

**University of Waterloo**  
**SENATE**  
**Notice of Meeting**

**Date:** Monday 18 January 2021

**Time:** 3:30 p.m.

**Place:** Microsoft Teams Videoconference

<b>OPEN SESSION</b>		
3:30	<b><u>Consent Agenda</u></b> <b>Motion:</b> To approve or receive for information by consent items 1-4 below.	
	1. Minutes of the 16 November 2020 Meeting	Decision
	2. Reports from Committees and Councils	
	a. Joint Report – Graduate & Research Council and Undergraduate Council	Information
	b. Graduate & Research Council	Information
	c. Undergraduate Council	Decision/Information
	3. Report of the President	
	a. Recognition and Commendation	Information
	4. Reports from the Faculties	Information
	<b><u>Regular Agenda</u></b>	
3:35	5. Business Arising from the Minutes	Information
3:40	6. Presentation – Strategic Plan Update and Developing Talent Action Team Outcomes	Information
	7. Reports from Committees and Councils	
3:50	a. Executive Committee	Decision
3:55	b. Graduate & Research Council	Decision
4:05	c. Undergraduate Council	Decision
4:15	8. Report of the President	
	a. General Update	Information
	b. Pandemic Response Update	Information
	c. PART Update	Information
4:25	9. Q&A Period with the President	Information
4:35	10. Report of the Vice-President, Academic & Provost	Information
4:45	11. Report of the Vice-President, Research & International	Information
4:50	12. Other Business	
<b>CONFIDENTIAL SESSION</b>		
4:55	13. Minutes of the 16 November 2020 Meeting	Decision
5:00	14. Minutes of the 17 November 2020 Extraordinary Meeting	Decision
5:05	15. Business Arising from the Minutes	
5:10	16. Report of the President	Information

CONFIDENTIAL SESSION

5:15

17. Other Business

11 January 2021  
KJJ/ees

Karen Jack  
University Secretary

**University of Waterloo**  
**SENATE**  
**Minutes of the 16 November 2020 Meeting**

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

**Guests:** Katherine Acheson, Jean Becker, Kathy Becker, Bruce Campbell, Aldo Caputo, Yufei Du, Donna Ellis, Barbara Forrest, Sanjeev Gill, Christine Gillis Bilton, Mike Grivicic, Candace Harrington, Ross Johnston, Andrea Kelman, Drew Knight, Nick Manning, Norah McRae, Christine McWebb, Bessma Momani, Mary Power, Chris Read, Emily Schroeder, Daniela Seskar-Hencic, Allan Starr, Sherri Sutherland, Mat Thijssen, Chris Wilson-Smith, Kathy Winter

**Absent:** Mike Ashmore, Dominic Barton\*, Fraser Easton\*, Teferi Mergo, Samer Zu’Mot

\*regrets

**OPEN SESSION**

The chair welcomed Senators to the meeting and offered congratulations to St. Paul’s University College on its recent appointment of Michaëlle Jean as chancellor.

**Consent Agenda**

Senate heard a motion to approve or receive for information the items on the consent agenda.

O’Connor and Simpson.

**1. MINUTES OF THE 19 OCTOBER 2020 MEETING**

Senate approved the minutes of the meeting.

**2. REPORTS FROM COMMITTEES AND COUNCILS**

**Joint Report – Graduate & Research Council and Undergraduate Council.** Senate heard a motion to approve the preferred name guideline, effective 1 September 2021.

**Graduate & Research Council.** Senate received the report for information.

**Undergraduate Council**

**Faculty of Engineering; Options, Specializations, and Electives**

Senate heard a motion to approve the proposed revisions to the grade regulations for options, specializations, and electives, effective 1 September 2021.

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**Faculty of Mathematics, Upgrading a General Degree to Honours Degree**

Senate heard a motion to approve the proposed revisions to the regulation regarding upgrading a general degree to an honours degree, effective 1 September 2021.

**Faculty of Mathematics, Update Communications Skills List 2**

Senate heard a motion to approve the proposed revisions to the communications skills list 2, effective 1 September 2021.

The remaining items were received for information.

**3. REPORT OF THE PRESIDENT**

**Recognition and Commendation.** Senate received the report for information.

**4. REPORTS FROM THE FACULTIES**

Senate received the reports for information.

The question was called and the motion carried unanimously.

**Regular Agenda**

**5. BUSINESS ARISING FROM THE MINUTES**

There was no business arising from the minutes.

**6. RESEARCH PRESENTATION – CHARMAINE DEAN, VICE-PRESIDENT, RESEARCH AND INTERNATIONAL**

Dean addressed Senate re: “Research, Innovation and Commercialization at Waterloo”. Speaking to her presentation, she informed senators about excellence in disciplinary and interdisciplinary research (including: recent members and fellows of the Royal Society of Canada, other fellowships and awards); details about sponsored research and industry funding, startups, the “AC Jumpstart” program and information about a specific researcher, Boxin Zhao; equity, diversity, inclusion and Indigenous initiatives (including: the READI Council, progress on the Equity Action Plan); international research partnerships (including: projects, grants, and success stories); impact and profile; research post-COVID (including the return to research, tri-agency assistance, the CanCOVID Network and Sue Horton’s selection as a theme lead, highlights of research being done by Mark Servos); a brief overview of the Waterloo Research Strategic Plan implementation.

**7. REPORTS FROM COMMITTEES AND COUNCILS**

**Joint Report – Graduate & Research Council and Undergraduate Council.** Senate heard a motion to approve the 2021-2022 academic calendar dates and calendar guidelines for establishing academic dates as presented in Attachment #1.

DeVidi and Newell Kelly. Carried unanimously.

**Graduate & Research Council**

**Graduate Studies – Academic Calendar Changes**

Senate heard a motion to approve new Qualifying Examination Regulations (under Minimum Requirements for the PhD Degree), effective 1 January 2021, as presented at Attachment 1.

Casello and Andrey. Carried unanimously.

Senate heard a motion to approve changes to University Responsibilities regarding Supervisory Relationships, effective 1 January 2021, as presented at Attachment 1.

Casello and Billedeau. Carried unanimously.

**Undergraduate Council**

DeVidi requested to move motions 1, 5, and 6 as one omnibus motion.

**Faculty of Applied Health Sciences; Addictions, Mental Health, and Policy Minor**

Senate heard a motion to approve the new Addictions, Mental Health, and Policy Minor, effective 1 September 2021.

**Faculty of Applied Health Sciences; Bachelor of Science, Honours Health Studies**

Senate heard a motion to approve the proposed changes to the Bachelor of Science, Honours Health Studies, effective 1 September 2022.

**Faculty of Applied Health Sciences; Bachelor of Science, Kinesiology**

Senate heard a motion to approve the proposed changes to the Bachelor of Science, Kinesiology, effective 1 September 2022.

DeVidi and Liu. Carried unanimously.

**Faculty of Arts – St. Paul’s University College, Indigenous Entrepreneurship**

Senate heard a motion to approve the proposed Indigenous entrepreneurship minor and diploma in Indigenous entrepreneurship as outline below, effective 1 September 2021.

DeVidi and Myers. Carried unanimously.

**Faculty of Engineering; Mathematics Option, Water Resources Option, Computer Engineering Option**

Senate heard a motion to approve the inactivation of these options, effective 1 September 2020.

DeVidi and Freeman. Carried unanimously.

DeVidi requested to move motions 3, 4, and 7 as one omnibus motion.

**Faculty of Engineering, Computing Option**

Senate heard a motion to approve the new computing option, effective 1 September 2021.

**Faculty of Engineering, Computer Engineering Option**

Senate heard a motion to approve the new computer engineering option, effective 1 September 2021.

**Faculty of Engineering, Software Engineering Option**

Senate heard a motion to approve the proposed changes to the software engineering option, effective 1 September 2021.

DeVidi and Wells. Carried unanimously.

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**Faculty of Environment, Geography and Environmental Management**

Senate heard a motion to approve the admission, progression and other academic requirements outlined in the 2+2 agreement with Shandong University of Economics and Finance (SDUFE), China, effective as of the effective date of the agreement, as presented at Attachment 1.

DeVidi and Andrey. Carried unanimously.

DeVidi requested to move motions 9, 10, 11, and 12 as one omnibus motion.

**Faculty of Mathematics, Computing and Financial Management**

Senate heard a motion to approve the proposed changes to the Computing and Financial Management (CFM) plan, effective 1 September 2021.

**Faculty of Mathematics, Mathematics/Chartered Professional Accountancy (Math/CPA)**

Senate heard a motion to approve the following changes to the Math/CPA plan, effective 1 September 2021.

**Faculty of Mathematics, Mathematics/Chartered Professional Accountancy – Finance Specialization**

Senate heard a motion to approve the proposed changes to the Math/CPA – Finance Specialization, effective 1 September 2021.

**Faculty of Mathematics, Pure Mathematics**

Senate heard a motion to approve the inactivation of the pure mathematics/teaching plan, effective 1 September 2021.

DeVidi and Giesbrecht. Carried unanimously.

**University Committee on Student Appeals.** Casello spoke to the report distributed with the agenda. Senators heard some of the reasons for the way the data is presented this year, and about academic integrity challenges as a result of the pandemic. Casello spoke to good work being done in the Faculties to address these challenges. In discussion: the increase in opportunistic cheating and Faculty responses, the benefits of increased education about academic integrity generally, ways to reduce the opportunity for such misbehaviour.

**8. REPORT OF THE PRESIDENT**

The president offered brief commentary on four key matters: a COVID-19 update; the University's investment decision making process and a commitment to keep this conversation going; supporting the University community's mental health and wellbeing over the course of the pandemic; the financial forecast in light of the recent provincial budget and the pending tuition announcement.

In discussion: a brief review of the conversation at the recent Board meeting about investments; an observation about the value of keeping a broad perspective with respect to responsible investing.

**Academic Affairs Working Group Update.** The president invited Rush to provide an update on this group. Senators heard about: the disruption to the University due to the pandemic; ways the University responds to disruption generally and the operational response now; what's coming in the future to find the right functional mix based on what we have learned; the strength of the University's strategic plan commitments. From DeVidi, Senate heard about work being done by the action teams, both in terms of responses to immediate problems, and longer-term considerations and benefits. Aldo Caputo, director, centre for extended learning spoke about the "Keep Learning" team and the pivot to remote teaching; lessons learned; ways to support the digital future.

In discussion: conversations about course offerings are occurring at the department and school level; future opportunities; good news stories about cooperation and leveraging resources; that teaching support resources are needed no matter how courses are offered.

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

Senate heard a motion to approve the revised dates for Winter Term 2021 as presented in the report.

Rush and Lemieux.

In discussion: appreciation for the initiative; confirmation that the final examination period is reduced as a result but is expected to be manageable.

The question was called, and the motion carried.

**10. OTHER BUSINESS**

Senators heard that the Senate Executive Committee will consider whether there is enough business to warrant a meeting in December later in the month and senators will be informed at that time.

Senate convened in confidential session.

4 December 2020

Karen Jack  
University Secretary

**CONFIDENTIAL SESSION**

The confidential minutes have been removed.



**University of Waterloo**  
**SENATE GRADUATE & RESEARCH COUNCIL**  
**and**  
**SENATE UNDERGRADUATE COUNCIL**  
**Report to Senate**  
**18 January 2021**

Senate Graduate & Research Council (SGRC) met on 14 December 2020 and Senate Undergraduate Council (SUC) met on 15 December 2020. Both councils received for information, temporary exception to calendar guidelines for winter 2021 and agreed to forward this item to Senate for information as part of the consent agenda.

Further details are available at:

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

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

**FOR INFORMATION**

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

On behalf of Senate, the two councils received for information revised grade submission deadlines for winter 2021, as a result of the revised dates for the winter term. This is a temporary exception to grade submission rules for winter 2021, as presented at Attachment 1.

*/rmw & kw*

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

David DeVidi  
Associate Vice-President, Academic

Charmaine Dean  
Vice President,  
Research & International

November 27, 2020

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

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

RE: Regulations

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

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

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

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

The problem: “Online courses” are no longer defined in the same way they were prior to COVID-19. In the past, “online courses” were CEL courses with in-person exams. Online courses are now offered across all faculties and may include an online exam. Thus, there is confusion about how the grade submission rules apply to the current online courses. The winter 2021 final exam period has been reduced from 14 days to 9 days (including the Emergency Day). The grade submission deadline remains the same, thus the grade submission period has been shortened. The grade submission rules allowing for 14 days will not be possible due to the reduced number of days in the period.

It is proposed that the grade submission rules for winter 2021 be changed as follows as an exception to the guideline (rule #15): As a result of the revised dates of the winter term, the grade submission period will also be revised to April 15-May 2 (was April 7-May 2). Due to a reduction in the number of days scheduled for the exam period, grades for all courses without a scheduled final exam will be due seven days after the start of the examinations. Final grades for courses (on-campus and online/remote) with final exams scheduled during the final exam period are normally due seven days from the date of the final exam. The May 2nd date does not need to move as the end of the final exam period is relatively unchanged.

**Date reference chart**

	PRIOR WINTER 2021 DATES	REVISED WINTER 2021 DATES
Grade Submission Period	April 7, 2021-May 2, 2021	April 15, 2021-May 2, 2021
Grades due for courses with a final exam	7 days after the date of the final exam	7 days after the date of the final exam
Grades due for online courses	May 2, 2021	N/A

Grade due for courses without a scheduled final exam	April 21, 2021	April 22, 2021
Grades due for courses with a major assignment due during the final exam period	N/A	May 2, 2021

**University of Waterloo**  
**SENATE GRADUATE & RESEARCH COUNCIL**  
**Report to Senate**  
**18 January 2021**

Senate Graduate & Research Council met on 9 November 2020 and 14 December 2020 and agreed to forward the following items to Senate for information as part of the consent agenda.

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

## **FOR INFORMATION**

### **UNIVERSITY RESEARCH ETHICS**

On behalf of Senate, council approved the following:

- Clinical Research Ethics Committee –new member (1)
- Human Research Ethics Committee –new member (1)

### **RENEWAL OF CENTRES AND INSTITUTES**

On behalf of Senate, council approved the renewal, for a 5-year term, of the following three centres, as presented: Centre for Computational Mathematics in Industry & Commerce (CCMIC), Centre for Pavement Advancement and Transportation Technology (CPATT), and Institute for Polymer Research (IPR).

### **ACADEMIC PROGRAM REVIEWS**

On behalf of Senate, council approved:

- Two-Year Progress Report – Systems Design Engineering (MASc/PhD/MEng) as presented at Attachment #1
- Two-Year Progress Report – New Program Applied Philosophy (PhD) as presented at Attachment#2
- Final Assessment Report for the 2017-2018 – Global Governance PhD as presented at Attachment#3
- Two-Year Progress Report – Geography and Geomatics (BES), Master of Climate Change (MCC) and Master of Tourism (MA) as presented at Attachment#4
- Final Assessment Report – Bachelor's in Global Business and Digital Art (BGBDA) and Master's in Digital Experience Innovation (MDEI) as presented at Attachment #5

### **GRADUATE AWARDS**

On behalf of Senate, council approved the Martin Simmons Graduate Scholarship for Locally Focused Architecture (trust), the Caivan Future Cities Graduate Scholarship (trust), and the Allan and Cynthia Arnold Graduate Scholarship in Engineering (endowment).

### **CURRICULAR SUBMISSIONS**

On behalf of Senate, council approved new courses, course revisions, minor program revisions for the Faculty of Applied Health Science (department of kinesiology, school of public health and health systems, school of social work), Faculty of Arts (sociology, psychology, social and legal studies, public service), and Faculty of Environment.



# Two-Year Progress Report Systems Design Engineering (MAsc/PhD/MEng) July 2020

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## Background

The review team examined the self-study documentation and conducted a site visit at the University of Waterloo on June 11-12, 2015. The visit included interviews with the Vice President, Academic & Provost, Associate Provost, Graduate Studies<sup>1</sup>, the Dean and Associate Dean, Graduate Studies, of the Faculty of Engineering, Chair and Associate Chair, Graduate Studies, of the Department, faculty members, administrative and technical staff and a group of six current graduate students and support staff. The reviewers also had an opportunity to visit three research laboratories.

## Summary of strengths, challenges and weaknesses based on self-study:

### Strengths

- Systems Design Engineering (SDE) is unique in Canada, providing an engineering program that focuses on both design as well as systems analysis, two areas that are typically in separate programs.
- The program boasts leading edge research in emerging areas, such as Biomedical engineering, intelligent systems & signals, human factors engineering as well as societal & environmental engineering.

### Challenges

- SDE is a diverse department, which is reflected in the diverse areas of research topics and they continually question what can unify their program. In the undergraduate program the unification is via design & system modelling which is not as explicit in the graduate program.
- There is a difficulty in attracting excellent domestic students to the Department's graduate programs, especially their own undergraduates who are highly desirable in the work force. This problem is also shared by other engineering departments at Waterloo and in Canada in general. A working group at the faculty level is addressing this issue.

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<sup>1</sup> The Associate Provost, Graduate Studies title changed to Associate Vice-President, Graduate Studies and Postdoctoral Affairs as of June 2017.

- Struggles with graduate course offerings chiefly due to the lack of teaching resources available, i.e., a lack of faculty.

#### Weaknesses

- Many of the faculty collaborate with other departments and faculties, but comparatively few collaborate with each other. Collaboration is an opportunity to unify the program and attract more domestic graduate students. We anticipate that space consolidation in EC4 (former RIM / Blackberry space) and the opening of E7 will partially address this weakness.

#### Summary of key findings from the external reviewers

The external reviewers report was positive and noted “The general environment in the department is open, receptive, inclusive and collaborative.” It also reported that the graduate students “value the interdisciplinary, collaboration and freedom that the SDE philosophy facilitates and see it as allowing them to see the big picture and transcend traditional engineering boundaries”.

Faculty members are seen as supportive, personable and compassionate and ‘very special’ people who go beyond what is expected by graduates. In addition, the program’s retention rates and times to completion are good, and overall student numbers are reasonably healthy and growing.

Reviewers identified a few challenges which included a shortage of graduate courses to serve the broad interests of graduate students and a continuing shortage of lab space.

#### Progress on Implementation Plan

##### Recommendations

1. A “systems level philosophy to problem solving” is implicitly found in the general environment in the department, but has not been developed and articulated at the graduate level in a formal manner.
  - a. **Status:** We are introducing core courses to the graduate program that addresses this. Initially the core courses will only be core for the MEng students however other graduate students in Systems Design will be able to take these courses. The Department approved these courses at a departmental meeting on July 19, 2017.
  - b. **Details:** The proposed new core courses include SYDE600 Systems Theory, Models, Research & Design; SYDE 660 Systems Design Graduate Workshop 1; & SYDE 662 Systems Design Graduate Workshop 2. These courses are available to MASc, MEng and PhD students in our department as well as within the Faculty of Engineering.

2.

- a. Graduate students in the course based MEng program will benefit greatly from guidance to navigate their course selections.
  - i. **Status:** The Associate Graduate chair has met with students on a regular basis to assist MEng students. We are also introducing core grad courses for MEng students (see above) as well as a variety of five specializations which will provide direction for MEng students as well as providing them with a focus.
  - ii. **Details:** The specializations were approved at Senate in April 2019 with the intention to have these available for students beginning in the Fall 2019 term. The specializations being introduced are: Artificial Intelligence and Machine Learning; Biomedical Systems; Human Factors; Mechatronic & Physical Systems; and Vision, Image & Signal Processing. Concurrently, 5 additional variants of SYDE660 (Systems Design Graduate Workshop 1) were created SYDE660A, SYDE660B, SYDE660C, SYDE660D, and SYDE660E to allow the students to gain design experience specific to their specialization. Those variants are being offered for the first time in Spring 2020.
- b. The mechanism for graduate student body feedback and involvement in matters related to the graduate program should be more formalized.
  - i. **Status:** A Graduate student representative was chosen to act as an intermediary the past two years. We have decided that a formal GSA is necessary and in September elections will be held for its executive.
  - ii. **Details:** The SDE GSA constitution has been approved at the university GSA level in July 2017. A faculty mentor is also working with the SDE GSA leadership.
- c. The average funding for thesis-based students in the department seems good, however, the minimum funding levels could be improved.
  - i. **Status:** The reviewers report suggested looking into offering funded TA-ships at the time of admission; this could certainly make an offer letter more attractive, but carries a risk of offering a TA position to a student with unknown pedagogical skills. We would point out that our average income for funded graduate students is \$31,857, compared to the Faculty of Engineering average income of \$30,295. Similarly, 27.5% of SDE graduate students have external scholarship support, compared to 20.3% across the faculty of Engineering. These two statistics are evidence, in fact, that Systems Design Engineering funding support is competitive relative to the rest of the faculty. The minimum level of funding for full-time research Masters students is set by the Faculty of Engineering and as of May 2019 is \$18,000/year. The minimum level of funding for full-time doctoral

students is set by the University. In Engineering, any income earned by students serving as TAs/CAs is on top of this minimum funding.

- ii. **Details:** No further progress required at departmental level.
- d. There is a general sense among the graduate students that the hours put in by the teaching assistants are significantly above the expected norms.
  - i. **Status:** The program has, and will continue, to articulate to professors the expectation of 130 hours of total work for teaching assistants. This information has been and will continue to be annotated in the TA appointment letter. Instructors are also requested to submit a time allocation sheet for each TA, signed by both the graduate student and instructor, showing a distribution of duties within this time period. To the extent that this expectation is not met in certain courses, we would propose that the graduate student feedback representative or SYDE GSA, discussed in point 2b, should allow such cases to be communicated anonymously to the graduate chair and ensure that discrepancies are dealt with promptly.
  - ii. **Details:** No further details necessary.
- 3. The number of annual graduate course offerings seems low relative to the wide span of areas in the department.
  - a. **Status:** In order to increase annual graduate course offerings, this problem will be addressed by the core courses introduced as well as the need for graduate courses for the specializations.
  - b. **Details:** Core courses are introduced and courses needed to support the specializations are being scheduled to be offered on a regular basis. Courses are also being added to ensure that each specialization has unique graduate courses, as required by the current University of Waterloo guidelines for specializations.
- 4. Current research space is fragmented and insufficient for the needs of the department.
  - a. **Status:** When this review was undertaken in 2015, when the measures of space requirements per student etc. were accounted for, Systems Design was the furthest behind of any other department in Engineering at the University of Waterloo.
  - b. **Details:** Since the acquisition of space in EC4 and E7, Systems Design is now, arguably, further ahead in space than most other departments. However, since hiring for the new Biomedical Engineering undergraduate program in the department remain ongoing, our space allocation will revert to being closer to the faculty average over time.



Address any significant developments or initiatives that have arisen since the program review process, or that were not contemplated during the review

Fourteen faculty members joined the department in the last five years. Two more will be joining before the end of 2020. We are currently reorganizing the graduate course cohort to better serve the needs of our graduate students. As a part of this reorganization, we are planning a new joint graduate program in Biomedical Engineering.

One of the expressed concerns during the review was the number of domestic graduate students. We currently only have anecdotal evidence around the increase in domestic graduate students and the variation in distribution between domestic and international students at various levels (MAsc, MEng, PhD). As our cyclical review is upcoming, this analysis will be a key focus of the upcoming (2021-22) review. It will be helpful to identify any changes in graduate student numbers across the programs since the time of the 2015-16 review and any variation in distribution between domestic and International students.

### Updated Implementation Plan

	Recommendations	Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
1.	Systems level philosophy	New core courses	Associate Graduate Chair	Dept approval: July 2017 EGSO approval: Fall 2017 Effective Fall 2018
2.	MEng issues	New specializations	Associate Graduate Chair	Senate approval April 2019 – effective Fall 2019
3.	Shortage of annual graduate course offerings	Annual courses scheduled to support specialization will address this problem	Associate Graduate Chair	Senate approval April 2019 – effective Fall 2019
4.	Department research space fragmented & insufficient	New EC4 space added July 2016. E7 space added fall 2018.	Department Chair	Completed Fall 2018

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



Date of next program review: \_\_\_\_\_ 2021  
Date

**S;**



Chair/Director

 P. 11


Date \_\_\_\_\_

N/A

AFIW Administrative Dean/Head (For AFIW programs only) \_\_\_\_\_ Date \_\_\_\_\_

*Patricia Williams* \_\_\_\_\_ *April 30/2019*

Faculty Dean \_\_\_\_\_ Date \_\_\_\_\_

Associate Vice-President, Academic (For undergraduate and augmented programs)	Date
	September 24, 2019
Associate Vice-President, Graduate Studies and Postdoctoral Affairs (For graduate and augmented programs)	Date

## Checklist for SUC/SGRC Reviewer Feedback

### Quality Assurance Office

**Two-Year Progress Report: Systems Design Engineering**

**Name of Reviewer:** Rhona Hanning

**Date:** 3/9/2020

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#### Does the Two-Year Progress Report:

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

#### General Comments

Click or tap here to enter text.



# Two-Year Progress Report – New Program

## Applied Philosophy (PhD)

### August 2020

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#### **Background**

The Applied Philosophy PhD program was created by the Philosophy Department through a consultative process between 2013 and 2017. In February 2016, the proposed program was reviewed by two external reviewers: Christy Simpson, Associate Professor and Department Head, Department of Bioethics, Faculty of Medicine, Dalhousie University and Daniel Weinstock Professor and Director, McGill Institute for Health and Social Policy McGill University. Overall, their report was very positive, describing the program as "innovative," "a unique program with little or no equivalent in North America," and one that the "excellent Department of Philosophy" is "uniquely situated, given the range of their [research] interests, and of their professional and personal interests, to make a success." The reviewers also had some suggestions, discussed below. The program was formally approved in 2017, and we began admitting students in Fall 2017.

This new four-year program is distinct from our more traditional Philosophy PhD program, though students in the two programs take some courses concurrently and participate in Departmental life together. The Applied Philosophy PhD program combines traditional PhD requirements (such as the completion of course work and a dissertation project) with experiential learning components. As with PhD programs in general, students are expected to advance the state of knowledge in the field; the particular focus of the Program involves the integration of theoretical training in philosophy with the ability to apply philosophy to practical problems. The most distinctive feature of the new program is the Applied Research Placement, an eight-month research activity in which three or four months are spent doing philosophical work at a host organization. Students also have opportunities to incorporate applied components such as the creation of policy briefs, databases, or the writing for non-scholarly audiences into their coursework and dissertation projects.

#### **Enrolment**

We currently have six students enrolled in the Applied Philosophy PhD program; for comparison, we have about twenty students currently enrolled in our (more traditional) PhD Program in Philosophy. The enrolment numbers below include three students who switched into our Applied Philosophy PhD program from our Philosophy PhD program, three who were admitted directly into the Applied PhD program, and one who was admitted into the Applied Philosophy program and chose to switch into our Philosophy PhD program.

Year	Number of Applicants	Number of Students Enrolled
2017-2018 (1 <sup>st</sup> year)	7	3
2018-2019 (2 <sup>nd</sup> year)	5	4

### Progress on Implementation

The program is working well and there have been no changes to the program structure. We have been pleased to connect with a number of potential host institutions for our Applied Research Placements, and the placements are working as planned. In January 2016, the Department signed a Memorandum of Understanding with Mitacs expressing plans to cooperate on funding for about 4 Applied Philosophy students per year through the Accelerate program. In 2016, the Department ran a pilot project in which three students completed Applied Research Placements, with one funded through Mitacs Accelerate. The host organizations for the pilot program were Sunnybrook Hospital, the Centre for Clinical Ethics in Toronto, and Facilitation Wellington-Dufferin.

The Department appoints an Applied Philosophy Advisor who focuses on the students in the program and coordinates the processes for placements. So far, each student has entered the program with a pretty clear sense of where they would like to do their placement, and the Applied Philosophy Advisor has been able to make personalized connections suited to their particular needs. Since the program is a four-year program, most of the six students are still at early stages of completing their degrees. Since the pilot project, we have had two more students complete placements, one at the Canadian Medical Association and another at the Indigenous Student Centre at UW.

The one challenge we have encountered is that we expected to have more applicants and more students enrolling in the program. However, we are encouraged by the increase between the first and second year. We note that this year there were five applicants and three acceptances, which will grow our overall cohort from six students to nine.

### Recommendations

1. Establish an Advisory Council/Group for the Applied Philosophy PhD program

Status: **in progress**

Details: As mentioned in our Department's response to the evaluator's comments in 2016, while we are working toward this aim, we are proceeding deliberately and, at first, somewhat informally. As we planned to do, we are currently seeking out connections in a variety of sectors, making use of our alumni network, and we are in touch with a range of host organizations. One reason the evaluators mentioned for favoring a Council was to help connect us with potential hosts and with people having

experience beyond the university; we have made connections with a good number of potential hosts and others who are interested in our program. As mentioned above, most students come to the program with preferences about hosts already formed, and we have been successful in coordinating placements that meet those preferences. Another reason we are waiting to formalize this committee is that we don't yet have a clear sense of how to populate it, since we haven't run enough students through the program to see what sectors/institutions/industries would be a good fit for the committee. Most of our initial placements were in health/social services fields, but incoming students have other interests (including the potential for on-campus placements in science, for example), and so we want to wait until we have more examples before trying to recruit members to a committee. While we therefore have a solid network of connections, we thought it prudent to wait until the program has more students to formalize an Advisory Council. We plan to start the process of forming the Advisory Council in the academic year 2021-2022.

2. Undertake ongoing monitoring to ensure equivalency across the program (building on the processes and mechanisms already identified and in development).

**Status: in progress**

Details: The evaluators pointed out that there may be challenges ensuring consistency in evaluation, especially for the work students perform in their placements and the applied components of course work and the dissertation projects. These applied components can take a range of forms, such as the creation of policy briefs or databases or the production of written work for a popular audience.

