (biology, chemistry, earth sciences, science and business).
- course inactivations for the Faculty of Health (co-operative education & career action); and Faculty of Science (biology, chemistry).

                                                  David DeVidi
/twk   Associate Vice-President, Academic

University of Waterloo
REPORT OF THE VICE-PRESIDENT, ACADEMIC & PROVOST
Report to Senate
17 October 2022

FOR APPROVAL
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Degrees, Diplomas, and Certificates.
In accordance with the provisions in the University of Waterloo Act, Section 22(g), Senate has the power:

> *...to confer degrees, diplomas and certificates or other awards in any and all branches of learning and in any subject taught in the University or its federated or affiliated colleges...*

Senate is asked to approve the lists of candidates for degrees, diplomas, and certificates as specified in the document which is uploaded to Senate's SharePoint site.

Motion: That Senate approve the lists of candidates for degrees, diplomas and certificates as recommended by the Faculty councils and the associate vice-president, graduate studies and postdoctoral affairs, and to authorize the chair to act on behalf of Senate, based on the recommendation of the registrar or, in the case of graduate students, the associate vice-president, graduate studies and postdoctoral affairs, to add to or change the lists of candidates for degrees, diplomas, and certificates, provided that the chair report back to Senate to advise of any such additions or changes.

Background: Senate has the final authority to confer degrees, diplomas, and certificates at the University of Waterloo. The registrar, and the associate vice-president, graduate studies and postdoctoral affairs are responsible for ensuring that all appropriate administrative procedures have been followed to confirm the eligibility of the names on the lists for graduate and undergraduate degrees, diplomas, and certificates and so certify on the document uploaded to the SharePoint site. Any additions or changes made to the lists subsequent to Senate approval will be provided in a report to Senate in November under Business Arising.

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University of Waterloo
REPORT TO SENATE FROM THE FACULTIES
17 October 2022

FOR INFORMATION

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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[1].

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[1] https://uwaterloo.ca/secretariat/sites/ca.secretariat/files/uploads/files/all_faculties_october_2022.pdf

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