We have taken several steps toward ensuring the kind of consistency in evaluation that the recommendation refers to. First, we have implemented a new policy in which all the contracts for the Applied Research Placements are reviewed by the Associate Chair for Graduate Studies and the Applied Philosophy Advisor before being approved. Second, we are creating a library of examples of such contracts, so that students and supervisors can compare their plans with past placements. This allows us to develop rough guidelines about how applied components should be compared. Finally, as in our more traditional Philosophy PhD program, three faculty will serve on each student's committee; we expect that as more students move through the program, by working together on committees, faculty will develop shared standards over time.

3. Address the marketability of this new PhD program

**Status: in progress**

Details: With respect to marketing the PhD program to potential applicants, we have taken several steps. We have created a one-page flyer with information about the program, about the faculty, and about the placements that students have engaged in so far. The flyer has been shared at conferences, on our website, and by email. We have also discussed the new program at conferences, including at a poster session presented by a faculty member at the Philosophy of Science Association. In 2018, we formed an *ad hoc* committee to generate new ideas for reaching potential audiences.

As the evaluators note, the marketability of the new program will be partly fostered through the success of its graduates. Since the program is only two years old and it is a four-year program, this success is still in the future. Of the students who have enrolled or participated in the 2016 pilot project, one has completed her degree. She is now employed as a full-time Clinical Ethicist at the UHN Princess Margaret Cancer Care Centre in Toronto. As expected, she has helped recruit interested students, and regularly puts us in touch with applicants. We expect the two other pilot project students to complete their degrees in the coming year. Our enrolled students also participate successfully in high-profile events like the 3-Minute Thesis competition: in 2017 our pilot project student Andria Bianchi won the Arts Heat and came in second in the University of Waterloo competition, and in 2019 our Applied Philosophy student Kathryn Morrison won the Arts heat.

As mentioned above, while we have fewer students than expected, the numbers are increasingly substantially from year to year. As of September 2020, there were 9 students enrolled in the program. We are thus optimistic that the program will continue to grow and flourish.





**2023-2024**

Date of first program review: \_\_\_\_\_

~~February 16, 2016~~

Date

Signatures of Approval:

Patricia Mason  
Chair/Director

Apr 30 2019

Date

N/A  
AFIW Administrative Dean/Head (For AFIW programs only)

Date

[Signature]  
Faculty Dean

23/10/19

Date

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

\_\_\_\_\_  
Associate Vice-President, Academic  
(For undergraduate programs)

Date

Jeffrey M. Caell

November 1, 2019

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

Date

## Checklist for SUC/SGRC Reviewer Feedback

### Quality Assurance Office

**Two-Year Progress Report: Applied Philosophy PhD**

**Name of Reviewer: Siva Sivoththaman**

**Date: 10/20/2020**

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#### **Does the Two-Year Progress Report:**

- |  |  |                                    |
|--|--|------------------------------------|
| 1. Clearly describe progress achieved on the implementation of the program?  | <input checked="" type="checkbox"/> <b>Yes</b> | <input type="checkbox"/> <b>No</b> |
| 2. Explain convincingly any circumstances that would have altered the original implementation plan?                | <input checked="" type="checkbox"/> <b>Yes</b> | <input type="checkbox"/> <b>No</b> |
| 3. For items that are behind schedule, propose an amended implementation schedule that is reasonable and credible? | <input checked="" type="checkbox"/> <b>Yes</b> | <input type="checkbox"/> <b>No</b> |
| 4. Address significant developments or initiatives that have arisen since the program began?                       | <input checked="" type="checkbox"/> <b>Yes</b> | <input type="checkbox"/> <b>No</b> |

#### **General Comments**

**N/A**



**To:** Kathy Winter, Secretary, Senate Graduate and Research Council  
**From:** Amanda McKenzie, Director, Quality Assurance (Academic Programs)  
**Cc:** Jeff Casello, Associate Vice-President, Graduate Studies and Postdoctoral Affairs  
**Re:** Global Governance PhD Final Assessment Report

## MEMO

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The cyclical review of programs joint with other institutions are led by one of the partner institutions and governed by the respective Institutional Quality Assurance Process (IQAP). The review of the PhD in Global Governance was led by Wilfrid Laurier University (WLU). The Final Assessment Report (FAR) for the PhD in Global Governance was approved by Wilfrid Laurier University in early 2019. The FAR was then reviewed at Waterloo by Jeff Casello, as well as Simron Singh, Associate Dean, Graduate Studies in the Faculty of Environment and Linda Warley, Associate Dean, Graduate Studies in the Faculty of Arts in March 2019.

According to the University of Waterloo IQAP, the FAR must also be approved by Senate Graduate and Research Council and reported to Senate for information. As per typical practice, this FAR was reviewed by two members of Senate Graduate and Research Council, Bernie Duncker and David Clausi. Feedback was generally positive, with specific comments such as: "The implementation plan does address which recommendations will be followed along with who will be responsible for each recommendation" and "It would have been helpful to have a synopsis of the self-study findings, but perhaps this is not the practice at Laurier."

Because this FAR has already been approved by WLU, changes to the report are not possible at this time, though feedback from the reviewers was greatly appreciated.

To streamline this process, moving forward, FARs and Two-Year Reports for joint programs that are previously approved by a partner institution will be approved by Senate Graduate and Research Council without the assignment of reviewers. Comments and suggestions raised at SGRC about these approved reports will be captured in the meeting minutes and will be kept on record with the program files in the Quality Assurance Office for future consideration at their next cyclical program review.

## Final Assessment Report for the 2017-2018 Cyclical Program Review of the Joint PhD in Global Governance

### INTRODUCTION

In accordance with Laurier's Institutional Quality Assurance Procedures ([Policy 2.1](#)), this Final Assessment Report provides a summary of the review process for the PhD in Global Governance (PhDGG) program prepared by the Quality Assurance Office, along with an identification of strengths of the program authored by the Dean of the Faculty of Graduate and Postdoctoral Studies. All recommendations made by the external review committee are listed, followed by a summary of the PhDGG program's response, and the Dean's response. Recommendations not approved for implementation have been identified, and those that have been prioritized are listed in the Implementation Plan.

The Final Assessment Report is reviewed and approved by the Associate Vice-President: Teaching and Learning and the Vice-President: Academic. Following completion of the Final Assessment Report, it is approved by the Program Review Sub-Committee and Senate Academic Planning Committee. Approval dates are listed at the end of this report. Final Assessment Reports are submitted to Senate as part of an annual report on cyclical reviews, and to the Ontario Universities Council on Quality Assurance for information. Final Assessment Reports and Implementation Reports are posted on the public-facing page of the [Quality Assurance Office](#) website.

The PhDGG is a joint program with the University of Waterloo, housed within the Balsillie School of International Affairs (BSIA). As Directorship of the program was held by Laurier during the review, the review process followed Laurier's Institutional Quality Assurance Procedures, but was highly collaborative. The Self-Study was discussed and reviewed by the necessary constituents at both Laurier and UW. The site visit itinerary was arranged collaboratively and included meetings with senior administrators from both universities. The Final Assessment Report will be approved through the regular procedures at both institutions. Follow-up reporting will adhere to Laurier's process, outlined below.

The Implementation Plan for the recommendations prioritized in the Final Assessment Report can be found at the end of this report. Units will submit their first Implementation Report two years following approval of the Final Assessment Report at Senate. The Implementation Report will include comments from the unit on actions taken toward the completion of recommendations, comments from the relevant Dean(s) related to the progress made, and comments from the Program Review Sub-Committee, which is responsible for approving the Implementation Report and deciding if further follow-up reports are required. The Senate Academic Planning Committee will also approve the Implementation Report.

## SUMMARY OF REVIEW PROCESS

The last cyclical review of the PhDGG program was conducted by OCGS in 2010. The program was classified as GOOD QUALITY with no specific issues to be addressed in the next cyclical review. The lead author of the PhDGG Self-Study was Dr. Andrew Thompson, Program Officer, with input from the PhDGG faculty at both institutions through the Inter-University Programming Committee. In addition to the Self-Study (Volume I), the program also submitted a copy of associated faculty curricula vita (Volume 11), a volume of course syllabi, and a list of proposed external reviewers (Volume 111). A draft of the Self-Study was reviewed by the Quality Assurance Office and Dean of the Faculty of Graduate and Postdoctoral Studies at Laurier, and by the Quality Assurance Office and the Associate Vice-President, Graduate Studies and Postdoctoral Affairs at the University of Waterloo prior to submission of the final version.

The external review committee for the review consisted of two external reviewers from outside the university, and one internal reviewer from Laurier but outside of the department. The review committee was selected by the Program Review Sub-Committee on September 14, 2017, and the site visit was scheduled by the Quality Assurance Office for January 4-5, 2018. The slate of reviewer candidates was submitted to the University of Waterloo's Quality Assurance Office in advance of the Program Review Sub-Committee meeting, and a ranking of candidates was brought forward by the Director of Quality Assurance at UW, who attended the meeting.

The review committee consisted of Dr. Suzanne Zeller from the Department of History at Wilfrid Laurier, Dr. David Black from the Department of Political Science at Dalhousie University, and Dr. Randall Germain from the Department of Political Science at Carleton University. During the site visit, the review committee met with the following individuals and groups:

- Dr. Dan Gorman, Director; Dr. Simon Dalby, Outgoing Associate Director, Dr. Andrew Thompson, Program Officer; Kelly Brown, Program Officer; Dr. Alistair Edgar, SIPG
- Dr. Douglas Deutschman, Dean of Graduate and Postdoctoral Studies, Wilfrid Laurier University
- Dr. Paul Jessop, Vice-President: Academic and Dr. Kathryn Carter, Associate Vice-President: Teaching and Learning, Wilfrid Laurier University
- Faculty who teach and supervise in the PhDGG program from both universities
- Dr. John Ravenhill, Director of the Balsillie School of International Affairs
- Graduate students in the PhDGG program
- Library representatives: Ms. Charlotte Innerd, Head of Collections (Laurier), Ms. Helene LeBlanc, Liaison Librarian (Laurier), Ms. Jane Forgay (University of Waterloo)
- Dr. Jeff Casello, Associate Vice-President, Graduate Studies and Postdoctoral Affairs, University of Waterloo
- Dr. Linda Warley, Associate Dean of Graduate Studies, University of Waterloo
- Dr. George Dixon, Vice-President, Academic and Provost, University of Waterloo

The review committee submitted their completed report on February 6, 2018. The executive summary from the report is provided below.

## **External Reviewers' Report Executive Summary**

The joint WLU-WU PhD in Global Governance is an outstanding program. It has benefited from a very high-quality faculty complement, including many productive researchers and dedicated teachers and supervisors. Indeed, largely as a legacy of the CIGI Chairs program, a significant number enjoy prominent international reputations. This in turn has been a key factor in attracting a diverse cohort of excellent students, who bring a wide range of disciplinary and professional experiences to the program. Although the PhDGG is rightly concerned with being able to attract and support a larger number of international students, the products of this relatively young program have already enjoyed success in a range of professional and academic careers. In addition to the high quality of faculty available to them, students are also attracted by the excellent facilities at the CIGI campus, the rich array of events and research clusters at the Balsillie School of International Affairs, and strong financial support, again rooted in the generous initial funding provided to the School and to the program. The curriculum and courses offered by the program have provided a balanced and cutting edge training in the emerging interdisciplinary field of Global Governance, which has prepared them for a range of post-graduate pursuits. Students express a high level of satisfaction with the courses they have access to, and the support they receive from program staff and faculty.

As with any program, there are areas that require periodic re-examination and refinement. Most are relatively routine, and part of the normal process for review of an excellent - indeed flagship - program offering. Two are more pressing, however, and if unaddressed, could compromise the future of the program. In the former category, there are a number of inter-related curriculum issues that would benefit from collective consideration, including: the status of the existing six 'fields'; the current means by which the core course requirements are met; and the existing comprehensive examination process, including a common core examination and a choice of six field examinations. A second set of recommendations concern procedures and processes of communication, in relation to student research and conference funding, website coordination, and processes of complaint and appeal, for example. A third set of recommendations is related to the desire of the two universities to grow the size of the incoming student cohort, and to provide adequate financial support for this process through the systematic introduction of teaching and research assistantships.

In the latter category, and most urgent, is the looming challenge of faculty renewal as the initial cohort of CIGI Chairs (and leading international scholars who were initially recruited as CIGI Chairs) move towards retirement, and/or take up positions in other institutions. This is closely related to a second concern, which is the program's byzantine governance structure. This structure, in effect, means that the program is unable to robustly represent its own interests in the process of faculty renewal, and must rely (problematically) on the goodwill of other units to renew its faculty complement. Since the program's outstanding faculty cohort has been critical to its initial success, a failure to address these linked issues could jeopardize the future of this unique, world-class program.

Following receipt of the External Reviewers' Report, the Department collaborated on a Unit Response, which was submitted on May 24, 2018.

## RECOMMENDATIONS AND RESPONSES

The External Reviewers' Report included 21 recommendations, which have been listed verbatim below, followed by a summary of the program's response, and the decanal response from the Dean of the Faculty of Graduate and Postdoctoral Studies at Laurier.

**Recommendation #1:** It is important for the PhDGG's **websites** at the two partner institutions to provide the same information about the functioning of the program, and the various options available to students. Fields and course codes should be listed in identical order on both sites.

**Unit Response:** The program agreed to conduct a review of the websites over the summer.

**Decanal Response:** It is important to note that information for current students leads (from [students.wlu.ca](http://students.wlu.ca)) only to the BSIA website and hence we have no access to update that site. Nonetheless, the FGPS agrees a review of the website would be useful.

**Recommendation #2:** The PhDGG should consider adding to its **Learning Outcomes:**

- a) a series of skills related to **Teaching and Learning** -including the Teaching Certificate available at WLU - especially as the program is likely to add Teaching Assistantships to its student funding packages during the next cycle; and
- b) a series of **research skills** with training offered by the WLU/ UW Libraries. Such skills might usefully be promoted as components of the core course in Research Methods, and/ or as Doctoral Seminar milestones.

**Unit Response:** The program agreed with the recommendation and indicated that they would add learning outcomes related to both areas.

**Decanal Response:** The FGPS supports this recommendation and proposed action, which is related to a broader curriculum review that includes recommendations #3 and #5.

**Recommendation #3:** That the program undertake a formal review of the six **thematic fields**, with a view to reaching agreement on the following questions:

- a) can the field on Multilateral Institutions and Diplomacy be integrated into the core field on Global Governance, and/or can issues of institutions and diplomacy be integrated into the remaining thematic fields?
- b) can the field on Global Justice and Human Rights be made regularly and reliably available over the next cycle, or alternatively integrated into the remaining four thematic fields (and therefore removed as a discrete field option)?

**Unit Response:** Following the reviewers' visit, the program consulted students about the importance of the fields and have decided to leave them intact. For the 2019-2020 academic year, the program will remove the requirement that students are required to take two courses in their field of concentration.

**Decanal Response:** FGPS still has significant concerns about the current field structure. In the last 5 years, only 4 of 43 students (9%) took their comprehensive exams in the fields of Multilateral Institutions and Diplomacy or Global Justice and Human Rights. There were no exams in either field in four of the past five years. If these fields have not attracted more students before the 2-year implementation report, I would strongly recommend that the program consolidate the fields as suggested by the external reviewers.

**Recommendation #4:** That the program inform students in their acceptance packages which field courses will be offered during their first year in the program.

**Unit Response:** The program indicated that it will aim to inform students in early summer about which field courses would be offered, and to offer suitable alternatives should there be a case where a core field course cannot be offered.

**Decanal Response:** The FGPS agrees that students should have access to full information about course availability and alternative options as soon as is practical.

**Recommendation #5:** That the program review the existing **core course sequence and structure**, with a focus on: a) the relationship between the History of Global Governance and Globalization and Global Governance core course requirements; b) the means through which the Economics requirement should be met; and c) the focus and purpose of the Research Methods course.

**Unit Response:** The program agreed with the recommendation to undertake a review of the course sequence and structure and indicated that any curriculum changes that resulted from this review would be submitted for approval in Fall 2018.

**Decanal Response:** The FGPS supports the recommendation that course sequencing and progression requirements should be assessed with some regularity and would be pleased to discuss this further with the program.

**Recommendation #6:** That the program review the structure and format of the **comprehensive examination process**, to:

- a) ensure that comprehensive options align with the range of available core courses and fields; and
- b) consider whether to maintain the current practice of setting a core and a field exam, respectively, or tailoring the second comprehensive exam to the specific research interests of the candidate.



**Unit Response:** The program indicated that a review of the comprehensive examinations was connected to Recommendation #5, and would take place over the summer with any changes being submitted for approval in Fall 2018.

**Decanal Response:** FGPS supports a more streamlined process and would be pleased to discuss this further with the program.

**Recommendation #7:** That the program reconsider the time involved in its internship option and its follow-up requirements, given the tight timelines laid out for the completion of the degree, and therefore whether it should continue to be advertised as a program option.

**Unit Response:** The program believes that there is value in keeping the internship option available to students and does not wish to remove the option at this time.

**Decanal Response:** As described in the brief, the interest in the internship option is low in part because of demographics of the PhD students. Internship are likely to be more attractive to students coming directly from a Masters' program. Unless the program shifts its target market, it will have to actively advertise the benefits that students gain as a result of participating in the internship. FGPS thinks that there is a need for an ongoing discussion about the internship option.

**Recommendation #8:** That all comprehensive examinations be verified for authenticity of authorship and checked for plagiarism, to ensure their Academic Integrity.

**Unit Response:** The program will include this recommendation as part of its curriculum review process.

**Decanal Response:** The value of routine screening of graduate exams and theses for plagiarism using software tools like Turnitin is being discussed at the Ontario Council of Graduate Studies. FGPS supports further discussion on this matter. As this is related to several other initiatives that are part of the curriculum review process, it has not been included as a separate item in the Implementation Plan.

**Recommendation #9:** The program should move towards the incorporation of TA and RA duties as part of funding packages, and in the interest of enhancing student training. This is important not only to enable program growth and fifth-year support, but to link the program more visibly and organically to main campus programs. While both the Self-Study and the students express the hope that future funding packages will limit TA duties to Years 2 and 4 of the program, it may be more realistic to recognize that most other doctoral programs include such duties as essential to student training and support from Year 1.

**Unit Response:** The program outlined the challenges associated with the incorporation of TA and RA opportunities for PhD students, including the absence of a related undergraduate program and the necessity of consistent practices across institutions. The program reiterated its commitment to identifying suitable teaching opportunities for its students.

**Decanal Response:** While it is true there is no direct access to an undergraduate program, there are TA opportunities for the students. FGPS agrees with the external reviewers that most other doctoral programs include such duties as essential to student training and support from Year 1.

**Recommendation #10:** That WLU confirm its commitment to its joint programmes by offering students admitted to these programs funding equal to that offered by partner institutions.

**Unit Response:** The program indicated that the funding packages offered by both universities are currently consistent.

**Decanal Response:** FGPS agrees that maintaining funding parity across the university is an important goal. At the same time, it is important to acknowledge that the two universities have access to different resources, so it is not possible to guarantee parity in the future. Given this, this recommendation has not been included in the Implementation Plan.

**Recommendation #n:** That the program provide transparent and regular communication about the procedures for accessing student research and travel funding.

**Unit Response:** The program indicated that it agreed with this recommendation and had already begun to implement it. Related information had been communicated to students, and would be included in the program's student handbook.

**Decanal Response:** The FGPS has also made the request that any BSIA research/travel funds allocated to WLU students should be communicated (and made available to Laurier students) via the institution's standard means, thereby ensuring that each student's financial record is current and reflects the full level of financial support provided.

**Recommendation #12:** That WLU's Office of Graduate Studies consult with its graduate students to clarify its student policies and procedures with respect to program registration and the disbursement of funding, to align these with the experience of students enrolled through the University of Waterloo.

**Unit Response:** The program indicated that it would defer to Laurier's Faculty of Graduate and Postdoctoral Studies on this recommendation.

**Decanal Response:** FGPS uses a multi-channel communication approach through its website, bi-weekly news bulletin. Students are supported by FGPS staff, and that of the program officer and graduate program coordinator. Institutional policies and procedures are available on line for all Laurier students (including the Laurier registrants in the global governance program). While the degree program requirements in this joint program are consistent across both institutions, as registrants in a joint program, the students are bound to policies and procedures of their home institution.

**Recommendation #13:** That the two universities and the program consult on common rules regarding student complaints and appeals, and ensure that these rules are clearly known to both students and instructors.

**Unit Response:** The program indicated that students are bound by the rules of their home institution, but that they would add information about relevant policies and procedures to the program handbook.

**Decanal Response:** The FGPS agrees with the unit response and would be pleased to see the program handbook enhanced to reflect current information equally from both institutions in this regard. It is also appropriate to expect PhD students to take responsibility for being informed about their own degree program.

**Recommendation #14:** That the two universities agree on an administrative arrangement for the program that ensures strong representation of its interests in university level strategic and appointments decision-making.

**Unit Response:** The program indicated that its administrative arrangement was a matter for senior administration at both universities to address.

**Decanal Response:** The FGPS agrees that the program deserves and needs strong representation in university-level strategic planning. The dean of FGPS has discussed this issue with the Provost/VPA.

**Recommendation #15:** That the PhDGG program consult with its students regarding their Support Service needs, and liaise with appropriate administration and staff to mitigate students' concerns.

**Unit Response:** The program indicated that it would add information about support services to the orientation session held at the beginning of each year at both institutions.

**Decanal Response:** The FGPS agrees that Support Services available at each institution should be identified in a program handbook.

**Recommendation #16:** That the School and the partner universities explore the feasibility of a mechanism by which the share of research overheads generated by BSIA affiliated faculty be transferred to the school in proportion to the share of their time devoted to BSIA program responsibilities.

**Unit Response:** The program indicated that this recommendation was a matter for senior administration at both universities.

**Decanal Response:** This recommendation falls outside of the expectations of a program review and is a matter for senior administration at both universities. Thus, it has not been included in the Implementation Plan.

**Recommendation #17:** That the two universities commit to a plan for recruiting high-level research chairs who will be substantially committed to teaching and supervision in the PhDGG and other BSIA programs.

**Unit Response:** The program agrees with this recommendation but responded that its implementation was outside of the program's control as hiring decisions are not made by the PhDGG program itself. The program is committed to discussion with senior administration at both universities, which would be required to implement this recommendation.

**Decanal Response:** This recommendation falls outside of the expectations of a program review and is a matter for senior administration at both universities. This is tied to recommendation #14, which calls for the identification of the person who will advocate for the program at the highest levels of the administration. This recommendation has not been included in the Implementation Plan.

**Recommendation #18:** That the program carefully monitor its Teaching and Supervisory capacities over the next cycle, to ensure that its commitments to students do not exceed these capacities.

**Unit Response:** The program responded that it would ensure any growth would be sustainable and in alignment with available faculty resources.

**Decanal Response:** Enrolment targets are managed at the institutional level, and are established consultatively at the graduate level to ensure that faculty teaching, supervisory and financial resources are sufficient. As this is an ongoing operational process, it has not been included in the Implementation Plan.

**Recommendation #19:** That the program compile more detailed data regarding its applicants' institutional and disciplinary origins over the next cycle.

**Unit Response:** The program indicated that it was already collecting this information and would continue to do so throughout the next review period.

**Decanal Response:** The FGPS welcomes this suggestion, and is prepared to assist in any way possible. As this reflects a current and ongoing rather than new initiative, it has not been included in the Implementation Plan.

**Recommendation #20:** That the universities and the program continue to explore innovative means to enable and support increased international student recruitment as part of the effort to increase entering cohort numbers.

**Unit Response:** The program agreed with the importance of attracting international students and is committed to working with the administration at both universities to implement this recommendation.

**Decanal Response:** Laurier strives to attract a diverse graduate student cohort, including international students. Early recruitment of strong prospects may strengthen the quality of Vanier applicants, which may lead to greater success. Adequate and sustainable financial support contributions from faculty research grants would also strengthen the program's ability to attract and fund additional international students. The scope of this recommendation is institutional rather than program-specific, so it has not been included in the Implementation Plan.

**Recommendation #21:** That the program compile more detailed data regarding the sources of its students' external funding over the next cycle.

**Unit Response:** The program indicated that it already tracks this data and would continue to do so.

**Decanal Response:** The FGPS agrees with this recommendation and would be pleased to discuss this further. As a current and ongoing initiative, it has not been included in the Implementation Plan.

## STRENGTHS OF THE PROGRAM(S)

- The program benefits from the unique arrangement supported at the Balsillie School. It is important to continue to leverage that strength in planning for the future.

## OPPORTUNITIES FOR IMPROVEMENT AND ENHANCEMENT

- There are two sets of issues where the program and university need to do a better job of collaborating on decision-making and clearly communicating this to the students.
  - The first set of issues are about tactical details like policies, procedures, and day-to-day management of the program (e.g. recommendations 4, 11, 12, 13 and 15).
  - The second set of issues have to do with identifying and institutionalizing the person or people responsible for advocating for resources for students and faculty in strategic planning (e.g. recommendations 14, 16, 17, and 18).

## SIGNATURES

Dr. Douglas Deutschman

August 2, 2018



Dr. Kathryn Carter

September 18, 2018



Dr. Rob Gordon

October 5, 2018



## RECOMMENDATIONS PRIORITIZED FOR IMPLEMENTATION AND ACTION PLAN

Recommendation to be Implemented	Responsibility for Implementation	Anticipated Completion Date	Responsibility for Resourcing (if applicable)	Additional Notes
<b>Recommendation #1:</b> It is important for the PhDGG's <b>websites</b> at the two partner institutions to provide the same information about the functioning of the program, and the various options available to students. Fields and course codes should be listed in identical order on both sites.	Program Director or designee(s)	July 2019		
<b>Recommendation #2:</b> Addition of learning outcomes related to teaching and research skills.	Program Director or designee(s)	September 2019		
<b>Recommendation #3:</b> That the program undertake a formal review of the six <b>thematic fields</b> .	Program Director	September 2019		
<b>Recommendation #4:</b> That the program inform students in their acceptance packages which field courses will be offered during their first year in the program. (Notice, this should also be reflected in the revisions to the website mentioned in #1 and the university policies and funding packages described in #2)	Program Director, FGPS	December 2019		The offer letter for all graduate students are generated within FGPS and contain information on funding and deadlines. The Program Director and FGPS need to coordinate communication so that the information is sent at the same time, whether in a separate communication or combined into a single communication.

Recommendation to be Implemented	Responsibility for Implementation	Anticipated Completion Date	Responsibility for Resourcing (if applicable)	Additional Notes
<b>Recommendation #5:</b> That the program review the existing <b>core course sequence and structure</b> , with a focus on: a) the relationship between the History of Global Governance and Globalization and Global Governance core course requirements; b) the means through which the Economics requirement should be met; and c) the focus and purpose of the Research Methods course.	Program Director	September 2020		This is an essential part of the review of the thematic fields (#3) and the comprehensive examination (#6).
<b>Recommendation #6:</b> That the program review the structure and format of the <b>comprehensive examination process</b> , to ensure that comprehensive options align with the range of available core courses and fields; and consider whether to maintain the current practice of setting a core and a field exam, respectively, or tailoring the second comprehensive exam to the specific research interests of the candidate.	Program Director	September 2020		
<b>Recommendation #7:</b> That the program reconsider the time involved in its internship option and its follow-up requirements, given the tight timelines laid out for the completion of the degree, and therefore whether it should continue to be advertised as a program option.	Program Director	September 2020		Two more years of data will inform the decision about maintaining this option.

Recommendation to be Implemented	Responsibility for Implementation	Anticipated Completion Date	Responsibility for Resourcing (if applicable)	Additional Notes
<b>Recommendation #9:</b> The program should move towards the incorporation of TA and RA duties as part of funding packages, and in the interest of enhancing student training.	Program Director, VPA/Provost, Dean of FGPS	September 2020		If the program has aspirations for growth, the incorporation of TA and RA opportunities may prove integral to funding a larger cohort. In accordance with the university's funding policy for doctoral students, the opportunity to TA or to teach a course is deemed integral to the program and student training.
<b>Recommendation #n:</b> That the program provide transparent and regular communication about the procedures for accessing student research and travel funding.	Program Director, VPA/Provost, Dean of FGPS	September 2020		Related to Recommendation #9 above: while funding currently is reasonably comparable between institutions, increasing the variety of sources from which funding can be drawn will help diversify the opportunities available to students.
<b>Recommendation #12:</b> That WLU's Office of Graduate Studies consult with its graduate students to clarify its student policies and procedures with respect to program registration and the disbursement of funding, to align these with the experience of students enrolled through the University of Waterloo.	FGPS with input from PhDGG Program Director.	July 2019		Alignment of our policies and procedures will be harmonized with the University of Waterloo as much as possible. FGPS will communicate policies and procedures and highlight any areas where the two schools operate under different systems or constraints.
<b>Recommendation #14:</b> That the two universities agree on an administrative arrangement for the program that ensures strong representation of its interests in university level	VPA/Provost, Dean of FGPS, Associate Dean (SIPG)	September 2019		This is an important recommendation to ensure that the programs in SIPG have strong advocacy and adequate representation at Laurier.



strategic and appointments decision-making.				
<b>Recommendation #15:</b> That the PhDGG program consult with its students regarding their Support Service needs, and liaise with appropriate administration and staff to mitigate students' concerns.	Program Director or designee(s)	September 2019		



# Two-Year Progress Report

## Geography and Geomatics (BES), Master of Climate Change (MCC) and Master of Tourism (MA)

### March 2020

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#### **Background**

The review of two core plans in the Department of Geography and Environmental Management (GEM) programs, specifically Geography and Environmental Management (BES) and Geomatics (BES) was conducted on April 13 and 14, 2015. The two core programs that were reviewed also form part of the Joint Honours plans in Geography and Environmental Management and in Geomatics, plus the three year general degree plan in Geography and Environmental Management. In addition, the Department's two course-based Master's degrees, Master of Tourism and Master of Climate Change, were reviewed. The remaining graduate research thesis-based plans at the Master's and PhD levels were reviewed under a separate process and do not fall under this report.

The two review visit days comprised interviews with various administrators from the Department, Faculty and central administration at the University of Waterloo. In addition, several sessions were conducted with the faculty and students of the programs being reviewed along with visits of the main map library and the GEM facilities.

The resulting report from the examiners was completed on June 11, 2015. A written response to the reviewers' recommendations was submitted to the University on August 17, 2015, by the Chair, Professor Peter Deadman.

Overall, the Reviewers' general comments on the program objectives and learning outcomes stated that *"the requirements for the programs and the learning outcomes were clearly laid out in the reports we were provided. There is clearly a strong emphasis at the University of Waterloo's Geography on educating graduates for future employment. This is part of the Waterloo brand and the programs associated with the co-ops seems to be very well developed and successful."*

The following section provides updates on the recommendations made by the reviewers. Each **Recommendation** is followed by the Department's initial **Response** (August 17, 2015) followed by a **Progress on Implementation** as of May 2018.

## Responses to the Reviewers' Recommendations

**Recommendation 1:** *We recommend that GEM consider a strategic visioning of the Department as a whole, to define future plans and identify priorities for faculty positions, undergraduate and graduate teaching programs, and resources.*

**Response:** We agree with this recommendation. Discussions around the future of the department are ongoing. Currently, we are reviewing our experiential learning activities, our undergraduate recruitment activities, and the overall research and teaching focus of the Department, with a particular emphasis on human geography. These activities will continue over the next year with the following specific goals: reviewing and revising the undergraduate and graduate curriculum, clarifying and improving our experiential learning activities, and arriving at a plan for future hiring, with a focus on human geography. These activities will be led by the Department Chair and Associate Chairs.

**Progress on Implementation:** Since the review, the Department has embarked on several far-reaching initiatives which respond directly to this recommendation. In January 2017, a standing Curriculum Committee was struck to monitor, adapt and adjust the undergraduate curriculum in response to the report but more importantly to respond to existential needs from students as well as workplace demands, and to strengthen our identity from a programmatic perspective. This activity is making significant progress in several areas of the curriculum. Significant structural adjustments to the curriculum have been developed in 2017 for the new undergraduate intake to the BES GEM program in 2018 and BES Geomatics Program in 2019. These changes streamline the pathways through the GEM BES program with similar adjustments to the Geomatics program. The goals are a) to provide students with more clearly prescribed pathways through our BES programs, including our specializations, b) to increase predictability of core course offerings for each incoming cohort to help improve student course selection and curriculum management, and c) to better define our experiential learning activities within courses and explicit field course offerings.

With respect to undergraduate recruitment efforts, the Department initiated a dedicated Committee on Undergraduate Recruitment (CUR) tasked with increasing outreach to high

school students and teachers. CUR recognizes two challenges to the sustained recruitment of geography undergraduate students. First, the prominence of Geography as a scholarly university discipline has increasingly been challenged in high school curricula; currently, the last time students are exposed to geography is in Grade 9. Students now see Geography as one of many "environmental" pathways available to them. This identity strengthening is a priority of Canadian Association of Geographers for which GEM has been an active member (the current incoming president, 2018-20 is Professor Sanjay Nepal). Second, the discipline of Geography is broad covering human geography (e.g. economic geography, geographies of urban and rural regions, cultural geography, environmental sustainability, climate change), physical geography (e.g. geomorphology and physical landscape change, water science, cryospheric science, soil science, hillslope processes) and geographical information science (geographical information systems, remote sensing, surveying and mapping). While GEM covers many of these elements, students have a wide range of disciplinary choices within the Faculty of Environment, some of which intersect with GEM. In addition, GEM competes with other geography departments at other universities for new undergraduate students.

Therefore, CUR is developing specific outreach materials that highlight key issues that Geography addresses and which can be delivered in a "roadshow" format to high school students, *in situ*. The "Climate Change Roadshow" package has been taken to high schools in Southern Ontario (over 100 Grade 11 and 12 classes since September 2017) and similar human and physical geography packages will be developed for 2018-19. These efforts are supported by a co-op student each term.

Finally, the Department's strategic vision is being refined. First, our research themes have been adjusted to reflect our collective identity: Geomatics, Climate Change and Environment, Earth Systems Science, Economy and Society. Geomatics and Earth Systems Science have remained largely unchanged since the review. However, our Climate Change theme has been strengthened to be Climate Change and *Environment* and our previous human geography theme of Development and Environment has been changed to *Economy and Society*. This is in response to strengthening of our human geography sub-discipline. Two appointments were made in Economic Geography in 2016-17 to re-invigorate this area of the discipline in GEM and across the faculty. The following rationale defines this approach:

*"new economic geography* has moved away from viewing economic processes as separate from social, cultural and political contexts. Instead, social, cultural,

and institutional factors now tend to be seen as key factors in understanding economic dynamics. Unlike previous genres, the new economic geography is not represented by a particular theoretical perspective or methodological practice..." (Coe *et al.*, 2007, p. 13)<sup>1</sup>

**Status:** Significant progress, ongoing

**Recommendation 2:** Undergraduate student advising and mentorship should be broadened within the department to include a wider range of faculty and on a more frequent basis.

**Response:** We will take this recommendation under advisement. The Department has two Associate Chairs and two staff who are available to advise students on academic and curriculum matters. We are not aware of any complaints from students regarding a lack of access to academic advising. Further, we are concerned that other faculty in the Department do not have sufficient knowledge of policies, procedures, and curriculum requirements to provide accurate and uniform advice. Over the next year, we will review and discuss our current academic advising activities with student representatives to determine if adjustments are required to improve the service we provide. This activity will be led by the Department Chair and Associate Chairs.

**Progress on Implementation:** The retirement of the long-standing staff Undergraduate Advisor (GEM) took place in 2015; however, their replacement continues to provide this important advisory function and is highly proactive in advising our students. The Associate Chair for Undergraduate Studies (GEM) also has continued oversight of this important activity. With respect to the Geomatics plan, a new staff Undergraduate Advisor was appointed to replace a second retirement, and this position is gradually coming up to full advising capacity. Oversight of this plan is provided by our Associate Chair for Undergraduate Studies (Geomatics, Geography and Aviation and International Students) who remains a significant mainstay of these programs, along with a new faculty hire in the Geography and Aviation field who supports this program. The Associate Chair for Undergraduate Studies (Geomatics, Geography and Aviation and International Students) also spends significant time advising our international students in the 2+2 and 1+2+1 programs (see Recommendation 9 below).

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<sup>1</sup> Coe, N.M., Kelly, P.F. and Yeung, H.W.C. 2007. *Economic Geography: A Contemporary Introduction*. Oxford: Blackwell.

**Status:** Completed

**Recommendation 3:** We strongly recommend the Department seek to improve communication with undergraduate students related to course enrollment. Determining Department course offerings prior to student registration would eliminate many challenges faced by students in meeting their program requirements. Additionally, given the complexity on offering courses due to the co-op programs, we recommend the Department consider multi-year course planning to improve student access to courses.

**Response:** We agree with this recommendation. We currently advise students of our term-by-term course offerings one year ahead of time. However, the specific scheduling of these courses in each term is handled by the Registrar's Office, with notice of the schedule given about two months prior to the start of that term. This scheduling of classes and times is beyond the control of the department. We will review our communication of course offerings to students to improve the availability of this information and lengthen advance notice of course offerings. This activity will be led by the Chair and Associate Chairs over the next year.

**Progress on Implementation:** Ongoing efforts to strengthen the curriculum continue. As described in our progress report to Recommendation 1, GEM provided all Fall 2018 incoming undergraduate students with an explicit roadmap of the core courses in their plan and specializations from terms 1A to 4B. A similar roadmap will be provided for incoming Geomatics students in Fall 2019. Students will be fully aware of when their core courses should be taken. It is anticipated that this will help students in course selection and enable them to better understand where they are in the program. It is also expected that this "road mapping" will progressively improve their learning confidence. Program roadmaps will be created each year starting in Fall 2018. This is only achievable having developed the increased streamlining and predictability of the three single Honours undergraduate programs (including regular and co-op tracks).

**Status:** Ongoing monitoring

**Recommendation 4:** The program in Human Geography is in a transition period and we recommend initiating a review and visioning for the program to reflect the current faculty complement. We anticipate elements of the geography of health would be well supported by

the expertise in the group, and natural linkages could be developed to the Geomatics and other units in the Faculty and across campus.

**Response:** We agree that The Department is in transition with respect to its strengths in Human Geography. We would note, however, that the Department's combined strengths in the human and physical dimensions of climate change are noteworthy, that the ways in which social science and natural science are integrated around this theme reflect an important aspect of Waterloo's Geography programming, and that Human and Physical Geography do not exist as two silos. That said, we agree that a review and visioning exercise is needed, with a particular focus on human geography, and this has been underway for the past year. These will continue with a view to outlining a vision for the Department that will guide future hiring. This activity will be led by the Department Chair and Associate Chairs.

**Progress on Implementation:** Since the last report, the faculty complement of 26 (25 FTE) has increased to 32 (20.25 FTE). Whilst three of the 2015 complement have retired or moved, eight new hires have been made to the faculty complement. This includes one new position in health geography, one position in geography and aviation and two new positions in economic geography. We have also benefited from a faculty appointment at the lecturer level in resource management for which the incumbent has a home in GEM. The decision was made in 2015 to pursue re-building the area of economic geography for which the Department has been known in the past and for which strong links exist across the faculty. In addition to these five hires, we have also hired two new physical geography faculty (both successful CRC Tier II holders) and have made a joint appointment with a faculty member in the Faculty of Science.

**Status:** Completed

**Recommendation 5:** The program in Geomatics has rapidly developed and appears poised for further growth. Increased promotion to incoming undergraduate students with interests in computing may further increase enrollments.

**Response:** We agree with this recommendation. We have recently struck a committee for undergraduate recruiting. This committee will develop a strategy that will include raising awareness of geomatics amongst high school students. Additional resources from the Dean's Office may be required for promotional activities, such as the revival of the

"Geomatics Roadshow" or the preparation of promotional materials. This activity will be led by the Department Chair, working with the Undergraduate Recruitment Committee.

**Progress on Implementation:** Since the last report was released, the undergraduate Geomatics plan is now one of the strongest recruitment plans in the faculty. The Fall intake in 2017 recruited 92 new geomatics students of whom ~55 were deflections from Computer Science and 37 were direct applications. Despite the Geomatics plan not being able to offer a Computer Science minor, this plan continues to be a robust recruiter for GEM. CUR continues to be active in strategizing on approaches for ongoing geomatics recruitment. What is very gratifying is that anecdotally, our geomatics students who deflected into the program are highly appreciative of this stream and once they become engaged in the program, demonstrate a high level of satisfaction with the plan. Through the Dean, the Department continues to engage with Computer Science regarding the possibility of re-opening the CS minor pathway.

**Status:** Ongoing monitoring

**Recommendation 6:** Development of a Master's program in Geomatics appears to hold strong potential. The existing faculty complement could support an advanced program that would be uniquely positioned to train students for research and development aspects of Geomatics. A co-op offering would be a logical consideration given the university strengths.

**Response:** We agree with this recommendation. Discussions regarding the development of a Master's program in Geomatics have taken place in the past. The Department will consult with the Dean of Environment to explore the feasibility of developing a co-op Master's program in Geomatics.

**Progress on Implementation:** Since the last report was released, the funding landscape has shifted and the emphasis now is on the funding of domestic doctoral students. Whilst the aspiration in the medium term is to consider a program in Geomatics, the current focus is on increasing Honours Geography numbers (see recommendation 1) and encouraging increased domestic graduate applicants at the doctoral level.

**Status:** Ongoing monitoring



**Recommendation 7:** The new Master of Climate Change (MCC) program has already built a strong international attraction and positive feedback from students. Maintaining the "lead" of this program in a rapidly developing sector in Ontario and globally will require continuing to innovate [and] attract high quality students. We recommend considering the development of co-op and research program streams to better meet student career goals and to make sure that student expectations are being matched effectively.

**Response:** We agree with this recommendation. Over the next year, we will explore and discuss the possibility of adding a co-op stream to the MCC program. This initiative will be led by the Director of the MCC program, working with the Department Chair and Associate Chairs.

**Progress on Implementation:** Since the last report was released, the MCC program has blossomed in student number and quality. In 2016 our intake was 19 students, while in 2018 we accepted 32 new MCC graduate students. In 2016, 2017 and 2018, 15 (94%), 15 (83%), and 26 (93%) MCC students respectively, were successfully placed for internships. The use of internships in 2017, 2018 and 2019 has been especially successful with students placed at Federal ministries, municipalities and NGOs. This is in part the outcome of the strengthening of ties between the faculty and these various entities in the past three years. For example, the MCC program makes efforts to engage key senior federal employees in course development; for the past three years, a resource management and climate change course was taught by a senior federal employee. Furthermore, we are in the process of developing an online climate change and health course in collaboration with Health Canada. Students in the program have secured internships which in some cases have segued into full time positions. And the strength of these internship placements has been demonstrated by repeat requests for more interns from the partners involved. In addition, the flexibility that the program offers in terms of taking advantage of an internship or completing a major research paper is a real attractor for students. Adding a co-op term will both extend the program and increase student financial and time burden, and reduce flexibility at a time (Spring term) when they typically have demonstrated an ability to optimize their options to suit their own needs. It seems now that adding a co-op stream will very likely reduce this flexibility for a program that can be agile at a key time in the student experience. Furthermore, given the nature of our relationships with external partners it is not clear what the role of Co-operative and Experiential Education would be for implementing co-op in such a program given the nature of the tight connections between faculty instructors and

internship placement organizations. It is also unclear whether a co-op track is even available to the MCC program. So, while a co-op stream in the MCC was initially attractive, it is still premature. Moreover, significant internship placements are proving very popular with our students.

**Status:** Completed.

**Recommendation 8:** The Master of Tourism appears to be at a crossroads, with declining enrollments and a change in the faculty complement that makes the viability of this program questionable.

**Response:** We agree with this observation. GEM has already decided to discontinue offering the Master of Tourism. The Department of Recreation and Leisure Studies has decided to admit students to the Tourism program for the Fall of 2015. However, they will review their commitment to the program over the next year. We will coordinate with them as they make that decision.

**Progress on Implementation:** This program is no longer offered since the application pool became not sustainable to support its delivery and the clustering of faculty expertise in this area is no longer sufficient to support the program. This is in part due to retirements and to core faculty being engaged in other high profile programming in the Department.

**Status:** Completed

**Recommendation 9:** Based on feedback, we feel that the Department needs to invest in expanding cultural and related support for the programs that attract a sizable international cohort (2+2, Master of Climate Change).

**Response:** We will take this recommendation under advisement. The Faculty of Environment has a full-time Coordinator of International Education who works with international students, and especially the 2+2 students, to support their adjustment to the Canadian academic environment. We will work with the Dean of Environment to review the activities of the coordinator and address any perceived needs.

**Progress on Implementation:** The continued implementation of this student support is ongoing. Since the review was conducted, new China university 2+2 and 1+2+1 programs have been developed each of which requires significant oversight by the Associate Chair for

Undergraduate Studies (who also has oversight responsibilities for the Geomatics, Geography and Aviation and Science and Aviation plans). As indicated in the Department's response to the original review, the Faculty has a full-time Coordinator of International Education who works with our international students and we are continually reviewing our activities and responding to perceived needs.

**Status:** Ongoing monitoring

**Recommendation 10:** Graduate student application review and acceptance practice in the Department appears to be heavily weighted towards support staff with limited academic oversight. The volume of applicants and the screening process should be reviewed to increase faculty involvement.

**Response:** We disagree with this assertion and recommendation. Support staff facilitate the review of graduate applications, but they do not make decisions with respect to the admission of graduate students. The final decision regarding the admission of each applicant is made by the potential faculty advisor of that student and the Associate Chair, Graduate Studies, under the supervision of the Associate Dean, Graduate Studies.

**Progress on Implementation:** As a matter of standard procedure, we monitor admissions procedures with specific reference to the MCC program, to ensure that the burden on the support staff continues to be managed in support of the review process and not the acceptance process. In addition and for the record, in September 2019 the Graduate Program Administrator position for MCC and the new Diploma in Climate Risk Management, which was previously split with School of Environment Enterprise and Development, was consolidated in GEM to a full time FTE staff position.

**Status:** Completed

**Recommendation 11:** Support staff in the Department are in the process of developing documentation for best practices and procedures to enhance the continuity of staff support. We recommend continuing to support this positive initiative.

**Response:** We agree with this recommendation. This activity will be ongoing, under the supervision of the Department Chair.

**Progress on Implementation:** With significant turnover of three of the support staff positions, replacement hires and existing staff have taken on the responsibility for creating and maintaining documentation of best practice and procedures of their roles. Staff have developed or are in the process of developing documentation for standard operating procedures. This will help provide continuity.

**Status:** Ongoing monitoring

### Updated Implementation Plan

	<b>Recommendations</b>	<b>Proposed Actions</b>	<b>Responsibility for Leading and Resourcing (if applicable) the Actions</b>	<b>Timeline for addressing Recommendations</b>
1.	GEM consider a strategic visioning of the Department as a whole, to define future plans and identify priorities for faculty positions, undergraduate and graduate teaching programs and resources.	Streamlining and clarification of the plans. Significant outreach activities to Ontario high schools. Refined research themes that more clearly propagate through all programs. Increased complement of Economic Geography cluster.	Chair, Associate Chair, Undergraduate Studies, Associate Chair, Graduate Studies, Standing Curriculum Review Committee, Committee for Undergraduate Recruitment	Curriculum review and recruitment outreach activities ongoing. Research themes refinement completed. Two Assistant Professors hired in Economic Geography completed.
2.	Undergraduate student advising and mentoring should be broadened within the department to include a wider range of faculty and on a more frequent basis	Staffing turnover in advising positions has injected fresh energy and vision into this activity. In addition, associate chairs are now able to be more proactive in their capacity.	Chair	Completed
3.	Improved communication with undergraduate students with respect to course planning, selection and registration.	Turnover of support staff has injected new energy and increased activity in this support role. Cohort road mapping is underway for 2018 to provide students predictability of core course offerings in their plans and specializations.	Chair and Associate Chairs, Undergraduate studies. Curriculum Review Committee	Ongoing monitoring
4.	The program in Human Geography is in a transition period and we recommend initiating a review and visioning for the program to reflect the current faculty complement. We	Following a Departmental white paper on Human Geography needs in the Department, two new hires in the economic geography theme were made	Chair	Completed

	anticipate elements of the geography of health would be well supported by the expertise in the group, and natural linkages could be developed to the Geomatics and other units in the Faculty across campus.	at the Assistant Professor level. A further appointment was made in health geography.		
5.	The program in Geomatics has rapidly developed and appears poised for further growth. Increased promotion to incoming undergraduate students with interests in computing may further increase enrollments.	The Geomatics plan is the strongest recruitment pathway in the department. In 2017, nearly twice as many geomatics students were accepted as any other plan. Some rebalancing between Geomatics, GEM and the Aviation plans is needed.	Associate Chairs Undergraduate Studies, Committee on Undergraduate Recruitment	Ongoing monitoring
6.	Development of a Master's in Geomatics	Changes in the provincial funding landscape has meant that there is more focus on the doctoral graduate level than a Geomatics Master's degree.	Chair, Associate Chair, Graduate Studies	Monitoring
7.	Development of a co-op stream and research pathway in the Master of Climate Change plan.	Co-op graduate programs are not the norm and will be challenging for the international students in this cohort. Internships are highly desirable especially for those placed in government departments (Federal and Provincial). MCC has been successful in this area. Major Research Paper students seem satisfied with their pathway through the MCC. Strong MCC students can segue into a Doctoral program after their Master's.	Director of MCC, Program Chair	Completed

8.	The Master of Tourism appears to be at a crossroads, with declining enrollments and a change in the faculty complement that makes the viability of this program questionable.	Program no longer offered	NA	NA
9.	Expand cultural and related support for the programs that attract a sizable international cohort (2+2, Master of Climate Change)	Faculty has a full-time Coordinator of International Education who takes on this responsibility. Associate Chairs also provide oversight of these students.	Chair, Associate Chairs, Undergraduate Undergraduate Advisors	Ongoing monitoring
10.	Graduate student application review and acceptance practice in the Department appears to be heavily weighted towards support staff with limited academic oversight. The volume of applicants and the screening process should be reviewed to increase faculty involvement.	Support staff facilitate the review of graduate applications. They do not make decisions with respect to the admission of graduate students. The potential faculty advisor makes the final decision about whether or not to accept the student, given the student's academics are satisfactory.	Associate Chair, Graduate Studies. Director of MCC program. Administrative Assistant to MCC program.	Completed
11.	Support staff documenting best practices and procedures to enhance continuity of support staff.	Ongoing with recent turnover of support staff	Administrative Manager, Chair, Associate Chairs.	Ongoing monitoring

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

Date of next program review: \_\_\_\_\_ 2021-2022  
Date

Signatures of Approval:

Chair/Director Date 13 July 2018

*Richard J. J. Kelly*

AFIW Administrative Dean/Head (For AFIW programs only)

Date

*Janice A. 7*

*Sept 26/19*

Faculty Dean

Date

*Marie Coniglio*

March 26, 2019

Associate Vice-President, Academic  
(For undergraduate and augmented programs)

Date

*Jeffrey M. C. C. C.*

March 29, 2019

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

Date



## Checklist for SUC/SGRC Reviewer Feedback

### Quality Assurance Office

**Two-Year Progress Report: Geography and Geomatics (BES), Master of Climate Change (MCC) and Master of Tourism (MA)**

**Name of Reviewer: Nathan C. Funk**

**Date: 11/3/2020**

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#### **Does the Two-Year Progress Report:**

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

#### **General Comments**

**The progress report offers a clear, substantive, and convincing account of progress made in responding to the recommendations of the external reviewers. Statements concerning completed measures as well as issues that warrant continued monitoring are credible, and address changes that have occurred since the current review cycle began.**



# Final Assessment Report

## Bachelor's in Global Business and Digital Art (BGBDA) and Master's in Digital Experience Innovation (MDEI)

### October 2020

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#### Executive Summary

External reviewers found that the programs (BGBDA, MDEI) delivered by the Stratford School of Interaction Design & Business were in good standing.

*"As the external reviewers we found that these programs are in overall good standing. The undergraduate Bachelor's in Global Business and Digital Arts (BGBDA) is an excellent program, managing a complex interdisciplinary curriculum which leads to a very high job placement one year after graduation (above 92%). The Masters in Digital Experience Innovation (MDEI) is also in overall good standing [...]."*

A total of 16 recommendations, touching on curriculum development, student life, and improving the nature of the satellite campus, were provided by the reviewers. In response, the program created a plan outlining the specific actions proposed to address each recommendation as well as a timeline for implementation. The next cyclical review of these programs is scheduled for 2025-2026.

#### BGBDA: First Year Enrolment

2017/18	191
2016/17	162
2015/16	123

#### MDEI: New Enrolment

2017/18	26
2016/17	18
2015/16	28

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#### Background

In accordance with the University of Waterloo's Institutional Quality Assurance Process (IQAP), this final assessment report provides a synthesis of the external evaluation and the internal response of the programs (BGBDA, MDEI) delivered by the Stratford School of Interaction Design & Business. A self-study (Volume I, II, III) was submitted to the Associate Vice-President, Academic and Associate Vice-President, Graduate Studies and Postdoctoral Affairs on September

17, 2018. The self-study (Volume I) presented the program descriptions and learning outcomes, an analytical assessment of the programs, including the data collected from a student survey, along with the standard data package prepared by the Office of Institutional Analysis & Planning (IAP). The CVs for each faculty member with a key role in the delivery of the program(s) were included in Volume II of the self-study.

From Volume III, two arm's-length external reviewers were selected by the Associate Vice-President, Academic and/or Associate Vice-President, Graduate Studies and Postdoctoral Affairs: Dr. James Nadler, Professor and Chair, School of Creative Industries, Ryerson University, and Dr. Stanley Reucker, Professor, Department of Art and Design, University of Illinois.

Reviewers appraised the self-study documentation and conducted a site visit to the University on December 3-4, 2018. An internal reviewer from the University of Waterloo, Dr. Bill Power, Associate Professor and Chair, Department of Biology, was selected to accompany the external reviewers. The visit included interviews with the Vice-President, Academic & Provost; Associate Vice-President, Academic and Associate Vice-President, Graduate Studies and Postdoctoral Affairs; Dean of the Faculty of Arts; Director and Associate Directors of the Stratford School; as well as faculty members, staff and current students. The Review Team also had an opportunity to meet with representatives from the Library and Co-operative Education.

This final assessment report is based on information extracted, in many cases verbatim, from the self-study, the external reviewers' report and the program response.

### **Program characteristics**

**Bachelor of Global Business and Digital Arts (BGBDA):** BGBDA is a four-year, direct entry program that combines creativity, technology and business competencies. Students spend the first year at the main University of Waterloo campus and then take all required courses and electives at the Stratford School in years two, three, and four. The combination of digital media and global business has opened up new global markets and business opportunities, but also entails a complex network of political, ethical, environmental, and ultimately humanistic concerns. Given the need to develop thoughtful and critically-informed citizens of a global digital culture, BGBDA provides students with a combination of global awareness and digital design skills that will position them as mindful leaders and transformers of 21<sup>st</sup> century business, government, and culture.

### **Master of Digital Experience Innovation (MDEI):**

MDEI is a one-year (full-time) or two-year (part-time) professional degree targeting recent graduates as well as mid-career professionals. The MDEI program offers a unique combination of creativity, technology and business in one professional degree that allows students to:

- Develop team and project management skills, as well as leadership skills
- Connect with industry mentors and work on major projects from concept to completion
- Gain basic technical skills of digital products and implementation
- Enjoy a flexibility of full-time or part-time studies, with courses offered in the early evenings

### **Summary of strengths, challenges and weaknesses based on self-study**

#### **Strengths**

- The Global Business and Digital Arts program has seen unanticipated growth. When the program was launched, the estimated annual intake was 60 students. This target has been exceeded year over year. The current target is 180 students (150 domestic and 30 international).
- The mandatory internship for BGBDA students between the third and fourth year is one of the highlights of the program because they are able to gain valuable professional experience.
- The job placement rate for MDEI graduates one-year post-graduation is 92% of graduates are successful in finding employment in their field. This indicator serves to confirm that students are able to successfully complete the program and be career-ready.

#### **Challenges**

- Creating an undergraduate student community in Stratford has been a challenge in that students are reluctant to relocate to Stratford after their first year of study.
- MDEI is deemed a professional degree program and, thus, MDEI students have been historically excluded from the internal applicant pool for Ontario Graduate Scholarships. This is problematic because MDEI is a course-based Master's program like many course-based Master's programs in the Faculty of Arts.
- The Stratford Campus does not have a dedicated graduate student space, though effort is made to schedule the MDEI classes on the third floor of the building in order to afford graduate students the option of using the collaborative space and project rooms on that floor.

### **Summary of key findings from the external reviewers**

The external reviewers found that these programs are in overall good standing. The undergraduate Bachelor's in Global Business and Digital Arts (BGBDA) is an excellent program, managing a complex interdisciplinary curriculum which leads to a very high job placement one year after graduation (above 92%). The Masters in Digital Experience Innovation (MDEI) is also in overall good standing, although there seems to be some frustration reported by the faculty about

whether the program is providing the career acceleration its candidates seek. On the other hand, the Master's candidates seemed quite satisfied with the MDEI.

The School's faculty and staff exhibit admirable comradery and passion for the two programs and their students. It was an important and positive step for the Stratford campus to obtain the status of a School in the Faculty of Arts. This will allow the School to continue to develop its faculty, research capability and impact and curriculum. The academic progression of a student through both the BGBDA and MDEI is highly prescribed but, at the same time, very clear.

In the eyes of the external reviewers, the top priority that the School should address is how to best deal with the issues and challenges arising from the School being a satellite campus in the smaller tourism-based center of Stratford. It is a 40-45 minute commute to the main campus of the University of Waterloo and employment and co-op opportunities in Kitchener / Waterloo, and about two hours from Toronto.

### **Program response to external reviewers' recommendations**

#### **Recommendations**

1. Transportation for students needs to be improved from Waterloo. Since the cancellation of the Greyhound line there is no public transportation service between Kitchener-Waterloo and Stratford. The proposed addition of a GO-Bus service would make a significant difference.

#### **Response**

Students who reside in Stratford have expressed a feeling of isolation and lack of transportation to travel back to Waterloo for academic and other purposes. There is a regular shuttle service to/from Stratford and Waterloo on Fridays. However, the School now runs additional small shuttle buses from Stratford to Waterloo and back on Wednesdays and Sundays.

The City of Stratford is actively pursuing a partnership with Metrolinx to begin GO Train service to/from Stratford. This would benefit not only our campus population, but also the greater Stratford community. The City of Stratford is also investigating the possibility of adding three new bus routes; one of these will provide transportation between Kitchener/Waterloo and Stratford. It is hoped that these routes will be implemented in April 2020, providing students and faculty an additional method of transportation between the cities. Though neither of these solutions address the transportation issue fully, they are a step in the right direction for our student community.

2. As many students will continue to commute from Waterloo, avoid wherever possible the scheduling of evening classes especially in winter term. This is a safety issue as the backroads are treacherous in the snowbelt. Faculty members report that their cars often left the road for the ditch in the winter. Currently, only one faculty member lives in Stratford and the others split their time between the Stratford campus and the departments at Waterloo where they are cross-appointed.

**Response**

In the past, the programs have been small enough to avoid scheduling evening classes. However, more recently, evening classes are necessary to accommodate the growing number of students. The School will continue to monitor the scheduling of evening classes during the Winter term.

As of fall 2019, all undergraduate and graduate students, except for first year students, will be at the Stratford School full-time. Students will take required courses and electives at the Stratford School. We are confident that this will contribute to a positive change in the student culture and a greater buy-in by students to reside in Stratford.

Since undergraduate students spend their first year of their program at the University of Waterloo campus, it was never feasible to build a student residence in Stratford. However, the School has been actively working with a private developer who will complete attractive and affordable student living in close proximity to the campus by winter 2020. A significant number of students have expressed interest in renting accommodation in this new space.

As of fall 2020, there will also be a total of 100 new beds added to the off-campus housing inventory in Stratford. Currently, Stratford has its own menu tab on the UW off-campus housing website to ensure that residence options are advertised to students.

Concerns about road conditions voiced by faculty members will also be addressed through the careful monitoring of scheduling evening classes.

3. Improve the administrative connection with the Waterloo main campus. Students and faculty seem to have a sense of isolation. In other words, recognize and fully accommodate the satellite nature of the school.

**Response**

The School believes that obtaining the status of a School within the Faculty of Arts (as of July 1, 2018) will foster clearer, stronger, and well-defined connections with the Faculty of Arts and the central administration at UW. Establishing Stratford as a School has removed

ambiguity and lack of clarity for those in charge of the Stratford School. Previously, the Stratford Programs were not administered or delivered by an academic unit, such as a department or a school. Therefore, aspects of administration fell outside of university policy and were problematic to handle. Creating a distinct administrative unit gives faculty and students an increased sense of belonging to a community and might decrease the sense of isolation.

4. Establish a Program Advisory Board drawn from industry and government of experts who could serve as program advisors, employers, and potential donors. This will help the programs avoid falling behind industry trends.

#### **Response**

The suggestion to establish an advisory board drawn from industry, government and faculty experts is very much appreciated. The School agrees with the reviewers that such a body would help us identify gaps and weaknesses in the program in order to avoid falling behind industry trends. We will establish a Program Advisory Board that will consist of a small group of interested industry, government and faculty experts who will meet annually to address specific curricular questions pertaining to the undergraduate and graduate programs.

5. Develop program outcomes that are explicitly keyed to individual course learning outcomes and deliverables: a course mapping exercise. The Center for Teaching Excellence can help to organize this. Tie this back to the messaging of the program. We suggest that the School consider specific program outcomes for MDEI and how they differ from the undergraduate program.

#### **Response**

Although the learning outcomes for both programs are expressed quite well, what is lacking is a clear definition of learning goals. The School is aware of this gap and has made the articulation of learning goals for BGBDA a priority for the School's curriculum committee. The curriculum committee conducted one session led by the Center for Teaching Excellence to begin the process of defining learning outcomes that are specifically keyed to individual course learning outcomes and deliverables, which are defined in individual course syllabi. The curriculum committee then continued to meet to complete this task (see Appendix A).

For MDEI, we established an ad-hoc committee that accomplished the same task (see Appendix B).

6. We appreciate that the School conducted a major curricular review two years ago. Allow the current curricular changes of two years ago to play out and be analyzed for a year or two before tackling any further major changes.

**Response**

As discussed in recommendation 5, the program has developed detailed learning outcomes that are tied to the deliverables of the program (see Appendix A). Curricular changes made two years ago will be re-analyzed in two years' time, before any other major changes will be made.

7. We suggest that the School strongly consider, if at all possible, extending the summer internship into a full co-op option.

**Response**

Both reviewers felt very strongly about extending the one-term internship for BGBDA students into a full co-op option. BGBDA students consider the mandatory internship between their third and fourth year as one of the highlights of the program because they are able to gain valuable professional experience. The School agrees that in order to enhance the experiential learning experience for students, creating a full co-op option would be highly beneficial for the program and the students for the following reasons:

- post-degree employability and personal awareness vis-à-vis the workplace;
- enhanced professional development education: with a minimum of three co-op terms, students would be able to experiment with more than one potential career path providing them with a much clearer idea of the future direction they wish to take post-graduation;
- employer demand: a recent employer survey showed that employers seek BGBDA students for more than one term, citing the unique skill set that these students bring;
- recruitment: co-operative education is UW's brand. Adding a full co-op option to BGBDA would attract even higher numbers of outstanding applicants to the program.

The CEE is currently working on a feasibility study with the aim of implementing this change for the 2021-2022 academic year (see Appendix C for summary of Co-op proposal).

8. Continue to expand the business side of the curriculum, especially dealing with finance.

**Response**

An introductory course in business financials (GBDA 311) has been added to the BGBDA curriculum and will be offered for the first time in the 2020-2021 academic year.

9. Explore opening up more electives to allow students to specialize more than is currently possible in a highly prescribed undergraduate program. We would suggest allowing undergraduates in third year be allowed to take two or three electives within BGBDA. This would allow those interested students to explore business or design in more depth.



**Response**

As part of the new curriculum that launched in 2018-19, BGBDA students will be offered one elective in 2019-20, steadily increasing the number to 3-5 electives per term, open to all BGBDA students. BGBDA students will have the opportunity to take four more electives in their upper years, in addition to the electives taken in first year. This will allow students to pursue academic interests outside of their required courses and/or pursue a minor in a different field.

10. In new tenure track hires, try to recruit faculty with formal training in Design.

**Response**

The reviewers strongly suggested strengthening our faculty expertise in Design. This would require the addition of a minimum of one new tenure-track position to the existing faculty complement. This position has been approved by the Provost and will be in place in July 2020.

11. Do an inventory on what services would be important for Stratford campus and do those right. For example, does Stratford need some kind of food bank for its students?

**Response**

The reviewers recommended conducting a complete inventory of needed services for the Stratford School. This process has been launched and will be finalized by mid-2020 with recommendations for student services and an implementation plan.

12. Find some way to provide an introduction of the students to the library. Reinstate library services as part of the orientation program for both undergraduates and masters students. Increase classroom invitations to librarians; explore some librarian office hours on site.

**Response**

The School will continue to work with Dana Porter Library to provide opportunities for our students to visit the library facilities. There are no plans to have an onsite librarian at the Stratford School. However, library visits and tours are encouraged during Orientation for incoming students.

13. Increase on-site hours for student counselors.

**Response**

The School is currently in conversation with Counselling Services to increase the presence of counselling from one to two counsellors at the Stratford School.

14. We encourage the School to arrange new spaces for classes, accommodation, and student life. For example, we suggest that the University could support the creation of local student clubs, and provide them with space. Provide or support student events that might also attract other students from main campus. We recognize and appreciate that the School and University are already planning to rent more space in Stratford for these purposes and working with a private developer to build apartment spaces appropriate for the students and that can compete with quality of rental accommodation available in Waterloo.

**Response**

In addition to the added space that will be available in fall 2019, the reviewers recommend that the University support the creation of local student clubs, and provide students with the necessary space. It is also important to attract students from main campus to Stratford for events. One of our staff members has taken on the responsibility of creating a more vibrant student community. In addition, the GBDA student society has been given a dedicated space at the Stratford School. Recently, students have created the Creators Collective, which is a student-led initiative, where students curate their own digital artwork on the first floor of the Stratford School. The first exhibit drew 150 attendees from the Stratford School and beyond. The Stratford School administration is in full support of this initiative and staff assist students with the logistics of mounting the annual exhibit. The program plans on building on this successful event, which is the responsibility of the staff person in charge. We will also connect with colleagues on main campus regarding increased student support at the Stratford School.

15. For the MDEI candidates, we suggest establishing some course work and formal networking opportunities in Toronto.

**Response**

The current program is restricted in impact by its location in Stratford because the target learners for the part-time option of MDEI are professionals, at the mid-career stage, who typically are employed full-time. For this type of learner, it is often difficult to physically travel to the Stratford campus twice a week to attend class. Instead of establishing course work and formal networking opportunities in Toronto, we are in the process of developing a hybrid version of the MDEI program that will provide these students with greater flexibility in their schedule. Indeed, the reviewers suggested to teach courses such as DEI612 “Working in Teams” on campus and moving the other courses online. As part of this hybrid program, students will benefit from two short intensive bootcamps/workshops (Intensives) interspersed with online instruction. The first four weeks of DEI612 have been incorporated into the first Intensive. The ad-hoc committee for MDEI is currently working on completing their plan and roll-out schedule for the MDEI online program.

In addition, instead of the MDEI annual fieldtrip we will use this budget to allow our students to attend a relevant conference, such as TrueNorth in KW or an appropriate conference/event in Toronto.

16. Consider development of a research masters and PhD to enrich the curriculum and extend the reach of the program.

**Response**

Changing the on-campus MDEI program to a hybrid delivery model will allow more space for a research Master's and PhD program. We will begin the development process of these new programs in December 2019 and expect to have a draft brief by summer 2020.

## Implementation Plan

	Recommendations	Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
1.	Transportation for students needs to be improved from Waterloo. Since the cancellation of the Greyhound line there is no public transportation service between Kitchener-Waterloo and Stratford. The proposed addition of a Go-Bus service would make a significant difference.	<ul style="list-style-type: none"> <li>Increased shuttle service</li> <li>Create partnership with Metrolinx</li> </ul>	Director, Stratford School Dean of Arts  City of Stratford	Complete – shuttle service added on Wednesdays and Sundays. Regular service available on Fridays.  Metrolinx pilot project will launch in spring 2020.
2.	As many students will continue to commute from Waterloo, avoid wherever possible the scheduling of evening classes especially in winter term. This is a safety issue as the backroads are treacherous in the snowbelt. Faculty members report that their cars often left the road for the ditch in the winter. Currently, only one faculty member lives in Stratford and the others split their time between the Stratford campus and the departments at Waterloo where they are cross-appointed.	<ul style="list-style-type: none"> <li>Move courses to the Stratford School</li> <li>Add privately developed student accommodation</li> </ul>	Director, Stratford School  Director, Stratford School	Complete – effective Fall 2019, all students (except for 1 <sup>st</sup> year students) will be in Stratford full time.  Fall 2019
3.	Improve the administrative connection with the Waterloo main campus. Students and faculty seem to have a sense of isolation. In other words, recognize and fully accommodate the satellite nature of the school.	<ul style="list-style-type: none"> <li>Establish stronger administrative connection with main campus</li> </ul>	Dean of Arts Director, Stratford School	Complete – effective July 1, 2018, the Stratford School of Interaction Design & Business obtained official status as a School.
4.	Establish a Program Advisory Board drawn from industry and government of experts who could	<ul style="list-style-type: none"> <li>Establish a Program Advisory Board</li> </ul>	Director, Stratford School	First meeting planned for fall 2020

	serve as program advisors, employers, and potential donors. This will help the programs avoid falling behind industry trends.			
5.	Develop program outcomes that are explicitly keyed to individual course learning outcomes and deliverables: a course mapping exercise. The Center for Teaching Excellence can help to organize this. Tie this back to the messaging of the program. We suggest that the School consider specific program outcomes for MDEI and how they differ from the undergraduate program.	<ul style="list-style-type: none"> <li>Articulate program outcomes and learning goals</li> </ul>	Director, Stratford School Centre for Teaching Excellence Curriculum committee	Complete – GBDA Learning Outcomes  Complete – MDEI Learning Outcomes
6.	We appreciate that the School conducted a major curricular review two years ago. Allow the current curricular changes of two years ago to play out and be analyzed for a year or two before tackling any further major changes.	<ul style="list-style-type: none"> <li>Conduct review of impact of curriculum changes</li> </ul>	Director, Stratford School Curriculum committee	2022-2023
7.	We suggest that the School strongly consider, if at all possible, extending the summer internship into a full co-op option.	<ul style="list-style-type: none"> <li>Introduce full co-op option for BGBDA</li> </ul>	Director, Stratford School CEE	2021-2022
8.	Continue to expand the business side of the curriculum, especially dealing with finance.	<ul style="list-style-type: none"> <li>Offer introductory course in business financials (GBDA 311)</li> </ul>	Director, Stratford School	2020-2021
9.	Explore opening up more electives to allow students to specialize more than is currently possible in a highly prescribed undergraduate program. We would suggest allowing undergraduates in third year be allowed to take two or three electives within BGBDA. This would allow those interested students to explore business or design in more depth.	<ul style="list-style-type: none"> <li>We will offer one elective in 2019-20, steadily increasing the number to 3-5 electives per term.</li> </ul>	Director, Stratford School Curriculum committee	2019-2020

10.	In new tenure track hires, try to recruit faculty with formal training in Design.	<ul style="list-style-type: none"> <li>Hire one faculty in Design</li> </ul>	Director, Stratford School Dean of Arts, SACA	July 1, 2020
11.	Do an inventory on what services would be important for Stratford campus and do those right. For example, does Stratford need some kind of food bank for its students?	<ul style="list-style-type: none"> <li>Conduct inventory of needed services</li> </ul>	Administrative Officer	winter 2020
12.	Find some way to provide an introduction of the students to the library. Reinstate library services as part of the orientation program for both undergraduates and masters students. Increase classroom invitations to librarians; explore some librarian office hours on site.		Administrative Officer	winter 2020
13.	Increase on-site hours for student counselors.	<ul style="list-style-type: none"> <li>Increase the presence of counseling from 1 to 2 counsellors</li> </ul>	Director, Stratford School Counselling Services	winter 2020
14.	We encourage the School to arrange new spaces for classes, accommodation, and student life. For example, we suggest that the University could support the creation of local student clubs, and provide them with space. Provide or support student events that might also attract other students from main campus. We recognize and appreciate that the School and University are already planning to rent more space in Stratford for these purposes and working with a private developer to build apartment spaces appropriate for the students and that can compete with quality of rental accommodation available in Waterloo.	<ul style="list-style-type: none"> <li>Hire one staff member to oversee and coordinate the creation of local student clubs, student-run initiatives (on hold)</li> <li>Reorganization of staff members to allocate more to this role</li> </ul>	Director, Stratford School Administrative Officer Dean of Arts	fall 2020

15.	For the MDEI candidates, we suggest establishing some course work and formal networking opportunities in Toronto.	<ul style="list-style-type: none"> <li>• Develop hybrid online/on campus MDEI</li> <li>• Allocate budget for students to attend relevant conferences (e.g., TrueNorth in KW or other conferences/events in Toronto)</li> </ul>	Director, Stratford School Curriculum committee Administrative Officer	In progress, implementation planned for 2021-22
16.	Consider development of a research masters and PhD to enrich the curriculum and extend the reach of the program.	<ul style="list-style-type: none"> <li>• Changing the on-campus MDEI program to a hybrid delivery model would also allow us to create space for a research Master's and PhD program.</li> </ul>	Director, Stratford School, Curriculum committee	In progress

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

Date of next program review

2025-26

Date

Signatures of Approval



November 17, 2020

Chair/Director

Date

AFIW Administrative Dean/Head (*For AFIW programs only*)

Date



Faculty Dean

Date: 27 November 2020

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

Associate Vice-President, Academic  
(For undergraduate and augmented programs)

Date

Associate Vice-President, Graduate Studies and Postdoctoral Affairs

Date



(For graduate and augmented programs)

## Appendix A

### Bachelor of Global Business and Digital Arts

#### Program-Level Learning Outcomes

Graduates of the Bachelor of Global Business and Digital Arts (GBDA) will have developed and demonstrated a wide range of knowledge and skills. They will meet the Undergraduate Degree Level Expectations (UDLEs) formulated by the Ontario Council of Academic Vice-Presidents (OCAV) in:

1. Depth and breadth of knowledge
2. Knowledge of methodologies
3. Application of knowledge
4. Communication skills
5. Awareness of limits of knowledge
6. Autonomy and professional capacity

They will also meet the extended expectations of the University of Waterloo:

7. Experiential learning, and
8. Diversity

Our articulation of the learning goals of GBDA has been informed by the VALUE rubrics of the Association of American Colleges and Universities (AAC&U). Each of these rubrics was selected as especially relevant to GBDA and reviewed by a stakeholder in the meeting:

- Creative Thinking
- Critical Thinking
- Ethical Reasoning
- Global Learning
- Inquiry and Analysis
- Integrative Learning
- Intercultural Knowledge and Competence
- Foundations and Skills for Lifelong Learning
- Problem-Solving
- Quantitative Literacy
- Teamwork
- Written Communication

## 1. Depth and breadth of knowledge

*Graduates will demonstrate depth and breadth of knowledge in global business and digital arts, including:*

- a developed knowledge and critical understanding of the key concepts, methodologies, current advances, theoretical approaches and assumptions in global business and digital arts;
- a developed understanding of many of the major fields in global business and digital arts, including from an interdisciplinary perspective, and how the fields may intersect with fields in related disciplines;
- a developed ability to: i) gather, review, evaluate and interpret information; and ii) compare the merits of alternate hypotheses or creative options, relevant to one or more of the major fields in global business and digital arts;
- a developed, detailed knowledge of and experience in research in an area of global business and digital arts;
- developed critical thinking and analytical skills inside and outside global business and digital arts;
- the ability to apply learning from one or more areas outside global business and digital arts.

*The learning goals around depth and breadth of knowledge specific to GBDA are that students should be able to:*

- engage in thorough market and user research in order to synthesize data into usable knowledge;
- develop an understanding of customer and user needs in the marketplace for the purpose of revealing problems that could be solved;
- combine existing approaches to the understanding of what global customers and users value in the marketplace;
- demonstrate empathy in the planning, designing and execution within product/service development with a focus on the interactions of global customers and users in the marketplace;
- seek out and develop expert perspectives on design solutions;
- develop creative propositions and solutions that take into account market research and user needs;
- utilize interdisciplinary perspectives to develop technological solutions for clearly understood global problems;

## 2. Knowledge of methodologies

*Graduates will demonstrate an understanding of methods of inquiry and creative activity in global business and digital arts that enable them to:*

- evaluate the appropriateness of different approaches to solving problems using well established ideas and techniques;
- devise and sustain arguments or solve problems using these methods;
- describe and comment on particular aspects of current research or equivalent advanced professional practice.

*The learning goals around the knowledge of methodologies specific to GBDA are that students should be able to:*

- combine and synthesize existing ideas, images, or expertise in original ways, and work in imaginative ways characterized by a high degree of innovation, divergent thinking, and risk taking:
  - evaluate creative processes and products using domain appropriate criteria
  - solve problems, recognize the consequences of the solution and articulate the reasons for choosing that solution
  - embrace contradictions, integrating alternate, divergent, or contradictory perspectives or ideas fully
  - think innovatively, extending a novel or unique idea, question, format, or product in order to create new knowledge or knowledge that crosses boundaries
  - connect, synthesize, and transform ideas or solutions into entirely new forms
- explore issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion:
  - state an issue clearly and describe it comprehensively
  - thoroughly, systematically and methodically analyse their own and others' assumptions and carefully evaluate the relevance of context when presenting a position
  - select a specific position, perspective, thesis, or hypothesis that is imaginative and takes into account the complexities and points of view inherent to the issue
  - draw logical conclusions and related outcomes that reflect an informed evaluation and an ability to place evidence and perspectives discussed in priority order
- produce informed conclusions and judgements:
  - identify an object of research that addresses significant yet previously less explored aspects and synthesize gathered research representing various points of view and approaches
  - design an appropriate methodology or theoretical framework
  - organize and synthesize evidence to identify insightful patterns, differences, or similarities related to object of research
  - state a conclusion that is a logical extrapolation from the inquiry findings
- reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations:
  - accurately read and understand information presented in mathematical forms, charts, graphs and geometric figures
  - make appropriate inferences based on information presented in mathematical forms
  - visualize relevant information into various mathematical forms such as equations, graphs, diagrams, tables, or words, in a way that contributes to a further or deeper understanding
  - evaluate assumptions and draw appropriate conclusions based on the quantitative analysis of data, while recognizing the limits of this analysis
  - explicitly describe assumptions and provide a compelling rationale for why each assumption is appropriate
  - communicate quantitative evidence in support of an argument effectively
- design, evaluate, and implement a strategy to answer an open-ended problem or achieve a desired goal:

- identify and construct a clear and insightful problem statement that takes into account evidence of relevant contextual factors
- ideate alone and with others to identify multiple approaches for solving the problem
- propose one or more solutions or hypotheses sensitive to contextual factors and the ethical, logical, and cultural dimensions of the problem
- evaluate potential solutions, deeply and thoroughly considering the history of the problem, reviewing the logic or reasoning, examining the feasibility, and weighing the impact of the solutions
- implement and evaluate a solution in a manner sensitive to the multiple contextual factors of the problem

### 3. Application of knowledge

*Graduates will demonstrate an ability to apply their knowledge of global business and digital arts:*

- demonstrate the ability to review, present and critically evaluate qualitative and quantitative information;
- develop lines of argument;
- make sound judgments in accordance with the major theories, concepts and methods of global business and digital arts;
- apply underlying concepts, principles, and techniques of analysis, both within and outside global business and digital arts;
- demonstrate the ability to use a range of established techniques to:
  - initiate and undertake critical evaluation of arguments, assumptions, abstract concepts and information
  - propose solutions
  - frame appropriate questions for the purpose of solving a problem
  - solve a problem or create a new work
- demonstrate the ability to make critical use of scholarly reviews and primary sources.

*The learning goals around the application of knowledge specific to GBDA are that students should be able to:*

- apply the industry-standard digital tools and platforms to their work;
- synthesize methodologies and approaches learned in the classroom, during the internship or while studying abroad into applied skills for employment;
- ascertain how different cultures and businesses respond to an action;
- determine the viability of appropriate business models for economic transactions;
- develop skills and technical knowledge pertaining to digital storytelling, including storyboarding and narrative development, using industry standard software and equipment through both practice and self-directed learning;
- understand the complexity of the relationship between digital technologies and the communities that employ those technologies and shape the scale and nature of their diffusion through society;
- develop an understanding of “digital culture” and the implications it has on our cultural lives;

## 4. Communication skills

*Graduates will demonstrate the ability to communicate information, arguments, and analyses accurately and reliably, in the many modalities of global business and digital arts, including orally, in writing, and visually to a range of audiences.*

- demonstrate a thorough understanding of context, audience, and purpose that is responsive to the assigned task and focuses on all elements of the work;
- use appropriate, relevant, and compelling content to explore ideas within the context of global business and digital arts;
- demonstrate detailed attention to and successful execution of a wide range of conventions particular to a specific project and medium including organization, content, presentation, formatting, and stylistic choices;
- use graceful and accurate language that skillfully communicates meaning to readers with clarity and fluency.

*The learning goals around the application of knowledge specific to GBDA are that students should be able to:*

- fulfil assignments by choosing a format, language, graphic or other visual representation in ways that enhance meaning, making clear the interdependence of language and meaning, thought, and expression;
- demonstrate mastery of the narrative techniques of storytelling that connect with your audience;
- design visuals to communicate quantitative information clearly and accurately for specialist and generalist audiences;
- express themselves clearly and expressively, formally and informally, in multiple media;
- integrate multiple media of expression for convincing storytelling;
- present project proposals, design research, and project outcomes, orally and with industry-standard presentation tools;
- articulately defend their design decisions to peers, leadership, and clients.

## 5. Awareness of limits of knowledge

*Graduates will demonstrate an understanding of the limits to their own knowledge and ability, and an appreciation of the uncertainty, ambiguity and limits to knowledge and how this might influence analyses and interpretations.*

*The learning goals around an awareness of limits of knowledge specific to GBDA are that students should be able to:*

- recognize the need to make reasonable assumptions in order to move forward;
- articulate the assumptions underlying a calculation, conclusion, design, or recommendation;
- recognize their own biases, cultural or otherwise;
- evaluate assumptions throughout the design process.

## 6. Autonomy and professional capacity

*Graduates will demonstrate autonomy and professional capacity. This includes:*

- qualities and transferable skills necessary for further study, employment, community involvement and other activities requiring:
  - the exercise of initiative, personal responsibility and accountability in both personal and group contexts
  - working effectively with others
  - decision-making in complex contexts.
- the ability to manage their own learning in changing circumstances, both within and outside the discipline and to select an appropriate program of further study;
- exercise academic integrity and social responsibility.

*The learning goals around autonomy and professional capacity specific to GBDA are that students should be able to:*

- learn independently:
  - explore a topic in depth
  - pursue knowledge and experiences outside the classroom
  - review prior learning and past experience, inside and outside the classroom, to establish a foundation for lifelong learning
  - apply prior learning and past experience to new situations.
- collaborate respectfully and effectively on interdisciplinary teams;
- demonstrate a professional work ethic individually and in teams: positive and productive team communication, consistently meeting deadlines, delegate and employ multiple production roles, and establish a pre and post-production workflow;
- reflectively evaluate one's own performance and examine skills that need improvement;
- follow agile processes and frameworks for team work, including contributing to team meetings, equitable collaboration, group organization, workflow management, and communication;
- respond to conflict directly and constructively;
- anticipate and clarify differences in specialist vocabulary between disciplines;
- stay current technically:
  - transfer skills from familiar digital tools and platforms to new versions or variants
  - learn the use of common digital tools and platforms with self-guided tutorials and minimal coaching
  - learn the use of emerging digital tools and platforms with coaching and applied practice.
- behave ethically:
  - recognize ethical issues when they emerge in complex, multilayered global, business, and creative contexts
  - independently apply ethical concepts and consider the full implications of that application.

## 7. Experiential learning

*At the University of Waterloo, we also expect graduates to be able to articulate their learning from experiential or applied opportunities.*

*The learning goals around experiential learning specific to GBDA are that students should be able to:*

- meaningfully synthesize connections among experiences outside the formal classroom (including life experiences and academic experiences such as internships and travel abroad) to deepen understanding of global business and digital arts and to broaden their own points of view;
- evaluate changes in their own learning over time;
- adapt and apply skills, abilities, theories, or methodologies gained in one situation to new situations;
- develop an understanding of complexity through active engagement and study of subjects through real world contexts;
- develop ideas and theories by actively engaging with digital media and design objects;

## 8. Diversity

*At the University of Waterloo, we also expect graduates to demonstrate an understanding of the intellectual, social, cultural, and political diversity of the world in which we live.*

*The learning goals around diversity specific to GBDA are that students should be able to:*

- contribute effectively on diverse teams:
  - collaborate respectfully with diverse others
  - facilitate the contributions of diverse others
  - negotiate a common understanding of the project goals and planning
- demonstrate and apply an understanding of cultural differences to their work
  - demonstrate cultural self-awareness:
  - demonstrate an understanding of the complexity of elements important to members of another culture
  - interpret intercultural experience from the perspectives of their own and more than one worldview
  - demonstrate the ability to act in a supportive manner that recognizes the feelings of another cultural group
  - recognize cultural differences in verbal and nonverbal communication and applies that knowledge to their behaviour and their work
  - ask complex questions about other cultures, seek answers, and apply that knowledge to their behaviour and their work
  - initiate and develop interactions with culturally different others
  - suspend judgement in valuing their interactions with culturally different others.
- seek to understand how their actions affect both local and global communities:
  - evaluate the global impact of their own and others' specific local actions on the natural and human world

- evaluate and apply diverse perspectives to complex subjects within natural and human systems in the face of multiple and even conflicting positions
- adapt and apply a deep understanding of multiple worldviews, experiences, and power structures while initiating meaningful interaction with other cultures to address significant global problems
- take informed and responsible action to address ethical, social, and environmental challenges in global systems and evaluate the local and broader consequences of individual and collective interventions
- examine the historical and contemporary roles, interconnections, and differential effects of human organizations and actions on global systems within the human and natural worlds
- apply knowledge and skills to implement sophisticated, appropriate, and workable solutions to address complex global problems using interdisciplinary perspectives independently or with others.



## Appendix B

### Master of Digital Experience Innovation Program-level Learning Objectives

#### Summary

In the Master of Digital Experience Innovation (MDEI) program, we explore new forms of design innovation that emerge through the intersections between business and digital technologies. We use applied management to solve complex challenges through human-centred approaches to design, and interdisciplinary, forward-thinking modes of collaboration. Working with partners outside the university, we use creative leadership to develop innovative solutions for industry.

#### Guiding Principles

The MDEI program is organized around two organizational pillars: Applied Management and User Experience (UX) Design and User Research.

- **Applied Management** critically examines business management practices and implements innovative strategies to streamline or improve them.
- **UX Design and User Research** focus on understanding the needs of users and developing empathic design solutions to address their needs.

#### Overall Learning Objectives

1. Develop a *theoretical* and *practical* understanding of innovation in marketing, business strategy, UX design, and digital media.
2. Conceptualize the relationships between innovation, creativity, customer insight, strategy and customer experience that are relevant in contemporary business and institutional practice.
3. Design, prototype, and evaluate innovative, forward-thinking human-centred design solutions to empathically address the needs, desires, and abilities of different audiences.

#### Learning Objectives - Applied Management

1. Formulate problems: Students will develop a theoretical and practical understanding of evaluating current external business markets, and internal management practices, in order to understand problem spaces and establish where opportunities to innovate exist.
2. Design solutions: Students will use emerging technologies, and original research to generate innovative ideas, for existing companies, in order to create business plans and roadmaps, that enable firms to better meet customer needs and improve shareholder value.
3. Deliver solutions: Students will produce a project plan, and a proof of concept, focused on improving business practices that will deliver a superior customer experience and result in greater performance on key success factors relevant to the competitive landscape of the firm.

#### Learning Objectives - UX Design and User Research

1. Identify the needs, desires, and abilities of different people using design thinking to create technological solutions that address these.
2. Design and prototype solutions using a variety of physical and digital assets.
3. Design and implement user tests to gather information, validate design decisions, and generate insights.
4. Assess the impact of design using a variety of evaluation methods.

## Appendix C

### Bachelor of Global Business and Digital Arts (GBDA) Co-op

#### 1. Summary

##### *Current state:*

GBDA students are required to complete a one-term internship as a mandatory graduation milestone, taking place in the spring term following the completion of their 3b term. Over the course of 12 to 16 weeks (between May 1<sup>st</sup> and August 31), students work a 35 to 40-hour week at an approved organization earning an average hourly wage of \$20/hr. Cooperative and Experiential Education (CEE) facilitates the GBDA internship Recruitment Cycle for GBDA students. Students gain limited professional experience in the areas of digital media, including UX/UI, visual/product design, digital marketing, graphic design, social media, project management, product development, etc., as well as business experience in general.

##### *Rationale for proposed change:*

- The Honors Bachelor of Global Business and Digital Arts program (GBDA) is an industry-facing program in the sense that students explore the methods, meanings, impacts, and futures of digital and interaction design in heterogeneous global business contexts with the ultimate goal of developing solutions for industry. Although the one-term internship provides a valuable experiential learning experience to GBDA students, it is a very limited experience. With an additional three work terms and an enhanced professional development education through the required WatPD courses, our students will have more opportunities to apply their competencies throughout their program, and not only for one term before their final year of study. This change will increase post-degree employability and personal awareness vis-à-vis the workplace.
- Students consider the mandatory internship between their third and fourth year as one of the highlights of the program because they are able to gain valuable professional experience. With more than one work term, students will be able to experiment with more than one potential career path providing them with a much clearer idea of the future direction they wish to take post-graduation. For example, currently a student may be employed as a web designer or a user experience specialist for their internship. Thanks to the interdisciplinary nature of the program, students also acquire knowledge in areas such as project management, interaction design, marketing and other fields. Given the opportunity of additional work terms, a student might discover a particular professional interest in more than one field, which would impact their career choice in a significant way.
- Additional work terms would also add to fundamental business experience which would be an asset for future employability.

- While we do not have firm data on employer recommendations, we have a strong indication through anecdotal evidence that many of our employers are asking for students every term, not just in the summer.

## 2. Requirements

- All GBDA requirements as per Calendar
- PD1, Co-op Fundamentals, and PD12, Reflection and Learning (Work term 1)
- Two PD electives (<http://www.ucalendar.uwaterloo.ca/1920/COURSE/course-PD.html>)
- Work term reports/Reflections for Work terms 2,3,4 will be covered by the completion of the PD courses (new as of 2023/24)

## 3. Work and academic term sequence

After consultation with CEE, we are proposing the following streams:

	F21	W22	S22	F22	W23	S23	F23	W24	S24	F24	W25	S25	F25
	1A	1B	Off	2A	2B	3A	WT	3B	WT	4A	WT	WT	4B

A minimum of three co-op terms are required for graduation. We have scheduled four co-op terms in order to provision for one unsuccessful co-op term. The first work-term is scheduled for the term following the 3A term; this will allow students to have the spring term between year 1 and 2 off and will allow them to study abroad in their 4A term between two work terms.

## 4. Enrollment

GBDA is technically capped at 180 students, but we currently have an annual intake of 200 students. This proposal is based on an intake of 200 students.

## 5. Implications for the current curriculum and faculty/staff resources

Courses: Currently, students who fail a required GBDA course, often have to wait two terms (winter, spring or spring, fall) to retake the failed course because all required courses are only offered once per academic year. In order to help students move through the program as seamlessly as possible, we will encourage those who might have failed a course to accept 4-month co-op jobs until they have the opportunity to work for 8-months in work terms 3 and 4. This will reduce the number of students off-

sequence or having to sit out for a term or two. We are currently also in the process of identifying key courses that we will offer in more than one term per academic year in order to reduce the wait time for students who are looking to retake a failed course or who are off sequence for other reasons.

Administrative and advising support: Students will need advising in all three terms, which is and will be handled by the Associate Director, Undergraduate and the Advising Manager. Advisement will include information and support related to co-op requirements and options. As of 2023, all work term reports/reflections will be covered by the students' completion of PD courses. No additional support from the Stratford School will be required. In addition to the Advising Manager, the Stratford School currently has a part-time staff person for administrative support of the internship, who will transition to support co-op.

Employment development: in co-ordination with the CEE, the Stratford School assists in developing and cultivating relationships with prospective employers, which will help students secure suitable employment.

Space requirements: There is currently no on-site teaching in the spring term. With the introduction of co-op, we will be able to utilize the space better by offering courses in the spring term. Conversely, in the fall and winter terms, the Stratford School is at capacity. Moving to a schedule where we teach all three terms and have students on work terms will lighten the burden on the building.

All other resources will remain unchanged.

## 6. Process

- The Director met with the Associate Dean, Undergraduate, Kathy Acheson; Associate Dean for Co-operative Education and Planning, Bob Park; Associate VP, Academic, David DeVidi to discuss the plan.
- CEE is in the process of conducting a feasibility study that assesses employer availability and CEE resources relevant to the new plan. The feasibility study will be passed on to the Director and Associate Director, Undergraduate. It will be completed by December, 2019.
- The Director and Administrative Officer met with Amanda McKenzie from the Quality Assurance Office. Honours GBDA Co-op is a major modification to an existing plan (Honours GBDA) and therefore is subject only to internal approvals, rather than having to go to the Ministry.
- The Director and Administrative Officer met with IAP for fee assessments for co-op.
- The planned start date for Honours GBDA Co-op is September 2021.

- Please find below the course sequencing for students starting the program in fall 2021 (please note that previous cohorts will not be able to opt-into GBDA Co-op):

Honors GBDA Co-op 2021-2025			
	Fall	Winter	Spring
2021-2022	<ul style="list-style-type: none"> <li>• ARTS 130 Inquiry &amp; Communications</li> <li>• ECON 101 Intro to Microeconomics</li> <li>• Second Language</li> <li>• 2 Electives</li> </ul>	<ul style="list-style-type: none"> <li>• ARTS 140 Information &amp; Analysis</li> <li>• GBDA 101 Intro to Digital Media Design</li> <li>• Second Language</li> <li>• 2 Electives</li> </ul>	<i>Term off</i>
2022-2023	<ul style="list-style-type: none"> <li>• CS 105 Intro to Computer Programming 1</li> <li>• GBDA 201 Digital Media Project 1</li> <li>• GBDA 203 Introduction to Digital Culture</li> <li>• GBDA 210 Intro to User Experience Design</li> <li>• GBDA 228 Digital Imaging for Online Applications</li> </ul>	<ul style="list-style-type: none"> <li>• CS 106 Intro to Computer Programming 2</li> <li>• GBDA 202 Digital Media Project 2</li> <li>• GBDA 204 Working in Teams &amp; Project Management</li> <li>• GBDA 211 Introduction to Global Business</li> <li>• GBDA 212 Portfolio &amp; Professional Communication</li> </ul>	<ul style="list-style-type: none"> <li>• GBDA 301 Global Digital Project 1</li> <li>• GBDA 303 Data and Society</li> <li>• GBDA 304 Marketing in the Digital World</li> <li>• GBDA 305 Global Business &amp; Development</li> <li>• GBDA 311 Intro to Business Financials</li> </ul>
2023-2024	Work term 1	<ul style="list-style-type: none"> <li>• CS 330 Management Information Systems</li> <li>• GBDA 205 Quantitative Methods</li> <li>• GBDA 302 Global Digital Project 2</li> <li>• GBDA 306 Ethics and Values in Design</li> <li>• GBDA 310 Advanced User Experience Design &amp; Research</li> </ul>	Work term 2
2024-2025	<ul style="list-style-type: none"> <li>• GBDA 410 Seminar in User Experience Research</li> <li>• GBDA 412 Special Topics in Digital Cultures</li> <li>• GBDA 414 Special Topics in Design &amp; Society</li> <li>• 2 Electives</li> </ul>	Work term 3	Work term 4
2025-2026	<ul style="list-style-type: none"> <li>• GBDA 402 Capstone Course – Cross-Cultural Digital Business (2.0CR)</li> <li>• GBDA 413 Special Topics in Interaction Design</li> </ul>		

## Checklist for SUC/SGRC Reviewer Feedback

### Quality Assurance Office

**Final Assessment Report: Bachelor's in Global Business and Digital Art (BGBDA) and Master's in Digital Experience Innovation (MDEI)**

**Name of Reviewer: Anita Layton**

**Date: 11/2/2020**

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#### Does the Final Assessment Report:

1. Include a credible implementation plan that not only addresses the substantive issues identified from the program review process, but also clearly identifies:
  - The actions that will follow from specific recommendations? ☒ **Yes** ☐ **No**
  - Those who will be responsible for acting on those recommendations? ☒ **Yes** ☐ **No**
  - Those who will be responsible for providing resources? ☒ **Yes** ☐ **No**
  - Priorities for implementation and realistic timelines for initiating and monitoring actions? ☒ **Yes** ☐ **No**
2. Provide rationales for any recommendations that have not been pursued? ☒ **Yes** ☐ **No**

#### General Comments

Click or tap here to enter text.

## Checklist for SUC/SGRC Reviewer Feedback

### Quality Assurance Office

**Final Assessment Report: Bachelor's in Global Business and Digital Art (BGBDA) and Master's in Digital Experience Innovation (MDEI)**

**Name of Reviewer: Mike Szarka**

**Date: 11/16/2020**

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#### Does the Final Assessment Report:

1. Include a credible implementation plan that not only addresses the substantive issues identified from the program review process, but also clearly identifies:
  - The actions that will follow from specific recommendations? ☒ Yes ☐ No
  - Those who will be responsible for acting on those recommendations? ☒ Yes ☐ No
  - Those who will be responsible for providing resources? ☒ Yes ☐ No
  - Priorities for implementation and realistic timelines for initiating and monitoring actions? ☒ Yes ☐ No
2. Provide rationales for any recommendations that have not been pursued? ☒ Yes ☐ No

#### General Comments

In my view the School has considered all the recommendations thoroughly and is dedicating a very substantial commitment of faculty and staff time to make the suggested improvements to the program and the Stratford campus environment. Given the explosive growth and success of the program, finding the resources to pursue so many issues is a clear demonstration of having taken the review seriously and striving to improve in every way possible. The responsibilities and anticipated timelines are clearly articulated.



**University of Waterloo**  
**SENATE UNDERGRADUATE COUNCIL**  
**Report to Senate**  
**18 January 2021**

Senate Undergraduate Council met on 10 November 2020 and 15 December 2020 and agreed to forward the following items to Senate for information or approval, as noted, in the consent agenda.

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

**FOR DECISION**

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**REGULATION CHANGES**

**Arts**

**Liberal Studies – Inclusion of non-Arts Cross-listed Courses in Average**

1. **Motion:** That Senate approve the following proposed revisions to the academic standings regulations as they apply to Liberal Studies students, effective 1 September 2022.

**Rationale and Background:**

- MAV = Major Average; calculated using courses in major.
- FAV = Faculty Average; calculated using all Arts courses (including those in MAV that are Arts courses).
- FAV and MAV are based on different sets of courses, so they typically differ for an Arts student in a major.
- Liberal Studies currently substitutes the FAV in place of the MAV, which isn't consistent with how MAV's are calculated for majors.
- This creates a problem for cross-listed courses in MAV and FAV, and inconsistencies in average calculations.
- The proposed solution is to change the Liberal Studies average to be based on a MAV, rather than FAV, bringing it in line with the way averages are calculated for majors.
  - LIBST isn't a "major" in the pedagogical sense of a focused subject (or set of), but does behave like one in that it's a group of courses that should have a distinct MAV.
  - For LIBST students who only take Arts courses, the MAV and FAV would still be the same.
  - For LIBST students who take a course in another faculty cross-listed with an Arts course, that grade would be included in the LIBST MAV, similarly to how it's used to calculate any other major MAV.

**Undergraduate Calendar Text:** <https://ugradcalendar.uwaterloo.ca/page/ARTS-Academic-Standing-and-Averages>

**New Calendar text:**

**bold = new; strikeout = deleted**

**Academic Standing Definition**

Academic standing is a measure of the student's academic achievement relative to their degree requirements, and determines their eligibility to be admitted to and/or proceed in their academic plan and to qualify for graduation.

A student's academic standing is determined by the averages attained:

- Cumulative Overall Average (CAV): Average of the grades in all courses taken regardless of faculty.
- Faculty (Arts) Average (FAV): Average of the grades in all Faculty of Arts courses.
  - Does not include courses with the following subjects: BASE, EFAS, SWREN, UNIV.
- Major Average (MAV): Average of the grades in all courses taken within the student's major.
  - All courses taken under the subject code of the student's major and those courses listed under the plan-level requirements are included in the major average regardless of whether any of these courses are in

**Senate Undergraduate Council**  
**18 January 2021, Report to Senate (Consent)**

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excess of the minimum required by the major.

**o For Liberal Studies academic plans, the MAV reflects the average of the grades in Faculty of Arts courses and includes courses in other faculties cross-listed with Arts courses.**

- Term Average: Average of the grades in all courses taken within a particular academic term.
- Minor Average: Average of the grades in all courses taken within the student's minor.
  - o All courses taken under the subject code of the student's minor and those courses listed as optional requirements are included in the minor average regardless of whether any of these courses is in excess of the minimum required by the minor.
  - o Cross-listed courses count towards the minor average in the same way they do for the major average (see below for details).

Students who meet the academic requirements for their major will be in Excellent, Good, or Satisfactory standing, depending on the major and their term and overall averages. Failure to meet minimum average requirements for the major may result in a Conditional or a Failed standing (see Note 3).

Students can find their term grades in Quest and academic standing on their unofficial transcripts.

#### Cross-listed Courses in Calculation of Averages

- Any course taken (under any subject code) which was cross-listed with a course in a student's plan in the Undergraduate Calendar they are following (that is, is included in their requirement term) is included in the plan average.
  - o For example, a Psychology student enrolled in PHIL 256 (cross-listed with PSYCH 256) will have the course grade counted towards the Psychology plan average only if PHIL 256/PSYCH 256 was cross-listed in their requirement term. If a course is later cross-listed and a student takes the course when it is cross-listed, it will not count in the plan average unless a student changes their requirement term to a term in which the course is cross-listed. For example, if PHIL 256 was de-cross-listed from PSYCH 256, PHIL 256 would continue to count in the student's plan average unless they switched their Psychology requirements to a later requirement term, when the pair is no longer cross-listed, at which point it would stop counting. Similarly, if PHIL 256 was not cross-listed at the time the student took the course, but became cross-listed and the student opted into a newer Psychology requirement term, PHIL 256 would now count towards the plan average.
- Cross-listed courses in a different faculty will not be included in the Faculty of Arts average (FAV).
- **Cross-listed courses in a different faculty taken to fulfil Arts Major plan requirements will be included in the corresponding MAV.**
- **Cross-listed courses in a different faculty taken to fulfil Liberal Studies plan requirements will be included in the Liberal Studies MAV.**

#### Notes

1. For Wilfrid Laurier University courses, see Wilfrid Laurier University Cross-Registration.
2. Students who have received transfer credit(s) or had grades cleared should refer to Transfer Credit for further details.
3. Even while otherwise in satisfactory standing, a student who fails two or more academic courses within the first five academic course units or fewer may be required to withdraw if the Arts Examinations and Standings Committee considers that the student will not profit by further study.

#### FOR INFORMATION

#### ACADEMIC PROGRAM REVIEWS

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

**Senate Undergraduate Council**  
**18 January 2021, Report to Senate (Consent)**

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**MINOR PLAN & CURRICULAR MODIFICATIONS**

Council approved the following on behalf of Senate:

- minor plan changes for the faculty of arts (English language and literature, east Asian studies, Indigenous entrepreneurship minor, diploma in Indigenous entrepreneurship).
- new courses for the faculty of arts (cultural identities).
- course changes for WatPD and the faculties of arts (accounting and financial management, communication arts, English language and literature, fine arts, religious studies, sociology and legal studies); engineering (management engineering, mechatronics engineering); and environment (geography & environmental management, knowledge integration).
- course inactivations for WatPD and the faculty of arts (religious studies).

*/rmw*

David DeVidi  
Associate Vice-President, Academic



# Two-Year Progress Report

## Chemistry (BSc)

### June 2020

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#### Background

The Undergraduate Chemistry program was reviewed in 2016-17, following the procedures described in the University Institutional Quality Assurance Process, with a self-study document submitted in September 2016, a site visit by two external reviewers with an internal reviewer accompanying them in January 2017, and a final assessment report was completed in May 2017.

The external reviewers' report indicated that the University of Waterloo offers its students a range of accredited Chemistry programs that is unmatched by any Canadian university. Recent curriculum review and planning processes, coupled with the open and effective leadership within the Department of Chemistry, have strategically positioned the Department to face the future in an increasingly competitive environment.

The Department of Chemistry at Waterloo is one of the most research-active chemistry departments in Canada. Students benefit from learning in a research intensive environment in multiple ways: they gain hands-on research experience by completing fourth-year research projects; they can join a research group as part of a work term in the co-op program; they can work or volunteer in the research groups (e.g., NSERC Undergraduate Student Research Awards); and, finally, they have the opportunity to learn from the Department's faculty and to select upper year (year 3 and 4) courses that align with their interests.

#### Progress on Implementation Plan

#### Recommendations

1. Self-study reports should contain the detailed program requirements for all degree programs under review.

#### Status – complete

Completed by Quality Assurance Office

2. The Dean of Science and the senior administration should ensure that the upgrades of Building C2, in particular the ventilation system upgrade, are to be completed as soon as possible.

**Status – complete**

After extensive review and engineering consulting, a contractor was retained and rehabilitation of the ventilation system was completed in summer 2019.

3. The Department should review the existing laboratory facilities and develop a plan for space management and upgrade, to align with ongoing equipment/infrastructure renewal.

**Status – complete**

Space planning and renovations are now part of the new annual budget planning process. Currently no renovations are planned, but will be undertaken with faculty renewal as needed. The Faculty is working on a modernization plan for the oldest buildings that may commence in the next 3-5 years.

4. The future plans of the Department of Chemistry should include a dedicated study space/resource center for Chemistry students.

**Status – complete**

Student space within the Department is available through the ChemClub room in C2. The Department judges that this as well as the large amount of study and student life space now available in the STC building is sufficient.

5. The Department of Chemistry should review its safety procedures at regular intervals.

**Status – ongoing**

This is and has always been reviewed annually under Policy 34 by the Chair and Safety Committee. An online system of safety inspection monitoring has been in place for several years.

6. The Department should review the coordination of multi-section courses. Course coordinators (if applicable) and instructors should place a high priority on following an agreed-upon timeline for delivering the course content, as students are distressed when sections are out of sync.

**Status – complete**

Course coordinators, in place for multi-section courses in first year, are responsible for ensuring sequencing and timing of courses is consistent. This team-based approach to multisection courses has removed any issues with syncing of course content.

7. The Department should review the coordination and grading of CHEM 494 projects. Reminders with respect to the expectations for the time devoted to the project should be



widely circulated, information about projects and the course should be circulated to students in a timely manner, and a greater emphasis on grading by reviewers should be considered.

**Status – complete**

The Chem 494 Coordinator has implemented orientation sessions for all students at the beginning of each term. 60% of the final grade is completed by faculty reviewers. A LEARN site has been created for students to access information, be informed of timelines, and submit reports throughout their projects.

8. The Department should review the coordination of joint programs.

**Status – complete**

Coordinating committees are now in place for each of our joint programs: Biochemistry, Materials and Nanosciences, and Nanotechnology Engineering.

9. The Department should review the list of required courses for the Materials and Nanoscience program to ensure that required core courses meet the students' needs and that pre-requisites adequately prepare students for upcoming courses.

**Status - ongoing**

Program changes have been completed and approved, and implementation is underway. Issues around sequencing of courses were addressed first, then progressive and related learning outcomes applied to each course and its content.

10. The Department should continue to support initiatives that strengthen the library-department relationship.

**Status – complete**

The Chemistry Liaison Librarian is invited annually to department meetings to provide updates and receive feedback. Instructors are reminded of the availability of the library to enhance the program and courses delivered. Upper year courses and the fourth year research project now include library tools and often visits from the liaison librarian.

11. The Department should review placement information to ensure that co-op students receive a breadth of experiences throughout their co-op program.

**Status – complete**

A Co-op liaison has been appointed with the specific aim of educating co-op students on the placement process and helpful tips to ensure success with placements. This provides



a point of contact to students as well as consistent communication from Coop Education and the Faculty of Science on changes and supports for coop programs.

12. We recommend that the Department develop a long-term plan for the sustainability of the 2+2 and 2+1+1 initiatives and that the issue of resources and support be discussed with the Faculty of Science and the University.

**Status – complete**

Coordination of the program with external partners was formalized, and a sustainable teaching plan for the additional courses was devised. Out of that plan, a full-time lecturer with specific responsibility for the MNS program and teaching in Beijing was appointed in May 2018.

13. The Department should consider discontinuing programs with chronic low enrolments, such as geochemistry and chemical physics.

**Status – complete**

The Chemical Physics program and Materials specialization of the Chemistry program have been inactivated, effective September 1, 2020 and September 1, 2019 respectively. Geochemistry is awaiting action from the Department of Earth and Environmental Science, which currently holds administrative leadership of the program.

14. We recommend that the Department continue to assess its programs, ensuring that all accredited programs provide outstanding training in chemistry while, at the same time, balancing workload and accommodating diverse student interests.

**Status – ongoing**

The Department, through its Undergraduate Affairs Committee, will continue to review its programs. Since the curriculum has undergone significant changes over the last three years, student success and outcomes will be monitored annually over the next five years to identify any ongoing or new weaknesses. Continued investment in the lab components will remain a high priority. A full assessment will be presented as part of our next program review.

15. The Department should consider the implementation of annual Department-level review of the suite of experiments for the labs, with the goal of identifying issues with current experiments and selecting potential new experiments. The external reviewers



recommended that the Department explore means, such as assistance from students, to support the lab instructors in updating and developing experiments.

**Status – ongoing**

The Chair, along with the Dean and Undergraduate Affairs Committee will plan to adjust workloads so instructors have time for lab updates and development. Revisions to terms of offering has permitted more lab development time for instructors to update lab curriculum. In addition, replacement of some aging lab equipment has permitted new experiments and better student experience.

16. The Department should review its website to ensure that potential students can easily identify the many programs offered.

**Status – complete**

The Faculty of Science has undertaken a reorganization of all web information on Science programs to ensure information is available in a coherent and accessible manner.

17. The Department should review its mechanisms for communicating with successful graduates.

**Status – ongoing**

The Department will continue to run its exit survey of graduating students and will work with the Science Alumni Office to facilitate ongoing communication with them. Special events to invite alumni back to campus for Chemistry focused activities have occurred, such as the unveiling of our Timeline of the Elements in October 2019, and more are planned but unfortunately these have been delayed due to the pandemic.

18. The Department should explore opportunities for including student members on committees.

**Status – complete**

Students are regularly invited to faculty interviews which now include teaching seminars and asked to provide feedback with our latest faculty hires. The Undergraduate Affairs committee now includes as non-voting members one CHEM undergraduate and one BIOCHEM undergraduate as student representatives.

19. The Department should explore opportunities to include more discussion and group work into the curriculum.



**Status – ongoing**

Second (254), third (360) and fourth year (430) courses have added group activities to their curriculum, particularly team-based learning exercises where students first work alone on a problem, then come together in groups to solve a related but more involved problem. In addition, peer review has been introduced, including coaching on how to give constructive feedback in Chem 430. Compilation of the many efforts involving group work is ongoing and will be shared throughout the Department for information.

**Implementation Plan:**

	Recommendations	Proposed Actions	Responsibility for Leading and Resourcing (if applicable) the Actions	Timeline for addressing Recommendations
1.	Self-study reports should contain the detailed program requirements for all degree programs under review.	Include program requirements in future templates and instructions	Quality Assurance Office	Report templates updated in Fall 2017
2.	The Dean of Science and the senior administration should ensure that the upgrades of Building C2, in particular the ventilation system upgrade, are completed as soon as possible.	Upgrade of ventilation system to extend life of equipment by ten years.	Dean's Office	Upgrades completed summer 2019
3.	The Department should review the existing laboratory facilities and develop a plan for space management and upgrade, to align with ongoing equipment/infrastructure renewal.	Space planning and renovations will be part of new annual budget planning process	Department Executive Committee and Chair	Space needs and renovations reviewed annually during budget planning. Modernization plans for older buildings received in 2019.
4.	The future plans of the Department of Chemistry should include a dedicated study space/resource center for Chemistry students.	Short-term: make seminar room available for students	Chair	ChemClub space available since 2017; STC study space an additional resource.
5.	The Department of Chemistry should review its safety procedures at regular intervals.	Review at least annually under Policy 34	Chair and Safety Committee	Reviewed annually
6.	The Department should review the coordination of multi-section courses. Course coordinators (if applicable) and instructors should place a high priority on following an agreed-upon timeline for	Review with course coordinators in CHEM 120 & 123	First-year Coordinator, UG Affairs Committee and Associate Chair, UG programs	Completed Fall 2017 –focus in all upcoming offerings.

## Attachment #1



	delivering the course content, as students are distressed when sections are out of sync.			
7.	The Department should review the coordination and grading of CHEM 494 projects. Reminders with respect to the expectations for the time devoted to the project should be widely circulated, information about projects and the course should be circulated to students in a timely manner, and a greater emphasis on grading by reviewers should be considered.	Additional Orientation with 494 students; Highlight website; New LEARN site as student resource	CHEM 494 coordinator (Chair)	Completed Fall 2017
8.	The Department should review the coordination of joint programs.	Establish Coordinating Committees for joint programs	Chair and Chairs of Biology and Physics and Astronomy	Biochem/Biol Coordination completed Winter 2017. MNS/Physics coordination completed Fall 2017
9.	The Department should review the list of required courses for the Materials and Nanoscience program to ensure that required core courses meet the students' needs and that pre-requisites adequately prepare students for upcoming courses.	Course changes and sequencing to be reviewed	MNS Coordinating Committee	Curriculum review completed Fall 2017 with course changes implemented by Spring 2019
10.	The Department should continue to support initiatives that strengthen the library-department relationship.	Explore opportunities to include library in courses and programs within the department.	UG Affairs Committee	Librarian involved in course and department meetings annually. New course CHEM 200 and existing CHEM 494 and many upper year CHEM courses now involve librarian.
11.	The Department should review placement information to ensure that co-op students	Hold information sessions for students,	Co-op Coordinator, Chair, instructors.	Coop liaisons established, information regularly shared

## Attachment #1



	receive a breadth of experiences throughout their co-op program.	establish coop liaison responsibilities and mentoring by second year instructors		with students particularly as they approach first work term process
12.	The Department should develop a long-term plan for the sustainability of the 2+2 and 2+1+1 initiatives and that the issue of resources and support be discussed with the Faculty of Science and the University.	Develop a plan with the Dean's Office. Consult with Department. New dedicated faculty lecturer position to be filled	Chair, Associate Chair (UG programs) and Dean; Chemistry Executive Committee, Department of Physics & Astronomy	Sustainable teaching plan developed Fall 2017. Dedicated lecturer hired in May 2018.
13.	The Department should consider discontinuing programs with chronic low enrolments, including geochemistry, chemical physics and materials specialization in Chemistry.	Review enrolments and sustainability of specializations.	UG Affairs Committee	Geochemistry – referred to EES department; Chemical Physics and Materials Specialization in Chemistry inactivated in Winter 2019
14.	We recommend that the Department continue to assess its programs, ensuring that all accredited programs provide outstanding training in chemistry while, at the same time, balancing workload and accommodating diverse student interests.	Additional plan flexibility to be introduced as part of new curriculum beginning September 2019.	UG Affairs Committee	Complete Sept 2019, success and adjustments made as necessary as students move through new plan.
15.	The Department should consider the implementation of annual Department-level review of the suite of experiments for the labs, with the goal of identifying issues with current experiments and selecting potential new experiments. We recommend that the Department explore means, such as assistance	Plan to adjust workloads so instructors have some time for lab updates and development	Chair with Dean on resources; UG Affairs Committee on priorities and implementation.	2018 and annually as part of teaching schedule planning.

## Attachment #1



	from students, to support the lab instructors in updating and developing experiments.			
16.	The Department should review its website to ensure that potential students can easily identify the many programs offered.	Reorganize information regarding programs in partnership with the Science Undergraduate Office website changes	UG Affairs Committee, Associate Chair (UG programs), and Dean's Office	Website has been revised, completed Summer 2017
17.	The Department should review its mechanisms for communicating with successful graduates.	Alumni events to be held	UG Affairs and Grad Affairs Committees and Science Alumni Office	Alumni events now held regularly, recent graduates celebrated at each convocation
18.	The Department should explore opportunities for including student members on committees.	To be added as additional members when appropriate	Chair and Executive Committee	Summer 2017 for current and future hiring committees and ongoing with curriculum changes.
19.	The Department should explore opportunities to include more discussion and group work into the curriculum.	To investigate, implement and share different approaches to incorporating group work into curriculum	UG Affairs Committee, Teaching Fellow	Second (254), third (360) and fourth year (430) courses have added group activities to their curriculum, completed 2017. Further incorporation ongoing.

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



2023-24

Date of next program review: \_\_\_\_\_

Date

Signatures of Approval:

Chair/Director

01/05/19

Date

AFIW Administrative Dean/Head (For AFIW programs only)

Date

Faculty Dean

6-5-19

Date

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

February 11, 2020

Associate Vice-President, Academic  
(For undergraduate and augmented programs)

Date

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

Date

Attachment #1  
**Checklist for SUC/SGRC Reviewer Feedback**  
**Quality Assurance Office**

**Two-Year Progress Report: Chemistry BSc**

**Name of Reviewer: Martin Cooke**

**Date: 10/8/2020**

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**Does the Two-Year Progress Report:**

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

**General Comments**

**Overall, the review was very positive. The 2-year report clearly presents actions taken to address the reviewers' suggestions.**

**University of Waterloo**  
**SENATE**  
**Report of the President**  
**18 January 2021**

**FOR INFORMATION**

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**Recognition and Commendation**

**St. Paul's University College** is proud to announce the appointment of the **Right Honorable Michaëlle Jean**, 27th Governor General of Canada, as **Chancellor**, for a three-year term starting immediately. "We are delighted to have someone of Mme. Jean's talent and stature take on the role of Chancellor," said Brad Siim, incoming Board Chair. "Her interests and values align beautifully with those of our College." St. Paul's University College is unique in offering programs in Indigenous Studies, International Development, Canadian Studies and Human Rights. The College is also home to the Waterloo Indigenous Student Center, the Student Refugee Program, and GreenHouse, a nationally-recognized social enterprise incubator. These are all areas which are dear to the Right Honorable Michaëlle Jean, that she will want to follow closely, promote and encourage, as she states in words that express her desire to get involved: "I am particularly honored to be associated with the highly innovative, inspiring, creative and inclusive approach that sets St. Paul's University College apart and of which this institution and the University of Waterloo can be proud. I thank them for including me and I would like to give my full support to their influence. I look forward to being in contact with and alongside the teams as well as the students, to let myself be won over by their enthusiasm, their aspirations, their desire to surpass themselves in a spirit of achievement and excellence." Michaëlle Jean succeeds Jean Paul Gladu, former President of the Canadian Council for Aboriginal Business, who served as Chancellor from 2017 to 2020.

(adapted from the *Daily Bulletin*, 29 October 2020)

**Professor Aiping Yu** is one step closer to her dream of establishing a world-leading carbon nanotechnology centre at the University of Waterloo after winning a prestigious award for highly promising researchers. The chemical engineering professor is one of six nation-wide recipients of 2020 **E.W.R. Steacie Memorial Fellowships** by the **Natural Sciences and Engineering Research Council of Canada**. Winners receive \$250,000 in research grants over two years and, via payments of up to \$90,000 a year to their universities, are freed from teaching and administrative duties so they can concentrate on research full-time. Yu, who has been at Waterloo Engineering for more than a decade after working for a year in the plastics industry, is thrilled by the recognition and the opportunity to take her work in the lab to the next level. "As a female researcher, it is difficult to balance family life and career development," she says. "I appreciate this award because it gives me two years of teaching relief so I can really take off and fly." As director of the Applied Carbon Nanotechnology Laboratory, Yu's main research focus is on carbon nanomaterials, particularly carbon nanotubes and graphene, to make longer-lasting, smaller, faster-charging batteries and supercapacitors. Carbon nanotubes and graphene are particularly well-suited to those applications, including use in electric vehicles and consumer electronics such as smartphones and laptops, because they are highly conductive and have large surface areas. A secondary area of research involves the use of graphene at the nanoscale level as an additive to an extremely expensive polymer coating for corrosion protection of pipelines made of carbon steel.

(adapted from the *Daily Bulletin*, 13 November 2020)



A landmark international student work/study exchange program is being lauded for its achievements as it celebrates a decade of successful experiences abroad. The **Canada-Europe (CANEU) Co-op program** has been awarded the **2020 Canadian Bureau for International Excellence (CBIE) Panorama Award** to recognize innovation and excellence in design, planning, implementation and management of high quality endeavours in international education with programming that focuses on academic, extracurricular, capacity-building and/or learning abroad. A partnership between Waterloo, the University of Victoria (UVic) and two European institutions, CANEU Co-op brings together students in Canada and Europe for memorable work-integrated learning and study abroad experiences as part of a hybrid exchange program. Canadian students travel to Europe for co-op work terms, while European students come to Canada for study terms. “It’s wonderful to be acknowledged for this award and to recognize that the reason why these programs are so important is to not only bring institutions together, but to really set the foundation for exciting and powerful transformative experiences for our students,” says Norah McRae, associate provost of Co-operative and Experiential Education at Waterloo. Students from Waterloo and UVic participate in this memorable experience with partner institutions FH Joanneum University of Applied Sciences in Austria and Baden-Württemberg Co-operative State University in Germany. The CBIE award ceremony was held virtually on November 18 which allowed founding partners to attend and celebrate regardless of location.

(adapted from the *Co-operative and Experiential Education News*, 19 November 2020)

**Nikolay Videnov**, a master’s student at the Institute for Quantum Computing (IQC) has won the title of **Best University of Waterloo Presenter** at the virtual research colloquium, jointly hosted by the University of Waterloo and the University of Strathclyde. Nikolay’s presentation was selected from a short list of 11 presenters, out of a field of 28 submissions from Waterloo, which focused on research areas such as, Nuclear Engineering, Quantum Technology, Digital Health, Sustainable Energy and Entrepreneurship. The IQC student’s presentation of his research on Building an Open-access Quantum Information Processor won a \$500 award. Nikolay said he was extremely impressed with the diversity of the research shared by his colleagues at both institutions. He added that he valued the opportunity to receive feedback from international scholars. President Feridun Hamdullahpur and Principal of the University of Strathclyde Sir Jim McDonald opened the one-day research colloquium with a fireside chat that discussed the challenges facing higher education in light of COVID and the value of strengthening international collaboration among strategic partnerships. They also reiterated their commitments to working together to continue to provide ideas and research that solve vexing global challenges. Organized by Waterloo International, in collaboration with Graduate Studies and Postdoctoral Affairs, the Office of Research, and several faculties, the virtual research colloquium drew wide campus involvement and strengthened international partnerships.

(adapted from the *Daily Bulletin*, 20 November 2020)

Cheriton School of Computer Science **Professors Shalev Ben-David** and **Eric Blais** have received a prestigious **best paper award** at **FOCS 2020**, the **61<sup>st</sup> Annual IEEE Symposium on Foundations of Computer Science**. FOCS and its counterpart — the Symposium on Theory of Computing — are the top international meetings in theoretical computer science. Their award-winning paper, “A New Minimax Theorem for Randomized Algorithms,” extends the minimax theorem, a seminal contribution to computer science by Andrew Yao, the 2000 Turing Award laureate. Yao’s 1977 paper, “Probabilistic Computations: Toward a Unified Measure of Complexity,” introduced what is now known widely among computer scientists as Yao’s min-max principle, which uses von Neumann’s minimax theorem from game theory to relate average-case complexity for deterministic algorithms to worst-case complexity for randomized algorithms. “Our work on the minimax theorem came about because we came across a problem where Yao’s minimax theorem applied, but it was not strong enough to give the conclusion we

needed,” Professor Blais said, “That problem is known as the *composition conjecture for randomized query complexity*.” One important ingredient in the proof of Ben-David and Blais is a new notion called *forecasting* algorithms. The idea of using forecasting algorithms comes from the observation that measuring the error probability of randomized algorithms is not always the best way to measure the accuracy of an algorithm. “We can sometimes get much more insightful results by asking the algorithm to output a prediction of the correct output, along with a measure of the confidence the algorithm has in its prediction,” Professor Ben-David said.

(adapted from the *Daily Bulletin*, 26 November 2020)

The **Natural Sciences and Engineering Research Council (NSERC)** announced it is naming an award for outstanding researchers after **Donna Strickland**. Strickland, a professor in the Department of Physics and Astronomy, won the Nobel Prize in Physics in 2018. The new award, called the **NSERC Donna Strickland Prize for Societal Impact of Natural Sciences and Engineering Research** is worth \$250,000 and will go to a researcher or team of researchers whose work benefitted Canadian society, the environment, or the economy in an exceptional way. The award is open to any NSERC-funded researcher who conducted the research in Canada. “Sometimes you don’t realize when you are working on a project just how much of an impact it will have down the road,” said Strickland. “I’m so grateful for the honour of having an award named after me that will go to colleagues who have made really positive contributions with their work.” NSERC also announced an award named after Arthur McDonald, from Queen’s University and who won the Nobel Prize in Physics in 2015. The Arthur B. McDonald Fellowships replace the EWR Steacie Memorial Fellowships. The awards recognize academic researchers in the natural sciences and engineering who are early in their careers, and support them so that they may become global leaders in their field. The fellowships are worth \$250,000 over two years.

(adapted from the *Daily Bulletin*, 26 November 2020)

More than 75 teams competed once again to be among the Fall 2020 **Concept \$5K Winners**. As the pandemic slows down many industries and businesses, these incredible students continue to develop new ideas. Student ideas covered an incredibly wide variety of sectors, and the semi-finals featured representatives from every Faculty. The new Climate Change Grant, in partnership with the Interdisciplinary Centre on Climate Change (IC<sup>3</sup>) saw a number of impressive teams advance to the Concept \$5K Finals. Of the finalists, four are directly focusing on climate change solutions.

Winners included:

- **ChangeRoom**, a fashion-tech startup that connects the vast array of sustainable clothing brands with the growing number of eco-conscious customers through an intuitive and simple mobile marketplace.
- **Miss Mechanic**, an on-call automotive service support system provided by women, for women, to make informed decisions in a traditionally male-dominated industry.
- **mtion Interactive**, which is developing a twitch for virtual reality.
- **XP Fantasy**, an esports community platform where users can use their knowledge, experience and passion for various esports to compete in daily fantasy contests to win tangible prizes.

Climate Change Grant Winner:

- **UBIAir – Air Pollution Monitoring Platform**, is a real-time, crowdsourced, IoT-based air quality monitoring ecosystem using IoT sensors for air pollution surveillance.

The People's Champ (\$500.00):

- **Cove** is building a platform that provides healthcare providers and their patients with digital suicide intervention tools they can use to improve mental healthcare outcomes related to suicide.

(adapted from the *Daily Bulletin*, 7 December 2020)

Athletics and Recreation is extremely proud to announce that 336 student-athletes have been named to the **2019-20 President's Academic Honour Roll**. This distinguished recognition is given to student-athletes who have maintained an average of 80 per cent and higher while competing for an interuniversity sport. The University of Waterloo has one of the highest percentages of Academic All-Canadian student-athletes in the country on an annual basis. The 336 student-athletes honoured represents more than 50 percent of the student-athlete population at Waterloo, and was an increase of 84 student-athletes from a year ago. In addition, 22 of the 31 Warriors varsity teams have at least 50 per cent of their student-athletes represented on the Honour Roll, while all 31 programs have at least four student-athletes represented. For the fifth year in a row, the number of student-athletes receiving this honour is an all-time high for the Warriors. Consistently Waterloo student-athletes have demonstrated excellence both in the classroom and on the playing field.

Top Academic Student-Athletes: **Selena Dirven** from women's hockey and **MacKenzie Strong** from baseball were the top undergrad award winners thanks to their staggering averages of 96.7 per cent and 98.3 per cent respectively. Dirven is in her fourth year of Kinesiology and Strong is in his third year of Chemical Engineering. Dirven and Strong were also recipients of the Fairfax Financial Award along with **Karen Fan** (Biomedical Sciences) from women's volleyball and **Ahmed Fouad** (Biomedical Sciences) who is a dual student-athlete with football and squash.

(adapted from the *Daily Bulletin*, 14 December 2020)

Two members of the Faculty of Applied Health Sciences captured two of the top three spots in the **AGE-WELL Network's** video competition. **Hector Perez**, a postdoctoral fellow with the School of Public Health and Health Systems, won first prize in AGE-WELL's Trainee Video Competition with his submission, "Dementia – The risk of going missing." **Lauren McLennan**, an undergraduate student also in the School, was one of two runners-up with her entry, "First responders' perspectives of return home interviews." Every year, the AGE-WELL Network of Centre of Excellence organizes a video competition, where researchers from across Canada within its network prepare two-minute videos about their research project, progress, and impacts. "The evaluation of this competition is about the researcher's ability to explain in an easy-to-understand manner their research projects, how they will address their research problem and the potential impact of the research," writes Perez. AGE-WELL is Canada's technology and aging network, dedicated to the creation of technologies and services that benefit older adults and caregivers.

(adapted from the *Daily Bulletin*, 21 December 2020)

**UNIVERSITY OF WATERLOO**  
**REPORT OF THE DEAN OF THE FACULTY OF ARTS TO SENATE**  
**January 18, 2021**

**FOR INFORMATION**

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**A. APPOINTMENTS**

**Probationary Term Appointments – Change in Date**

**KADIR, Aynur**, Assistant Professor, Department of Communication Arts, **from** July 1, 2019 to June 30, 2022 **to** July 1, 2019 to June 30, 2023.

**Definite Term Reappointments**

**AL ETHARI, Lamees**, Lecturer, Department of English Language and Literature, September 1, 2021 to August 31, 2023.

**BENNETT, Christopher**, Lecturer, Department of Political Science, September 1, 2021 to August 31, 2024.

**BERGSTROM, Anders**, Lecturer, Department of Communication Arts, August 1, 2021 to July 31, 2024.

**BLOEMHOF, Barbara**, Lecturer, Department of Economics, September 1, 2021 to August 31, 2024.

**DENTON, Stacy**, Lecturer, Department of English Language and Literature, September 1, 2021 to August 31, 2024.

**FORRESTER, Clive**, Lecturer, Department of English Language and Literature, September 1, 2021 to August 31, 2023.

**JANZEN, David**, Lecturer, Department of Communication Arts, August 1, 2021 to July 31, 2024.

**JONAHS, Andrea**, Lecturer, Department of English Language and Literature, September 1, 2021 to August 31, 2023.

**LAMONT, George**, Lecturer, Department of English Language and Literature, September 1, 2021 to August 31, 2023.

**MCCARTHY, Megan**, Lecturer, Department of Psychology, September 1, 2021 to August 31, 2024.

**NEAL, Carter**, Lecturer, Department of English Language and Literature, July 1, 2021 to June 30, 2024.

**SELINGER, Megan**, Lecturer, Department of English Language and Literature, July 1, 2021 to June 30, 2024.

**TAYLOR, Christopher**, Lecturer, Department of History, September 1, 2021 to August 31, 2024.

**Cross Appointment**

**DAWSON, Lorne**, Professor, Department of Religious Studies to Department of Sociology and Legal Studies, May 1, 2020 to April 30, 2025.

**HALL, Peter**, Professor, School of Public Health and Health Systems to Department of Psychology, September 1, 2021 to August 31, 2026.

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

**MCRAE, Norah**, Assistant Professor, Department of Psychology, **from** February 1, 2020 to July 31, 2022 **to** February 1, 2020 to January 31, 2022.

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

**SMITH, Larry**, Associate Professor, Department of Economics, January 1, 2021 to December 31, 2021.

**B. ADMINISTRATIVE APPOINTMENTS**

**Administrative Reappointment**

**BOIDO, Mario**, Associate Chair, Undergraduate Studies, Department of Spanish and Latin American Studies, January 1, 2021 to December 31, 2021.

**HABIB, Jasmin**, Associate Director, PhD in Global Governance, Political Science, January 1, 2021 to June 30, 2022.

**C. SABBATICAL LEAVES**

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

**MILLIGAN, Ian**, Associate Professor, Department of History, July 1, 2021 to December 31, 2021, six month leave at 85% salary.



Sheila Ager  
Dean, Faculty of Arts

**UNIVERSITY OF WATERLOO**  
**REPORT OF THE DEAN OF ENGINEERING TO SENATE**  
**January 18, 2021**

**FOR INFORMATION**

**A. *APPOINTMENTS***

***New Definite Term-full-time***

**HE, Jiayuan**, Research Assistant Professor, Department of Systems Design Engineering, December 1, 2020 – November 30, 2021. PhD, Institute of Robotics, Shanghai Jiao Tong University, China, 2016; BS, College of Mechanical and Electrical Engineering, Nanjing University of Aeronautics and Astronautics, China, 2010. He is an emerging expert in the field of neural signal processing & control and its applications in neurorehabilitation engineering, as well as advanced human-machine interfacing. This appointment complements the Department's commitment to the University of Waterloo's expanding research expertise in biomedical engineering including the biosignal and biodevice areas.

**XIA, Jingjing, (Peter)**, Research Assistant Professor, Department of Electrical and Computer Engineering, November 1, 2020 – October 31, 2022. PhD in Electrical and Electronics Engineering, Nanyang Technological University, Singapore, 2013; MSc in Electrical and Computer Engineering, University of Waterloo, ON, 2013; BEng in Electrical and Electronics Engineering, Nanyang Technological University, Singapore, 2008. Dr. Xia's expertise lie in the broad area of mixed-signal/RF design, Digital Signal Processing and associated firmware development. Dr. Xia has several years of experience in the design of analog and RF circuits.

***New Definite Term-full-time Reappointment***

**CAMLICA, Ahmet**, Research Assistant Professor, Department of Electrical and Computer Engineering, September 1, 2021 – March 31, 2024. PhD, Electrical and Computer Engineering, University of Waterloo, Waterloo, ON, 2019; MS, Mechanical and Mechatronics Engineering, University of Waterloo, Waterloo, ON, 2013; BS, Electrical and Computer Engineering, Erciyes University, Kayseri Turkey, 2009.

**GHAURIAN, Moojan**, Research Assistant Professor, Department of Electrical and Computer Engineering, May 1, 2021 – April 30, 2023. Doctor of Philosophy, Information Sciences Technology, PhD, minor in Computational Science, The Pennsylvania State University, USA, 2017; BSc, Computer Science and Engineering (Software Engineering), University of Tehran, Iran, 2013.

**REDDY, Roopa**, Lecturer, Conrad School of Entrepreneurship and Business, July 1, 2021 – June 30, 2024. BEd, Intermediate/Senior (Mathematics and Business), OISE, University of Toronto, Toronto, ON, Research Placement: Enseña por Colombia (Teach for Colombia), Bogotá, Colombia, 2011; MSc, Development Studies (with Merit), London School of Economics; London, ON, Dissertation: Overcoming Child Labour through Schooling: A Rights-Based Approach, Advanced French Course, 2009; BBA Honours, BMath Honours (Double Degree program), Wilfrid Laurier University, University of Waterloo, Waterloo, ON, Exchange program: L'Institut Supérieur de Commerce, Paris, France, 2006.

**Visiting Appointments**

**JUN, Sima**, Researcher, Department of Civil and Environmental Engineering, February 25, 2021 – February 24, 2022.

**Lee, Justin, L.** Scholar, Department of Electrical and Computer Engineering, February 1, 2021 – August 2, 2021.

**LI, Lin**, Scholar, Department of Chemical Engineering, August 1, 2021 – July 31, 2022.

**SU, Juanjuan**, Scholar, Department of Chemical Engineering, July 1, 2021 – June 30, 2022.

**ZAMANI SIBONI, Hossein**, Scholar, Department of Electrical and Computer Engineering, October 27, 2020 – October 26, 2021.

**Adjunct Appointments**

Research and Graduate Supervision

**HASHEMI, Ehsan**, Assistant Professor, Department of Mechanical and Mechatronics Engineering, January 4, 2021 – January 3, 2024.

**HIPEL, Keith, W.**, Professor, Department of Systems Design Engineering, October 1, 2020 – September 30, 2023.

**SCOTT, Stacey**, Associate Professor, Department of Systems Design Engineering, October 1, 2020 – September 30, 2023.

**Adjunct Reappointments**

Graduate Supervision

**APLEVICH, Dwight**, Professor, Department of Electrical and Computer Engineering, August 1, 2020 – June 30, 2024.

**Adjunct Reappointments**

Research and Graduate Supervision

**BONAKDAR, Ali**, Assistant Professor, Department of Mechanical and Mechatronics Engineering, July 1, 2020 – June 30, 2023.

**CHAUDHURI, Sujeet, S.K.**, Professor, Department of Electrical and Computer Engineering, January 1, 2020 – June 30, 2024.

**ELMASRY, Mohamed**, Professor, Department of Electrical and Computer Engineering, January 1, 2021 – June 30, 2024.

**GLAWDEL, Tom**, Assistant Professor, Department of Mechanical and Mechatronics Engineering, June 1, 2020 – May 31, 2023.

**JOMAAS, Grunde**, Professor, Department of Mechanical and Mechatronics Engineering, June 1, 2020 – May 31, 2023.

**KODUR, Venkatesh**, Professor, Department of Mechanical and Mechatronics Engineering, November 1, 2020 – October 31, 2023.

**NAOUM-SAWAYA, Joe**, Associate Professor, Department of Management Sciences,

September

1, 2020 – August 31, 2023.

**PANG, Xin**, Assistant Professor, Department of Mechanical and Mechatronics Engineering, September 1, 2020 – August 31, 2023.

**VARIN, Robert, A.**, Professor, Department of Mechanical and Mechatronics Engineering, February 1, 2021 – January 31, 2024.

**WRIGHT, John, L.**, Professor, Department of Mechanical and Mechatronics Engineering January 1, 2021 – December 31, 2023.

**Adjunct Reappointments**

Graduate Supervision, Teaching and Research

**TORVI, David**, Professor, Department of Mechanical and Mechatronics Engineering, November 1, 2020 – October 31, 2023.

**Adjunct Reappointments**

Undergraduate and Graduate Teaching, Graduate Supervision

**CHRISTIAN, Bev, H.**, Associate Professor, Department of Mechanical and Mechatronics Engineering, January 1, 2021 – December 31, 2023.

**Adjunct Reappointments**

Other

**SMITH, Larry**, Associate Professor, Conrad School of Entrepreneurship and Business, January 1, 2021 – December 31, 2021.

**Cross Appointments**

**ELKAMEL, Ali**, Professor, Department of Chemical Engineering to Department of Systems Design Engineering, November 1, 2020 – December 31, 2023.

**HANSSON, Carolyn**, Professor, Department of Mechanical and Mechatronics Engineering to Department of Civil and Environmental Engineering, November 1, 2020 – October 31, 2023.

***CHANGES IN APPOINTMENTS***

**Probationary Term Extension**

**CROWLEY, Mark**, Assistant Professor, Department of Electrical and Computer Engineering, July 1, 2018 – June 30, 2021. (One year extension from June 30, 2021 to June 30, 2022.

**B. *ADMINISTRATIVE APPOINTMENTS***

**ABOUEE MEHRIZI, Hossein**, Associate Chair for Graduate Studies, Department of Management Sciences, January 1, 2021 – August 31, 2022.

**COLLINS, Michael**, Chair, Department of Mechanical and Mechatronics Engineering, January 1, 2021 – December 30, 2024.

**SCOTT, Andrea, K.**, Interim Associate Chair, Undergraduate Studies, Department of Systems Design Engineering, December 1, 2020 – August 31, 2021.

***ADMINISTRATIVE REAPPOINTMENTS***



**GOLAB, Lukasz**, Director, Management of Technology Distance Master's Program,  
Department  
of Management Sciences, January 1, 2021 – April 30, 2021.

Mary Wells

Mary A Wells  
Dean, Faculty of Engineering

**University of Waterloo**  
**REPORT OF THE DEAN OF ENVIRONMENT TO SENATE**  
**January 18, 2021**

**FOR INFORMATION**

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**A. APPOINTMENTS**

**Adjunct Appointments**

*Graduate Supervision*

**BULLOCK, Ryan**, Associate Professor, School of Environment, Resources and Sustainability, November 1, 2020 to October 31, 2023.

**DOHERTY, Kevin**, Assistant Professor, School of Environment, Resources and Sustainability, January 1, 2021 to December 31, 2023.

**KISH, Kaitlin**, Assistant Professor, School of Environment, Resources and Sustainability, November 1, 2020 to October 31, 2023.

**MARSCHKE, Melissa**, Associate Professor, School of Environment, Resources and Sustainability, January 1, 2021 to December 31, 2021.

**SILVER, Jennifer**, Associate Professor, Faculty of Environment, December 1, 2020 to December 31, 2023.

*Graduate Supervision and Research*

**AMARAL, Valter**, Assistant Professor, School of Environment, Resources and Sustainability, January 1, 2021 to December 31, 2023.

**Special Appointments**

*Instruction*

**ALTON, Christopher**, Lecturer, School of Planning, September 1, 2020 to December 31, 2020.

**CURTIS, Kevin**, Lecturer, School of Planning, January 1, 2021 to April 30, 2021.

**FLEIFEL, Eliana**, Lecturer, School of Environment, Enterprise and Development, January 1, 2021 to April 30, 2021.

**JACKSON, John**, Lecturer, School of Environment, Resources and Sustainability, January 1, 2021 to April 30, 2021.

**KNAFELC, Paul**, Lecturer, School of Environment, Enterprise and Development, January 1, 2021 to April 30, 2021.

**NG, Garrick**, Lecturer, School of Environment, Enterprise and Development, January 1, 2021 to April 30, 2021.

**SARKANY, Laszlo**, Lecturer, School of Environment, Enterprise and Development, January 1, 2021 to April 30, 2021.

**SCHULER, Peter**, Lecturer, Indigenous Elder, School of Environment, Resources and Sustainability, January 1, 2021 to April 30, 2021.

**SMITH, Nancy**, Lecturer, School of Planning, January 1, 2021 to April 30, 2021.

**WYLIE-TOAL, Brendan**, Lecturer, School of Environment, Enterprise and Development, January 1, 2021 to April 30, 2021.

**Graduate Student appointed as Part-Time Lecturer**

**TAN, Weikai**, Lecturer, Department of Geography and Environmental Management, January 1, 2021 to April 30, 2021.

**Cross Appointments**

**BROWER, Roy**, Professor, Department of Economics to School of Environment, Resources and Sustainability, May 1, 2020 to December 31, 2023.

**DOBERSTEIN, Brent**, Associate Professor, Department of Geography and Environmental Management to School of Environment, Resources and Sustainability, September 1, 2020 to August 31, 2023.

**DRESCHER, Michael**, Associate Professor, School of Planning to School of Environment, Resources and Sustainability, January 1, 2021 to December 31, 2023.

**FEICK, Rob**, Associate Professor, School of Planning to Department of Geography and Environmental Management, September 1, 2020 to August 31, 2023.

**HOMER-DIXON, Thomas**, Professor, Faculty of Environment to School of Environment, Resources and Sustainability, January 1, 2021 to December 31, 2023.

**SCOTT, Steffanie**, Professor, Department of Geography and Environmental Management to School of Environment, Resources and Sustainability, January 1, 2020 to December 31, 2023.

**WANDEL, Johanna**, Associate Professor, Department of Geography and Environmental Management to School of Environment, Resources and Sustainability, December 1, 2020 to December 31, 2023.

**B. ADMINISTRATIVE APPOINTMENTS**

**CRAIK, Neil**, Acting Associate Dean, Research, January 1, 2021 to August 31, 2021.

**DE LOE, Rob**, Associate Director, Undergraduate Studies, School of Environment, Resources and Sustainability, January 1, 2021 to December 31, 2023.

**ADMINISTRATIVE REAPPOINTMENTS**

**CLARKE, Amelia**, Associate Dean, Research, September 1, 2021 to August 31, 2024.

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

**FRAYNE, Bruce**, Director, School of Environment, Enterprise and Development, July 1, 2021 to June 30, 2024.

**C. SABBATICAL LEAVES**

*For Approval by the Board of Governors*

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

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

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

**SCOTT, Daniel**, Professor, Department of Geography and Environmental Management, September 21, 2021 to August 31, 2022 at 98.9% salary.

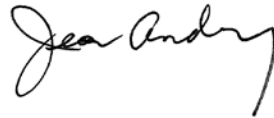
*Approved by the Board of Governors*

**BURCH, Sarah**, Associate Professor, Department of Geography and Environmental Management, January 1, 2021 to June 30, 2021 at 85% salary.

**CLARKE, Amelia**, Associate Professor, School of Environment, Enterprise and Development, January 1, 2021 to August 31, 2021 at 100% salary.

**HALL, Heather**, Assistant Professor, School of Environment, Enterprise and Development, January 1, 2021 to June 30, 2021 at 100% salary.

**NEPAL, Sanjay**, Professor, Department of Geography and Environmental Management, January 1, 2021 to June 30, 2021 at 85% salary.

A handwritten signature in black ink, appearing to read 'Jean Andrey', with a stylized, cursive script.

Jean Andrey  
Dean

**University of Waterloo**  
**REPORT OF THE DEAN OF FACULTY OF HEALTH TO SENATE**  
**January 18, 2021**

**FOR INFORMATION**

**A. APPOINTMENTS**

**Definite Term Appointment**

**BEACH, Tyson, Lecturer**, Department of Kinesiology, May 1, 2021 – April 29, 2023. [PhD, University of Waterloo, 2012, MSc, University of Waterloo, 2005, BSc, University of Guelph, 2002]. Dr. Beach will help support the department's teaching capacity in the area of Biomechanics. Dr. Beach also brings added skills and expertise as a Knowledge Broker in the areas of exercise, fitness and performance that fits well with the department's strategic plan for the Centre for Community, Clinical and Applied Research Excellence (CCCARE).

**Change to Definite Term Research Appointment**

**DAUM, Christine**, Research Assistant Professor, Faculty of Health, November 1, 2020 – March 31, 2022, 1.0 FTE.

**Adjunct Appointments**

*Graduate Supervision*

**KAASALAINEN, Sharon**, Professor, School of Public Health and Health Systems, December 1, 2020 – December 31, 2021.

**MORIN, Suzanne**, Associate Professor, Department of Kinesiology, November 1, 2020 – December 31, 2023.

**NAYLOR, Patti-Jean**, Professor, School of Public Health and Health Systems, November 1, 2020 – October 31, 2023.

*Graduate Supervision and Research*

**BOGER, Jennifer**, Assistant Professor, School of Public Health and Health Systems, January 1, 2021 – December 31, 2024.

**Adjunct Reappointments**

**ANDERSON, Kelly**, Associate Professor, School of Public Health and Health Systems, December 1, 2020 – December 31, 2023.

**BABIAK, Kathy**, Associate Professor, Department of Recreation and Leisure Studies, January 1, 2021 – December 31, 2022.

**CRIZZLE, Alex**, Associate Professor, School of Public Health and Health Systems, January 1, 2021 – December 31, 2023.

**D'AVERNAS, Josie**, Research Associate Professor, Faculty of Health, January 1, 2021-December 31, 2021.

**HALL, Marissa**, Assistant Professor, School of Public Health and Health Systems, October 26, 2020- October 31, 2021.

**MANNELL, Roger**, Distinguished Professor Emeritus, Department of Recreation and Leisure Studies, July 1, 2020-June 30, 2021.

**Change in adjunct appointment**

**RILEY, Barbara**, Research Associate Professor, Faculty of Health, start date changed to January 7, 2021 -March 31, 2021.

**Special Lecturer Appointments**

**FERRO, Annalise**, Lecturer, School of Public Health and Health Systems, January 1, 2021 – April 30, 2021, second lecturer appointment for Winter term.

**MCBEATH, Margaret**, Lecturer, Faculty of Health, January 1, 2021 – April 30, 2021.

**SHANBHAG, Gitanjali**, Lecturer, Faculty of Health, January 1, 2021 – April 30, 2021.

**TONG, Catherine**, Co-lecturer, School of Public Health and Health Systems, January 1, 2021-April 30, 2021.

**Postdoctoral appointments**

**NEUBAUER, Noelannah**, Faculty of Health, November 1, 2020 – October 31, 2021.

**NORTHWOOD, Melissa**, School of Public Health and Health Systems, August 20, 2020 – October 31, 2020.

**ZARABADI, Atefah**, School of Public Health and Health Systems, October 1, 2020 – September 30, 2022.

**Postdoctoral re-appointment**

**MARRIOTT, Kendal**, Department of Kinesiology, January 1, 2021 – December 31, 2021, one-year extension.

**WOOD, Katelyn**, Department of Kinesiology, January 1, 2021 – August 31, 2021, 9-month extension.

**Research appointment**

**KALLES, Elizabeth**, Research Associate, School of Public Health and Health Systems, November 1, 2020- January 31, 2020.

**B. Canada Research Chair appointment**

**NEUFELD, Hannah**, Assistant Professor and Canada Research Chair, Tier 2 in Indigenous Health, Wellbeing and Food Environments, School of Public Health and Health Systems, October 1, 2020 – September 30, 2025.

**C. ADMINISTRATIVE REAPPOINTMENTS**

**HECKMAN, George**, Associate Professor and Schlegel Research Chair in Geriatric Medicine, Schlegel-UW Research Institute for Aging, January 1, 2022 - December 31, 2024.

**KELLER, Heather**, Professor and Schlegel Research Chair in Nutrition and Aging, Schlegel-UW Research Institute for Aging, January 1, 2022 – December 31, 2026.

**D. RETIREMENTS**

**HUGHSON, Richard**, Professor, Department of Kinesiology, December 31, 2020.

**AROCHA, Frank (Jose)**, Associate Professor, School of Public Health and Health Systems, January 1, 2022.



**Lili Liu, Dean  
Faculty of Health**

**University of Waterloo**  
**REPORT OF THE DEAN OF MATHEMATICS TO SENATE**  
**January 18, 2021**

**FOR INFORMATION**

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

**Probationary-Term Appointments**

**PASHKOVICH, Kanstantsin** (Diploma in Mathematics, 2008, Belarusian State University; PhD, 2012, Otto-von-Guericke University), Assistant Professor, Dept. of Combinatorics and Optimization, May 1, 2021 – June 30, 2024. After completing his PhD, Dr. Pashkovich completed several postdoctoral visits in Padua, Italy (2012-13), Brussels, Belgium (2013-14), and at the University of Waterloo (2015-17). Subsequently, Dr. Pashkovich completed a 4-month period as a research fellow at the Simons Institute in Berkeley, USA. In January 2019, he joined the School of Computer Science and Electrical Engineering at University of Ottawa as an assistant professor. Dr. Pashkovich has wide-ranging research interests in optimization spanning convex, integer and combinatorial optimization and the interconnections between these areas. His recent research has fruitfully applied his expertise in these areas to solve problems in cooperative game theory. His research interests complement existing strengths in discrete and continuous optimization in the Department of Combinatorics & Optimization.

**Probationary-Term Reappointments**

**SANG, Peijun**, Assistant Professor, Dept. of Statistics and Actuarial Science, July 1, 2021 – June 30, 2024.

**Definite-Term Appointments**

**HACKMAN, Robert** (BSc, 2015, University of Alberta; MMath 2020, University of Waterloo), Lecturer, David R. Cheriton School of Computer Science, May 1, 2021 – April 29, 2023. Mr. Hackman will teach six courses per year and perform service duties as required.

**Definite-Term Reappointments**

**PRZEDBORSKI, Michelle**, Research Assistant Professor, Dept. of Applied Mathematics, April 1, 2020 – August 31, 2022

**Visiting Appointments**

**CONNELLY, Robert** (Cornell University), Professor, Dept. of Combinatorics & Optimization, February 1, 2021 – June 30, 2021.

**POURAHMPADI, Vahid**, Research Associate, David R. Cheriton School of Computer Science, November 1, 2020 – April 30, 2021.

**RENOUF, Elizabeth**, Research Associate, Dept. of Statistics and Actuarial Science, January 1, 2021 – December 31, 2021.

**Adjunct Appointments**

**Instructor**

**de LIMA BARBOSA, Bruno**, Lecturer, Office of the Dean, January 1, 2021 - April 30, 2021.

**RASHIDI, Sepehr**, Lecturer, Office of the Dean, January 1, 2021 – April 30, 2021.



**Grad Committee**

**SAFEY EL DIN, Mohab** (Sorbonne Universite), Professor, David R. Cheriton School of Computer Science, November 1, 2020 – June 30, 2024.

**ZHI, Lihong** (Chinese Academy of Sciences), Professor, David R. Cheriton School of Computer Science, November 1, 2020 – June 30, 2024.

**Adjunct Reappointments****Instructor**

**ALENCAR, Paulo**, Lecturer, David R. Cheriton School of Computer Science, January 1, 2021 – April 30, 2021.

**ARNASON, Mark**, Lecturer, Office of the Dean, January 1, 2021 – April 30, 2021.

**COOPER-STACHOWSKY, Mike**, Lecturer, Office of the Dean, January 1, 2021 – April 30, 2021.

**HACKMAN, Robert**, Lecturer, David R. Cheriton School of Computer Science, January 1, 2021 – April 30, 2021.

**HARRIS, Matthew**, Lecturer, Dept. of Applied Mathematics, January 1, 2021 – April 30, 2021.

**KAMAL, Zille Huma**, Lecturer, David R. Cheriton School of Computer Science, January 1, 2021 – April 30, 2021.

**KOTECHA, Sachin**, Lecturer, Office of the Dean, January 1, 2021 – April 30, 2021.

**PACEY, Dean**, Lecturer, Office of the Dean, January 1, 2021 – April 30, 2021.

**SHARMA, Puneet**, Lecturer, Dept. of Applied Mathematics, January 1, 2021 – April 30, 2021.

**WALKER, Timothy**, Lecturer, David R. Cheriton School of Computer Science, January 1, 2021 – April 30, 2021.

**Cross Reappointments**

**DOW, Christine** (Assistant Professor, Dept. of Geography & Environmental Management), in the Dept. of Applied Mathematics, July 1, 2020 – June 30, 2023.

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

**DUTT, Krishna**, Lecturer, Dept. of Applied Mathematics, January 1, 2021 - April 30, 2021.

**GRACE, Andrew**, Lecturer, Dept. of Applied Mathematics, January 1, 2021 – April 30, 2021.

**NOURIAN, Vahid**, Lecturer, Dept. of Applied Mathematics, January 1, 2021 – April 30, 2021.

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

**ESFAHANI, Navid**, David R. Cheriton School of Computer Science, January 1, 2021 – April 30, 2021.

**LAKIER, Matthew**, David R. Cheriton School of Computer Science, January 1, 2021 – April 30, 2021.

**SIVAS, Abdullah Ali**, Dept. of Applied Mathematics, January 1, 2021 – April 30, 2021.

**URSU, Dan**, Dept. of Pure Mathematics, January 1, 2021 – April 30, 2021.

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

**EBADI, Mohsen**, Dept. of Statistics and Actuarial Science, January 1, 2021 – December 31, 2021.

**GHASEMI, Maryam**, Dept. of Applied Mathematics, January 1, 2021 – December 31, 2021.

**HU, Hao**, Lecturer, Dept. of Combinatorics & Optimization, January 1, 2021 – April 30, 2021.

**ZHOU, Hong**, David R. Cheriton School of Computer Science, January 1, 2021 – December 31, 2021.

**B. ADMINISTRATIVE APPOINTMENTS**

**LYSY, Martin**, Associate Dean, Computing, Office of the Dean, January 1, 2021 – June 30, 2024.

**VAVASIS, Stephen**, Director of Data Science (Graduate), January 1, 2021 – August 31, 2021.

**B.1 Change in appointment**

**LI, Yuying**, Director of Data Science (Graduate), David R. Cheriton School of Computer Science (*ref.* Dean's Report to Senate, June 2019)

From: January 1, 2019 – December 31, 2021

To: January 1, 2019 – December 31, 2020

**C. SABBATICALS (for approval by the Board of Governors)**

**WILLMOT, Gord** (Professor), Dept. of Statistics and Actuarial Science, September 1, 2021 – August 31, 2022, with 85% salary.



Mark Giesbrecht  
Dean

**UNIVERSITY OF WATERLOO**  
**REPORT OF THE DEAN OF SCIENCE TO SENATE**  
**January 18, 2021**

**For information:**

**A. APPOINTMENTS**

**Definite Term Reappointment – Full-Time**

**PHAN, Thai**, Assistant Professor, Department of Earth and Environmental Sciences, March 1, 2021 to August 31, 2021. [B. Eng., Ho Chi Minh City – University of Technology, Vietnam (2004); M.Eng., Asian Institute of Technology, Thailand (2007); Ph.D. Trent University (2012).]

**Adjunct Appointments**  
**Graduate Supervision**

**BUTLER, Barbara**, Lecturer, Department of Biology, January 1, 2021 to December 31, 2023.

**GINDER-VOGEL, Matthew**, Associate Professor, Department of Earth and Environmental Sciences, October 1, 2020 to September 30, 2023.

**MASHATAN, Atefeh**, Assistant Professor, Department of Physics and Astronomy, October 1, 2020 to August 31, 2024.

**RODEN, Eric**, Professor, Department of Earth and Environmental Sciences, January 1, 2021 to December 31, 2023.

**Graduate Supervision and Research**

**HICKS, Keegan**, Assistant Professor, Department of Biology, November 16, 2020 to June 30, 2023.

**LEAT, Susan** (Professor Emeritus), Professor, School of Optometry and Vision Science, January 1, 2021 to December 31, 2024.

**Graduate Supervision and Other**

**LAVOIE, Isabelle**, Assistant Professor, Department of Biology, October 1, 2020 to September 30, 2023.

**Graduate Instruction and Graduate Supervision**

**McCARTHY, Lisa**, Associate Professor, School of Pharmacy, November 1, 2020 to October 31, 2023.

**PRETTI, Judene**, Assistant Professor, School of Pharmacy, December 1, 2020 to November 30, 2023.

**Adjunct Reappointments****Other**

**LILLIE, Elaine**, Assistant Professor, School of Pharmacy, January 1, 2021 to December 31, 2021.

**Graduate Supervision**

**SMITH, Richard W.**, Associate Professor, Department of Chemistry, August 1, 2020 to August 31, 2023.

**Research**

**MIRKOVIC, Jelena**, Associate Professor, Department of Chemistry, September 1, 2020 to August 31, 2023.

**Undergraduate Instruction**

**AHMAD, Jauher**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2021.

**BOWLES-JORDAN, Janie**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2023.

**BROWN, Douglas J.**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2023.

**BUTT, Kristi**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2021.

**CHARBONNEAU, Claude**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2023.

**de VILLIERS, Peet**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2021.

**EDWARDS, Donnie**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2023.

**HEINTZMAN, Angela**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2023.

**McCOY, Tracy**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2021.

**PACEY, Dean**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2021.

**PATODIA, Rosemarie**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2023.

**ROBERT-KAPPEL, Noella**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2023.

**SEYMOUR, Nicole**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2023.

**TOLMIE, Bronwyn**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2023.

**WENTZELL, Jason**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2023.

**WONG, Jeffrey**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2023.

**YRIGOYEN-DACRUZ, Lidia**, Assistant Clinical Professor, School of Pharmacy, January 1, 2021 to December 31, 2023.

*Graduate Supervision and Research*

**CAMPBELL, Larry**, Associate Professor, Department of Chemistry, November 1, 2020 to August 31, 2023.

*Undergraduate Instruction, Graduate Instruction, Graduate Supervision*

**CALLENDER, Murchison**, (Professor Emeritus), Professor, School of Optometry and Vision Science, November 1, 2020 to October 31, 2023.

*Undergraduate Instruction, Graduate Instruction, Research*

**PALMAY, Leslie**, Assistant Professor, School of Pharmacy, January 1, 2021 to December 31, 2023.

*Cross-Appointment*

**WU, Yimin**, Assistant Professor, Department of Mechanical and Mechatronics Engineering, cross- appointed to Department of Chemistry, November 1, 2020 to August 31, 2023.

*Cross-Reappointment*

**BEAZELY, Michael A.**, Associate Professor, School of Pharmacy, cross-appointed to Department of Biology, October 1, 2020 to June 30, 2023.

**BROWN, Daniel G.**, Professor, David R. Cheriton School of Computer Science, cross-appointed to Department of Biology, October 1, 2020 to June 30, 2023.

**CHOH, Vivian**, Associate Professor, School of Optometry and Vision Science, cross-appointed to Department of Biology, June 1, 2020 to June 30, 2023.

**CHOU, C. Perry**, Professor, Department of Chemical Engineering, cross-appointed to Department of Biology, October 1, 2020 to June 30, 2023.

**IGBOELI, Okechukwu (Okey)**, Lecturer, Dean of Science Office, cross-appointed to Department of Biology, October 1, 2020 to June 30, 2023.

**NEKKAR RAO, Praveen**, Associate Professor, School of Pharmacy, cross-appointed to Department of Biology, November 1, 2020 to June 30, 2023.

**SANDERSON, Joe**, Associate Professor, Department of Physics and Astronomy, cross-appointed to Department of Chemistry, September 1, 2020 to August 31, 2023.

**SCHIFF, Sherry**, Professor, Department of Earth and Environmental Sciences, cross-appointed to Department of Biology, September 1, 2020 to June 30, 2023.

**SLAVCEV, Roderick**, Associate Professor, School of Pharmacy, cross-appointed to Department of Biology, October 1, 2020 to June 30, 2023.

**WETTIG, Shawn**, Professor, School of Pharmacy, cross-appointed to Department of Chemistry, November 1, 2020 to August 31, 2023.

**Change in Appointment**

**EDGINTON, Andrea**, Associate Director, Grad and Research, School of Pharmacy, end date changed from August 31, 2021 to December 31, 2020.

**Special Appointment**

**Undergraduate Instruction**

**BRAY, Chelsea**, Lecturer, School of Optometry and Vision Science, September 1, 2020 to December 31, 2020.

**BRETZ, Kim**, Lecturer, School of Pharmacy, January 1, 2021 to April 30, 2021.

**DALIDOVICH, David**, Lecturer, Department of Physics and Astronomy, January 1, 2021 to April 30, 2021.

**RICCI, Olivia**, Lecturer, School of Optometry and Vision Science, October 1, 2020 to January 31, 2021.

**WRIGHT, Catherine**, Lecturer, School of Optometry and Vision Science, September 1, 2020 to December 31, 2020.

**Graduate Student Appointed as Part-Time Lecturer**

**RINAS, Karsten**, Lecturer, Department of Biology, January 1, 2021 to April 30, 2021.

**Special Reappointment**

**Undergraduate Instruction**

**CHAUDET, Marcia**, Lecturer, Department of Biology, January 1, 2021 to April 30, 2021.

**GURSKA, Jola**, Department of Biology, January 1, 2021 to April 30, 2021.

**HRYCYSHYN, Matthew**, Lecturer, Department of Biology, January 1, 2021 to April 30, 2021.

**MICHAUD, Wendy**, Lecturer, Department of Biology, January 1, 2021 to April 30, 2021.

**OFFMAN, Elliot**, Lecturer, School of Pharmacy, January 1, 2021 to April 30, 2021.

*Postdoctoral Fellow Reappointed as Lecturer*

**COUGHLAN, Neville**, Lecturer, Department of Chemistry, January 1, 2021 to April 30, 2021.

*Research Associate Reappointed as Lecturer*

**LYNCH, Michael D.J.**, Lecturer, Department of Biology, January 1, 2021 to April 30, 2021.

**B. ADMINISTRATIVE APPOINTMENTS**

**GAMBLE, J-M.**, Associate Director, Graduate and Research, School of Pharmacy, January 1, 2021 to December 31, 2023.

**C. RETIREMENTS**

**BUTLER, Barbara**, Lecturer, Department of Biology, effective January 1, 2021.

**LEAT, Susan**, Professor, School of Optometry and Vision Sciences, effective January 1, 2021.

**FOR APPROVAL BY THE BOARD OF GOVERNORS**

**D. SABBATICAL**

**ROONEY, Rebecca**, Associate Professor, Department of Biology, May 1, 2021 to April 30, 2022, 100% salary arrangements.



R.P. Lemieux  
Dean of Science

**University of Waterloo**  
**SENATE EXECUTIVE COMMITTEE**  
**18 January 2021**

The Senate Executive Committee met on 4 January 2021 and agreed to forward the following item to Senate.

**FOR APPROVAL**

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**Appointment of Chancellor Review Committee**

Dominic Barton's first term as chancellor ends 20 June 2021 and, as provided by the *University of Waterloo Act, 1972* [excerpt (section 30, subsections 1-3) reproduced below], he is eligible to serve for a second three-year term. It has been the practice for the Senate Executive Committee to serve as the nominating or review committee. The Executive Committee is agreeable to again serve as the review committee and forwards this recommendation to Senate for approval.

**Motion:**

That Senate appoint its Executive Committee as the Chancellor Review Committee.

**CHANCELLOR**

Chancellor, Election of	30	1. There shall be a Chancellor of the University who shall be elected by the Senate in such manner as the Senate shall determine.
Term of Office		2. The term of office of the Chancellor shall be three years, provided that he shall be eligible for re-election for one additional term.
Duties		3. The Chancellor shall preside at all Convocations and shall admit to degrees, diplomas and certificates such candidates including the recipients of honorary degrees, as may be designated by the Senate.

Feridun Hamdullahpur  
Chair



**University of Waterloo**  
**SENATE GRADUATE & RESEARCH COUNCIL**  
**Report to Senate**  
**18 January 2021**

Senate Graduate & Research Council met on 9 November 2020 and 14 December 2020 and agreed 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 PROGRAM**

#### **Faculty of Arts**

- 1. Motion:** To approve a new Doctor of Philosophy (PhD) in Political Science, including optional experiential stream, effective 1 September 2021, as presented in the supporting materials (uploaded to Senate SharePoint site).

**Rationale:** The PhD in Political Science is a new research program within the Faculty of Arts that will integrate rigorous requirements and training consistent with disciplinary norms while offering innovative features, flexibility, and professional development designed to prepare students for both traditional academic careers and non-academic career paths.

The research-based program will require the completion of 3.0 units of courses in the first year of study (one course is 0.5 units), a comprehensive examination, mandatory professional development milestones, a thesis proposal and oral defence, and a thesis (in a traditional format or an alternative format, such as a publication model consisting of at least three sole-authored published [or in press] works) and oral thesis defence. There will be a regular and co-op option. The regular, full-time program is designed to be completed as a four-year degree. It will be available to both full-time and part-time students.

### **PROGRAM CHANGES**

#### **Faculty of Applied Health Sciences**

- 1. Motion:** To approve the discontinuation of the collaborative doctoral program in Work and Health in (a) Kinesiology, (b) Recreation and Leisure Studies, and (c) School of Public Health and Health Systems, effective 1 January 2021, as presented at Attachment 1.

**Rationale:** The AHS collaborative program in Work and Health has had low enrolment in the past five years and Faculty whose research interests center around Work and Health feel that the student's interests are fully accommodated within the Department-specific program.

#### **Faculty of Engineering**

- 1. Motion:** To approve the discontinuation of the (type 2) Graduate Diploma (GDip) in Software Engineering within the Department of Electrical and Computer Engineering (ECE), effective 1 January 2021, as presented at Attachment 2.

**Rationale:** The MEng in ECE program will be offering "Graduate Specializations" in a given area, in place of the currently offered Graduate Diplomas. The change from Graduate Diplomas to Graduate Specializations is to better reflect the nature of the course packaging and also to bring the credentialization of focused course selection into line with Faculty of Engineering objectives.

## GRADUATE STUDIES - ACADEMIC CALENDAR CHANGES

- 1. Motion:** To approve updates to the [Enrolment and Time Limits](#) regulation, effective 1 January 2021, as presented at Attachment 3.

**Rationale:** The wording in the Graduate Studies Academic Calendar (GSAC) sections that relate to time limits and program extensions is being updated to: reflect current practices and increase clarity. The changes noted here in the GSAC are being made in concert with changes to the GSPA webpage outlining the program extension process wherein the rationale for this process is highlighted.

*/mh kw* Jeff Casello

Associate Vice-President, Graduate Studies and  
Postdoctoral Affairs

Charmaine Dean

Vice President, Research & International

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

**Faculty:** Applied Health Sciences

**Program:** Doctor of Philosophy (PhD) in Kinesiology - Work and Health

**Program contact name(s):** Andrew Laing

**Form completed by:**

**Description of proposed changes:**

Note: changes to courses and milestones also require the completion/submission of the SGRC Course/Milestone-New/Revision/Inactivation form ([PC docx version](#) or [MAC docx version](#)).

*Discontinue the collaborative program in Work and Health.*

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

**Rationale for change(s):** The AHS collaborative program in Work and Health has had low enrolment in the past five years and Faculty whose research interests centre around Work and Health feel that the student's interests are fully accommodated within the Department-specific program.

**Proposed effective date:** Term: Winter Year: 2021

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

<https://uwaterloo.ca/graduate-studies-academic-calendar/applied-health-sciences/department-kinesiology/doctor-philosophy-phd-kinesiology-work-and-health>

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p><b><del>DOCTOR OF PHILOSOPHY (PHD) IN KINESIOLOGY - WORK AND HEALTH</del></b></p> <p><b><del>Program information</del></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Admit term(s)</del> <ul style="list-style-type: none"> <li><input type="radio"/> <del>Fall</del></li> </ul> </li> <li><input type="checkbox"/> <del>Delivery mode</del> <ul style="list-style-type: none"> <li><input type="radio"/> <del>On-campus</del></li> </ul> </li> <li><input type="checkbox"/> <del>Length of program</del> <ul style="list-style-type: none"> <li><input type="radio"/> <del>Must be completed within 12 terms (full time) from completion of the Master's degree.</del></li> <li><input type="radio"/> <del>Students must have permission of the Department Graduate Committee to continue enrolment beyond term limits.</del></li> </ul> </li> </ul>	

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<ul style="list-style-type: none"> <li><del>o Students are expected to devote as much time as is necessary to complete their thesis within this timeline.</del></li> <li><del>o Students must be continuously enrolled at the University to the end of the term in which they complete the degree requirements.</del></li> <li><del>□ Program type</del> <ul style="list-style-type: none"> <li><del>o Collaborative</del></li> <li><del>o Doctoral</del></li> <li><del>o Research</del></li> </ul> </li> <li><del>□ Registration option(s)</del> <ul style="list-style-type: none"> <li><del>o Full time</del></li> <li><del>o Part time</del></li> </ul> </li> <li><del>□ Study option(s)</del> <ul style="list-style-type: none"> <li><del>o Thesis</del></li> </ul> </li> </ul> <p><b>Admission requirements</b></p> <ul style="list-style-type: none"> <li><del>□ Minimum requirements</del> <ul style="list-style-type: none"> <li><del>o A Master's degree with a minimum 75% average in a relevant field (normally Kinesiology, Recreation and Leisure Studies, or Health Studies and Gerontology, but other degrees in Life, Behavioural and Social Sciences could be suitable as well).</del></li> <li><del>o Letter stating research interests and why the student wishes to pursue graduate studies.</del></li> </ul> </li> <li><del>□ Application materials</del> <ul style="list-style-type: none"> <li><del>o Curriculum vitae</del></li> <li><del>o Supplementary information form</del></li> <li><del>o Transcript(s)</del></li> <li><del>o Writing sample</del> <ul style="list-style-type: none"> <li><del>□ Submit one copy of a term paper, research project or thesis written during the last year of their master's studies.</del></li> </ul> </li> </ul> </li> <li><del>□ References</del> <ul style="list-style-type: none"> <li><del>o Number of references: 3</del></li> <li><del>o Type of references: from faculty members who taught the student while in a Master's program. Normally, 1 must be from the Master's supervisor.</del></li> </ul> </li> <li><del>□ English language proficiency (ELP) (if applicable)</del></li> </ul> <p><b>Degree requirements</b></p> <p><del>Thesis option:</del></p> <ul style="list-style-type: none"> <li><del>□ Graduate Academic Integrity Module (Graduate AIM)</del></li> </ul>	

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Courses</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Students will normally complete a minimum of 2.00 units of graduate courses (e.g. 4 courses each at a 0.50 unit weight), that must include the courses listed below. All graduate courses must be assigned a numerical grade. Students must obtain an average of at least 75% in the set of courses which they present in fulfilment of course requirements. A grade below 70% on any individual course or an average below 75% on the set of courses for the degree will result in a review of the student's status by the Department Graduate Committee. If a student receives a grade in any individual course below 60%, the Department Graduate Committee review may result in the requirement to withdraw from the program. If the student is permitted to proceed, any course with a grade below 60% will not be eligible towards the degree requirements, thus requiring the course to be repeated or additional course work to be completed.</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>KIN 730 Fundamentals of Work and Health (0.50 units)</del></li> <li><input type="checkbox"/> <del>KIN 731 Approaches to Research in Work and Health (0.50 units)</del></li> <li><input type="checkbox"/> <del>0.50 units of graduate level statistics/research methods</del></li> </ul> </li> <li><input type="checkbox"/> <del>Students must also complete the following CR/NCR graduate seminars:</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>KIN 732A Work and Health Research Seminar I</del></li> <li><input type="checkbox"/> <del>KIN 732B Work and Health Research Seminar II</del></li> </ul> </li> </ul> </li> <li><input type="checkbox"/> <del>Link(s) to courses</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Kinesiology (KIN) courses</del></li> <li><input type="checkbox"/> <del>Graduate course search</del></li> </ul> </li> <li><input type="checkbox"/> <del>Academic Integrity Workshop</del></li> <li><input type="checkbox"/> <del>PhD Professional Development Seminar</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Students are required to complete a series of professional development seminars and workshops throughout their program of study.</del></li> </ul> </li> <li><input type="checkbox"/> <del>PhD Comprehensive Examination</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Students are required to meet the University-level PhD Comprehensive Examination minimum requirements outlined in the "Minimum requirements for the PhD degree" section of the</del></li> </ul> </li> </ul>	

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p><del>Graduate Studies Academic Calendar (GSAC), with certain noted differences that are specific to the Faculty of Applied Health Sciences</del></p> <p><del>Comprehensive Examination minimum requirements:</del></p> <ul style="list-style-type: none"> <li><del>□ Comprehensive examination purpose: Consistent with University-level minimum requirements. Note: In the Faculty of Applied Health Sciences, the novel research topic is tested through a separate thesis proposal process.</del></li> <li><del>□ Timing: Consistent with University-level minimum requirements.</del></li> <li><del>□ Committee: Consistent with University-level minimum requirements with the exception that in the Faculty of Applied Health Sciences, the composition of the comprehensive examining committee will be approved by the Associate Chair or Director, Graduate Studies for the student's Department/School, as delegated by the Associate Dean, Graduate Studies.</del></li> <li><del>□ Who Chairs an examination: Consistent with University-level minimum requirements.</del></li> <li><del>□ Format / Content: Consistent with University-level minimum requirements.</del></li> <li><del>□ Academic integrity: Consistent with University-level minimum requirements.</del></li> </ul> <p><del>□ PhD Thesis</del></p> <ul style="list-style-type: none"> <li><del>○ Thesis Proposal: Following successful completion of the comprehensive exam, each student will be required to compete a PhD thesis proposal. The proposal involves a written document related to the student's thesis area. The thesis project and proposal are developed in consultation with the supervisor. Each student must orally defend the thesis proposal to the Advisory Committee, consisting of the supervisor (or co-supervisors), and two other members (one of which must be from a home Department within the</del></li> </ul>	

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p><del>collaborative program in Work and Health). A chair to oversee the oral thesis proposal defense will be appointed by the home Department.</del></p> <ul style="list-style-type: none"> <li><del>o Thesis Defence: Each student is required to submit a thesis embodying the results of original research carried out under the direction of an Advisory Committee headed by the supervisor. The candidate defends the thesis before an Examining Committee approved by the Department Graduate Committee. The Examining Board should consist of the Advisory Committee (see thesis proposal above), an additional member that is external to the Department (referred to as the internal-external), and finally an additional member that is external to the University (referred to as the external examiner).</del></li> <li><del>o The thesis will be in an area relevant to Work and Health.</del></li> </ul> <p><input type="checkbox"/> <del>Other requirements</del></p> <ul style="list-style-type: none"> <li><del>o Student evaluation: A review of each student's progress by both the supervisor and Department Graduate Committee takes place each year. Students are evaluated on several criteria, including performance in courses, progress towards course and milestone completion, thesis progress, scholarly activity, and research and teaching assistantship activity.</del></li> </ul>	

**How will students currently registered in the program be impacted by these changes?** There are no students currently enrolled in the program.

**Department/School approval date** (06//23/20):

**Reviewed by GSPA** (for GSPA use only) ☐ date (mm/dd/yy):

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

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

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

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

**Faculty:** Applied Health Sciences

**Program:** Doctor of Philosophy (PhD) in Recreation and Leisure Studies - Work and Health

**Program contact name(s):** Bryan Grimwood

**Form completed by:**

**Description of proposed changes:**

Note: changes to courses and milestones also require the completion/submission of the SGRC Course/Milestone-New/Revision/Inactivation form ([PC docx version](#) or [MAC docx version](#)).

*Discontinue the collaborative program in Work and Health.*

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

**Rationale for change(s):** The AHS collaborative program in Work and Health has had low enrolment in the past five years and Faculty whose research interests centre around Work and Health feel that the student's interests are fully accommodated within the Department-specific program.

**Proposed effective date:** Term: Winter Year: 2021

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

<https://uwaterloo.ca/graduate-studies-academic-calendar/applied-health-sciences/department-recreation-and-leisure-studies/doctor-philosophy-phd-recreation-and-leisure-studies-work-and-health>

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p><b><del>DOCTOR OF PHILOSOPHY (PHD) IN RECREATION AND LEISURE STUDIES - WORK AND HEALTH</del></b></p> <p><b><del>Program information</del></b></p> <p><del><input type="checkbox"/> Admit term(s)</del>  <del><input type="radio"/> Fall</del></p> <p><del><input type="checkbox"/> Delivery mode</del>  <del><input type="radio"/> On-campus</del></p> <p><del><input type="checkbox"/> Length of program</del>  <del><input type="radio"/> Must be completed within the following time periods from completion of the Master's degree unless an extension has been granted:</del>  <del><input type="checkbox"/> Full-time: 12 terms</del>  <del><input type="checkbox"/> Part-time: 18 terms</del></p>	



Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<div data-bbox="138 136 479 430"> <ul style="list-style-type: none"> <li><input type="checkbox"/> Program type               <ul style="list-style-type: none"> <li><input type="radio"/> Collaborative</li> <li><input type="radio"/> Doctoral</li> <li><input type="radio"/> Research</li> </ul> </li> <li><input type="checkbox"/> Registration option(s)               <ul style="list-style-type: none"> <li><input type="radio"/> Full-time</li> <li><input type="radio"/> Part-time</li> </ul> </li> <li><input type="checkbox"/> Study option(s)               <ul style="list-style-type: none"> <li><input type="radio"/> Thesis</li> </ul> </li> </ul> </div> <div data-bbox="89 468 435 499"> <p><b>Admission requirements</b></p> </div> <div data-bbox="138 537 787 1375"> <ul style="list-style-type: none"> <li><input type="checkbox"/> Minimum requirements               <ul style="list-style-type: none"> <li><input type="radio"/> Normally a Master's degree with a minimum 75% average in a field that is relevant to the area of work and health (normally kinesiology, recreation and leisure studies or health studies and gerontology, but other degrees in life and social sciences could be suitable as well).</li> </ul> </li> <li><input type="checkbox"/> Application materials               <ul style="list-style-type: none"> <li><input type="radio"/> Résumé/Curriculum vitae                   <ul style="list-style-type: none"> <li><input type="checkbox"/> Indicating past academic and professional experience.</li> </ul> </li> <li><input type="radio"/> Supplementary information form</li> <li><input type="radio"/> Transcript(s)</li> <li><input type="radio"/> Writing sample                   <ul style="list-style-type: none"> <li><input type="checkbox"/> Students must submit a copy of previous academic work, such as a term paper, published manuscript or master's thesis.</li> </ul> </li> </ul> </li> <li><input type="checkbox"/> References               <ul style="list-style-type: none"> <li><input type="radio"/> Number of references: 3</li> <li><input type="radio"/> Type of references: academic</li> </ul> </li> <li><input type="checkbox"/> English language proficiency (ELP) (if applicable)</li> </ul> </div> <div data-bbox="89 1413 386 1444"> <p><b>Degree requirements</b></p> </div> <div data-bbox="186 1482 370 1514"> <p>Thesis option:</p> </div> <div data-bbox="138 1551 787 1913"> <ul style="list-style-type: none"> <li><input type="checkbox"/> Graduate Academic Integrity Module (Graduate AIM)</li> <li><input type="checkbox"/> Courses               <ul style="list-style-type: none"> <li><input type="radio"/> Students must obtain credit for each of the courses listed below. They will normally complete a minimum of 4 half (0.50 credit) courses, consisting of 2 core/fundamentals course, a graduate-level statistics/research methods course, and an elective which will be related to work and health. In addition,</li> </ul> </li> </ul> </div>	

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p><del>students will participate in the doctoral research seminar in work and health.</del></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Foundational Knowledge on Work and Health</del></li> <li><input type="checkbox"/> <del>Approaches to Research in Work and Health</del></li> <li><input type="checkbox"/> <del>A Graduate Level Course in Research Methods or Statistics</del></li> <li><input type="checkbox"/> <del>1 elective course (see list of electives below)</del></li> <li><input type="checkbox"/> <del>Work and Health Seminar (graded on credit basis)</del></li> </ul> <p><del>o Elective courses:</del></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>REC 601 Theoretical and Methodological Issues in Leisure Research</del></li> <li><input type="checkbox"/> <del>REC 603 Leisure and Social Policy</del></li> <li><input type="checkbox"/> <del>REC 605 Social and Psychological Analysis of Leisure</del></li> <li><input type="checkbox"/> <del>REC 608 Gender, Leisure &amp; the Use of Time</del></li> <li><input type="checkbox"/> <del>REC 610 Administrative Practice in Recreational Service</del></li> <li><input type="checkbox"/> <del>REC 672 Quantitative Research Data Analysis and Interpretation</del></li> <li><input type="checkbox"/> <del>REC 673 Qualitative Research Data Analysis and Interpretation</del></li> <li><input type="checkbox"/> <del>REC 792 Advanced Research Methods (PhD only)</del></li> <li><input type="checkbox"/> <del>REC 798 Advanced Topics in Leisure Studies (PhD only)</del></li> <li><input type="checkbox"/> <del>KIN 601 Muscle Physiology</del></li> <li><input type="checkbox"/> <del>KIN 602 Respiratory and Cardiovascular Physiology</del></li> <li><input type="checkbox"/> <del>KIN 616 Neural Control of Human Movement</del></li> <li><input type="checkbox"/> <del>KIN 620 Ergonomic Aspects of Occupational Musculoskeletal Injuries</del></li> <li><input type="checkbox"/> <del>KIN 631A Introduction to Statistics</del></li> <li><input type="checkbox"/> <del>KIN 631C Correlation and Regression</del></li> <li><input type="checkbox"/> <del>KIN 631E Analysis of Variance I</del></li> <li><input type="checkbox"/> <del>KIN 631F Analysis of Variance II</del></li> <li><input type="checkbox"/> <del>KIN 631G Biological Deterministic Modeling and Signal Processing</del></li> <li><input type="checkbox"/> <del>KIN 651 Motor Learning</del></li> <li><input type="checkbox"/> <del>KIN 656 Neurobehavioural Analyses of Perceptual and Motor Deficits</del></li> </ul>	

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<ul style="list-style-type: none"> <li><input type="checkbox"/> <del>KIN 727 Low Back Disorders: Optimizing Prevention, Rehabilitation and Performance</del></li> <li><input type="checkbox"/> <del>HSG 601 Lifespan Approaches to Health Promotion and Disease Prevention</del></li> <li><input type="checkbox"/> <del>HSG 604 Evaluation of Health and Human Services Programs</del></li> <li><input type="checkbox"/> <del>HSG 605A Introduction to Statistics</del></li> <li><input type="checkbox"/> <del>HSG 605C Correlation and Regression</del></li> <li><input type="checkbox"/> <del>HSG 605E E Analysis of Variance I</del></li> <li><input type="checkbox"/> <del>HSG 605F Analysis of Variance II</del></li> <li><input type="checkbox"/> <del>HSG 606 Epidemiological Methods</del></li> <li><input type="checkbox"/> <del>PHS 604 Public Health and the Environment (online course)</del></li> <li><input type="checkbox"/> <del>Link(s) to courses</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Recreation and Leisure Studies (REC) courses</del></li> <li><input type="checkbox"/> <del>Graduate course search</del></li> </ul> </li> <li><input type="checkbox"/> <del>Academic Integrity Workshop</del></li> <li><input type="checkbox"/> <del>PhD Research Seminar</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Students will participate in the PhD Research Seminar in Work and Health.</del></li> </ul> </li> <li><input type="checkbox"/> <del>Research Presentation</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>All PhD students in the Department of Recreation and Leisure Studies in their second year or later must deliver a public research presentation to faculty and students during their doctoral program. Forums at which this milestone can be completed are the PhD Research Seminar or an independently arranged departmental seminar (excludes conferences and symposia). Supervisor approval/confirmation of completion of this milestone is required.</del></li> </ul> </li> <li><input type="checkbox"/> <del>PhD Comprehensive Examination</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Students are required to meet the University-level PhD Comprehensive Examination minimum requirements outlined in the "Minimum requirements for the PhD degree" section of the Graduate Studies Academic Calendar (GSAC), with certain noted differences that are specific to the Faculty of Applied Health Sciences Comprehensive Examination minimum requirements:</del></li> </ul> </li> </ul>	

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Comprehensive examination purpose: Consistent with University-level minimum requirements. Note: In the Faculty of Applied Health Sciences, the novel research topic is tested through a separate thesis proposal process.</del></li> <li><input type="checkbox"/> <del>Timing: Consistent with University-level minimum requirements.</del></li> <li><input type="checkbox"/> <del>Committee: Consistent with University-level minimum requirements with the exception that in the Faculty of Applied Health Sciences, the composition of the comprehensive examining committee will be approved by the Associate Chair or Director, Graduate Studies for the student's Department/School, as delegated by the Associate Dean, Graduate Studies.</del></li> <li><input type="checkbox"/> <del>Who Chairs an examination: Consistent with University-level minimum requirements.</del></li> <li><input type="checkbox"/> <del>Format / Content: Consistent with University-level minimum requirements.</del></li> <li><input type="checkbox"/> <del>Academic integrity: Consistent with University-level minimum requirements.</del></li> <li><input type="checkbox"/> <del>PhD Thesis <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>A PhD thesis proposal is required of all PhD students after passing the comprehensive examinations, and before proceeding to data collection. The proposal should contain a detailed statement of the research problem and its significance for a body of leisure-related theory, a precise account of the methodology or research techniques to be employed, plus a detailed outline of the proposed data analyzes. The candidate will be required to present and defend this proposal before the thesis committee. The final thesis report based on the completed research must also be successfully defended to satisfy the thesis requirement. The PhD thesis advisory committee is normally comprised of a minimum of three members including</del></li> </ul> </del></li> </ul>	

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p><del>the supervisor, one faculty member appointed in the student's department, and one other member from either the student's department or from another department within the University. Normally, any additional members of the advisory committee must have academic appointment. The thesis advisory committee must be approved by the Associate Chair, Graduate Studies. The proposal will be defended before the thesis advisory committee. Upon completion of the thesis, the final document will be defended before a five person Examination Board made up of the supervisor, three other members of the University community (two of whom are normally the advisory committee members and one other individual from outside the home department), and an external examiner.</del></p> <ul style="list-style-type: none"> <li><del>○ The thesis will be on a topic in an area relevant to Work and Health.</del></li> <li><input type="checkbox"/> <del>Other requirements</del> <ul style="list-style-type: none"> <li><del>○ Student evaluation: a review of each student's progress takes place during the month of May each year. Students are evaluated on several criteria, including performance in courses, progress with regard to the comprehensive examination and thesis work and, where appropriate, reports submitted by the students regarding their research and teaching assistantship activity. A grade average of at least 75% must be maintained.</del></li> </ul> </li> </ul>	

**How will students currently registered in the program be impacted by these changes?** There are no students currently enrolled in the program.

**Department/School approval date** (06/30/20):

**Reviewed by GSPA** (for GSPA use only) ☐ date (mm/dd/yy):

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

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

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

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

**Faculty:** Applied Health Sciences

**Program:** Doctor of Philosophy (PhD) in Public Health and Health Systems - Work and Health

**Program contact name(s):** Ellen MacEachen

**Form completed by:**

**Description of proposed changes:**

Note: changes to courses and milestones also require the completion/submission of the SGRC Course/Milestone-New/Revision/Inactivation form ([PC docx version](#) or [MAC docx version](#)).

*Discontinue the collaborative program in Work and Health.*

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

**Rationale for change(s):** The AHS collaborative program in Work and Health has had low enrolment in the past five years and Faculty whose research interests centre around Work and Health feel that the student's interests are fully accommodated within the Department-specific program.

**Proposed effective date:** Term: Winter Year: 2021

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

<https://uwaterloo.ca/graduate-studies-academic-calendar/applied-health-sciences/school-public-health-and-health-systems/doctor-philosophy-phd-public-health-and-health-systems-work-and-health>

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p><del><b>DOCTOR OF PHILOSOPHY (PHD) IN PUBLIC HEALTH AND HEALTH SYSTEMS - WORK AND HEALTH</b></del></p> <p><del><b>Program information</b></del></p> <p><del><input type="checkbox"/> Admit term(s)-</del>  <del><input type="radio"/> Fall</del></p> <p><del><input type="checkbox"/> Delivery mode-</del>  <del><input type="radio"/> On-campus</del></p> <p><del><input type="checkbox"/> Length of program-</del>  <del><input type="radio"/> Must be completed within the following time periods from completion of the Master's degree unless an extension has been granted:</del>  <del><input type="checkbox"/> Full time: 12 terms</del></p>	

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<div data-bbox="329 128 626 157"> <input type="checkbox"/> <del>Part-time: 18 terms</del> </div> <div data-bbox="138 161 454 457"> <input type="checkbox"/> <del>Program type</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Collaborative</del></li> <li><input type="checkbox"/> <del>Doctoral</del></li> <li><input type="checkbox"/> <del>Research</del></li> </ul> <input type="checkbox"/> <del>Registration option(s)</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Full-time</del></li> <li><input type="checkbox"/> <del>Part-time</del></li> </ul> <input type="checkbox"/> <del>Study option(s)</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Thesis</del></li> </ul> </div> <div data-bbox="90 499 435 529"> <b>Admission requirements</b> </div> <div data-bbox="138 571 795 1501"> <input type="checkbox"/> <del>Minimum requirements</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Normally a Master's degree with a minimum 75% average in a field that is relevant to the area of work and health (normally kinesiology, recreation and leisure studies or health studies and gerontology, but other degrees in life, behavioural and social sciences could be suitable as well).</del></li> <li><input type="checkbox"/> <del>Submit a letter indicating reasons for pursuing graduate studies and a written statement outlining research interests.</del></li> </ul> <input type="checkbox"/> <del>Application materials</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Résumé/Curriculum vitae</del></li> <li><input type="checkbox"/> <del>Supplementary information form</del></li> <li><input type="checkbox"/> <del>Transcript(s)</del></li> <li><input type="checkbox"/> <del>Writing sample</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Students must submit a copy of previous academic work, such as copies of preprints, reprints, or master's thesis, or other evidence of written scholarly work.</del></li> </ul> </li> </ul> <input type="checkbox"/> <del>References</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Number of references: 3</del></li> <li><input type="checkbox"/> <del>Type of references: academic</del></li> </ul> <input type="checkbox"/> <del>English language proficiency (ELP) (if applicable)</del> </div> <div data-bbox="90 1543 383 1572"> <b>Degree requirements</b> </div> <div data-bbox="185 1610 370 1640"> <del>Thesis option:</del> </div> <div data-bbox="138 1680 766 1938"> <input type="checkbox"/> <del>Graduate Academic Integrity Module (Graduate AIM)</del> <input type="checkbox"/> <del>Courses</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>With the exception of HLTH 701- Interdisciplinary Seminar in Public Health and Health Systems, students must fulfill the minimum requirements of the PhD program in the School of</del></li> </ul> </div>	

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p><del>Public Health and Health Systems (SPHHS) and will normally complete a minimum of 9 one-term (0.50 unit) graduate courses beyond an Honours Bachelor degree, including at least 4 courses beyond the Master's degree. Course requirements are as follows:</del></p> <ul style="list-style-type: none"> <li><del>□ HLTH 730 Fundamentals of Work and Health</del></li> <li><del>□ HSG 731 Approaches to Research in Work and Health</del></li> <li><del>□ 1 graduate-level statistics/research methods course (1 of HLTH 704, HLTH 705, HLTH 706, or HLTH 719) with assignments and major projects focused on work and health</del></li> <li><del>□ 1 additional elective course related to work and health</del></li> <li><del>○ Students must also complete the following CR/NCR graduate seminars:</del> <ul style="list-style-type: none"> <li><del>□ HSG 732A Work and Health Research Seminar I and HLTH 732B Work and Health Research Seminar II</del></li> </ul> </li> <li><del>○ At a minimum, students must obtain an average of 75% or higher in aggregate on the courses presented in fulfilment of the degree requirements. Grades on all courses presented to fulfill the degree requirements must be 70% or higher. A grade below 70% in any course or failing to maintain an average of 75% will necessitate a review of the student's status by the School and may result in a student being required to complete additional coursework or being required to withdraw from the program. The School reserves the right to stipulate additional coursework if it is necessary for the student's preparation.</del></li> <li><del>□ Link(s) to courses</del> <ul style="list-style-type: none"> <li><del>○ Health Studies (HLTH) courses</del></li> <li><del>○ Graduate course search</del></li> </ul> </li> <li><del>□ Academic Integrity Workshop</del></li> <li><del>□ PhD Comprehensive Examination</del> <ul style="list-style-type: none"> <li><del>○ Students are required to meet the University-level PhD Comprehensive Examination minimum requirements outlined in the "Minimum requirements for the PhD degree" section of the Graduate Studies Academic Calendar (GSAC), with certain noted differences that are specific to the Faculty of</del></li> </ul> </li> </ul>	



Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p>Applied Health Sciences Comprehensive Examination minimum requirements:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Comprehensive examination purpose: Consistent with University-level minimum requirements. Note: In the Faculty of Applied Health Sciences, the novel research topic is tested through a separate thesis proposal process.</li> <li><input type="checkbox"/> Timing: Consistent with University-level minimum requirements.</li> <li><input type="checkbox"/> Committee: Consistent with University-level minimum requirements with the exception that in the Faculty of Applied Health Sciences, the composition of the comprehensive examining committee will be approved by the Associate Chair or Director, Graduate Studies for the student's Department/School, as delegated by the Associate Dean, Graduate Studies.</li> <li><input type="checkbox"/> Who Chairs an examination: Consistent with University-level minimum requirements.</li> <li><input type="checkbox"/> Format / Content: Consistent with University-level minimum requirements.</li> <li><input type="checkbox"/> Academic integrity: Consistent with University-level minimum requirements.</li> </ul> <p>o In addition to the University-level and Faculty-level PhD Comprehensive Examination minimum requirements, students in the PhD in Public Health and Health Systems – Work and Health program must also note the following:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The purpose of the comprehensive examination is to test the breadth and depth of the candidate's comprehension of the methodological and theoretical aspects of their field of study. The process is designed to enable candidates to acquire a solid grounding in their core area of public health research that will provide a foundation for undertaking</li> </ul>	

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p>dissertation research. The examination will also test the candidate's ability to critically evaluate the literature and synthesize information from sources to identify knowledge gaps and recommend solutions.</p> <p><del>□ The comprehensive examination consists of three written questions followed by an oral examination. The written questions must be completed within eight weeks from the start date and the oral defence should be completed within four weeks of submission of the written examination.</del></p> <p><del>□ PhD Thesis</del></p> <ul style="list-style-type: none"> <li><del>○ A PhD thesis on an approved topic is required, which is to be defended in an oral examination. The research is to be conducted under the supervision of the student's supervisor and the advisory committee. The PhD thesis advisory committee consists of at least three members, with the supervisor and at least one other committee member being faculty from within the SPHHS. The proposal will be defended before the thesis committee; however, upon completion of the thesis, the final document will be defended before a five person Examination Board.</del></li> <li><del>○ The thesis will be on a topic in an area relevant to work and health.</del></li> </ul> <p><del>□ Other requirements</del></p> <ul style="list-style-type: none"> <li><del>○ Student evaluation: a review of each student's progress takes place during the month of May each year. Students are evaluated on several criteria, including performance in courses, progress with regard to the comprehensive examination and thesis work and, where appropriate, reports submitted by the students regarding their research and teaching assistantship activity.</del></li> </ul>	

**How will students currently registered in the program be impacted by these changes?** The three students enrolled in the program in the School have completed course and milestone obligations; they will not be affected by the change and will receive the PhD in Public Health and Health Systems - Work and Health degree upon degree completion

*Section will expand to accommodate content. Please include details here.*

**Department/School approval date** (06/22/20):

**Reviewed by GSPA** (for GSPA use only) ☐ date (mm/dd/yy):

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

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

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

Senate Graduate and Research Council  
Attachment 2 (Regular)



UNIVERSITY OF WATERLOO  
FACULTY OF ENGINEERING

**MEMO**

TO: Kathy Winter, Assistant University Secretary & Privacy Officer  
Secretariat

FROM: S. Sivoththaman, Associate Dean, Graduate Studies  
Faculty of Engineering

RE: Senate Graduate and Research Council Agenda

DATE: October 26, 2020

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Please place the following motion forward for approval at the next meeting of SGRC. These motions were approved by EFC on October 19, 2020.

Items for Approval:

1. The department of **Electrical and Computer Engineering** would like to make the following calendar changes:
  - a. Discontinue (type 2) Graduate Diploma (GDip) in Software Engineering

Rationale for Request:

- a. The MEng in ECE program will be offering “Graduate Specializations” in a given area, in place of the currently offered Graduate Diplomas. The change from Graduate Diplomas to Graduate Specializations is to better reflect the nature of the course packaging and also to bring the credentialization of focused course selection into line with Faculty of Engineering objectives. Consequently, ECE will be discontinuing the existing Graduate Diplomas offered with the MEng. In their place, Graduate Specializations have been proposed.

Your attention to these matters is kindly appreciated.

A handwritten signature in blue ink, appearing to be 'Siva Sivoththaman'.

Siva Sivoththaman

SS/em

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

**Faculty:** Engineering

**Program:** Graduate Diploma (GDip) in Software Engineering

**Program contact name(s):** Kankar Bhattacharya, Jessica Rossi

**Form completed by:** Jessica Rossi

**Description of proposed changes:**

Note: changes to courses and milestones also require the completion/submission of the SGRC Course/Milestone-New/Revision/Inactivation form ([PC docx version](#) or [MAC docx version](#)).

*Discontinue (type 2) Graduate Diploma (GDip) in Software Engineering.*

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

**Rationale for change(s):**

*The MEng in ECE program will be offering "Graduate Specializations" in a given area, in place of the currently offered Graduate Diplomas. The change from Graduate Diplomas to Graduate Specializations is to better reflect the nature of the course packaging and also to bring the credentialization of focused course selection into line with Faculty of Engineering objectives. Consequently, ECE will be discontinuing the existing Graduate Diplomas offered with the MEng. In their place, Graduate Specializations have been proposed*

**Proposed effective date:** Term: Winter Year: 2021

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

<https://uwaterloo.ca/graduate-studies-academic-calendar/engineering/department-electrical-and-computer-engineering/graduate-diploma-gdip-software-engineering>

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p><b><del>GRADUATE DIPLOMA (GDIP) IN SOFTWARE ENGINEERING</del></b></p> <p><b><del>Program information</del></b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Delivery mode</del> <ul style="list-style-type: none"> <li><input type="radio"/> <del>On-campus</del></li> </ul> </li> <li><input type="checkbox"/> <del>Program type</del> <ul style="list-style-type: none"> <li><input type="radio"/> <del>Diploma</del></li> </ul> </li> <li><input type="checkbox"/> <del>Study option(s)</del> <ul style="list-style-type: none"> <li><input type="radio"/> <del>Coursework</del></li> </ul> </li> </ul>	

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p><b>Admission requirements</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Minimum requirements</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>The GDip in Software Engineering is earned in conjunction with the Master of Engineering (MEng) in Electrical and Computer Engineering program.</del></li> </ul> </li> </ul> <p><b>Degree requirements</b> Coursework option:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Courses</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Students will learn the concepts, techniques and methods of modern, effective software development. They will gain knowledge in software specifications, design and testing and will be exposed to data structures and algorithms, networking lower and upper layers, data-base systems, knowledge modeling, computational intelligence, component-based software engineering, re-engineering, and network security.</del></li> <li><input type="checkbox"/> <del>To receive the GDip in Software Engineering, students must successfully complete 3 compulsory courses and 2 elective courses:</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>Compulsory courses:</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>ECE 650 Methods and Tools for Software Engineering</del></li> <li><input type="checkbox"/> <del>ECE 651 Foundations of Software Engineering</del></li> <li><input type="checkbox"/> <del>ECE 653 Software Testing, Quality Assurance and Maintenance</del></li> </ul> </li> <li><input type="checkbox"/> <del>Elective courses (choose 2 from the following list): Note: not all elective courses may be offered each year.</del> <ul style="list-style-type: none"> <li><input type="checkbox"/> <del>ECE 606 Algorithm Design and Analysis</del></li> <li><input type="checkbox"/> <del>ECE 610 Broadband Communication Networks</del></li> <li><input type="checkbox"/> <del>ECE 628 Computer Network Security</del></li> <li><input type="checkbox"/> <del>ECE 654 Software Reliability Engineering</del></li> <li><input type="checkbox"/> <del>ECE 655 Protocols, Software, Issues in Mobile Systems</del></li> </ul> </li> </ul> </li> </ul> </li> </ul>	

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<div> <div> <input type="checkbox"/> <del>ECE 656 Database Systems</del> </div> <div> <input type="checkbox"/> <del>ECE 657 Tools of Intelligent Systems Design</del> </div> <div> <input type="checkbox"/> <del>ECE 658 Component Based Software</del> </div> <div> <div>○ <del>Note: Electrical and Computer Engineering MEng requirements allow for only 3 courses to be taken outside the Department.</del></div> </div> </div>	

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

*Students admitted in Winter 2020 and after, will be directed to the Software Specialization while the GDip will remain in an inactive state, and finally discontinued in Winter 2021.*

**Department/School approval date** (mm/dd/yy): 05/13/2019

**Reviewed by GSPA** (for GSPA use only) ☒ date (mm/dd/yy): 05/29/2020

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

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

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

November 27, 2020

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

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

RE: Graduate Studies Academic Calendar changes

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**Item for approval:**

*Updates to the enrolment and time limits regulations.*

**Description and rationale for proposed changes:**

*The wording in the GSAC sections that relate to time limits and program extensions is being updated to: reflect current practices and increase clarity. The changes noted here in the GSAC are being made in concert with changes to the GSPA webpage outlining the program extension process wherein the rationale for this process is highlighted.*

**Proposed effective date:** Term: Winter Year: 2021

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

<https://uwaterloo.ca/graduate-studies-academic-calendar/general-information-and-regulations/enrolment-and-time-limits#Enrolment>

<https://uwaterloo.ca/graduate-studies-academic-calendar/general-information-and-regulations/enrolment-and-time-limits#Program%20time%20limits>

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
<p><b>Enrolment</b></p> <p>At the University of Waterloo the calendar year is divided into three academic terms known as Fall (September-December), Winter (January-April) and Spring (May-August). Graduate students normally enrol for the first time in September at the beginning of the Fall term. In some cases, a department permits new students to enrol in January or May. To enrol, a new student must have been issued a Letter of Acceptance by Graduate Studies and Postdoctoral Affairs (GSPA) which specifies the date for which enrolment is authorized.</p> <p><b>Enrolment and residence:</b> On successful completion of each four-month period (Fall, Winter, Spring) students advance as follows:</p>	<p><b>Enrolment</b></p> <p>At the University of Waterloo the calendar year is divided into three academic terms known as Fall (September-December), Winter (January-April) and Spring (May-August). Graduate students normally enrol for the first time in September at the beginning of the Fall term. In some cases, a department permits new students to enrol in January or May. To enrol, a new student must have been issued a Letter of Acceptance by Graduate Studies and Postdoctoral Affairs (GSPA) which specifies the date for which enrolment is authorized.</p> <p><b>Enrolment and residence:</b> On successful completion of each four-month period (Fall, Winter, Spring) students advance as follows:</p>



Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:						
<ul style="list-style-type: none"> <li>full-time students will advance at the rate of one term (1.0);</li> <li>part-time students will advance at the rate of one-half term (0.5);</li> <li>inactive enrolment has a term value of 0.0.</li> </ul> <p><b>Term enrolment:</b> Students will not be allowed to enrol after the government reporting date in a term (for relevant dates refer to the Academic deadlines and events page). If they are not enrolled, students will not receive credit for course work completed up to that date and will have to apply for readmission to their program.</p> <p><b>Enrolment and time limits</b> (additional Program time limits information is provided below): Students who have enrolled and paid fees, but have reached the <del>maximum</del> time limits <del>allowed</del> for their program must submit a <u><a href="#">Petition for extension of program time limits form</a></u> to their department/Graduate Studies and Postdoctoral Affairs (GSPA) by the government reporting deadline of each applicable term (departments may have earlier deadlines). Students who fail to do so will be de-registered from their program. Once de-registered, students will be required to re-apply to the program.</p> <p><del>Failure of students to arrange fees as required will cause their enrolment in Graduate Studies to lapse. It may be re-established only if an application for readmission is approved.</del></p> <p>Students who are readmitted to a program must enrol for a minimum of one academic term.</p> <p><b>Program time limits</b></p> <p>The University Senate has set the following program time limits:</p> <table border="1"> <tr> <th colspan="2">Table of program time limits</th></tr> <tr> <th>Program level</th><th>Time limits</th></tr> <tr> <td>Master's</td><td>6.0 terms</td></tr> </table>	Table of program time limits		Program level	Time limits	Master's	6.0 terms	<ul style="list-style-type: none"> <li>full-time students will advance at the rate of one term (1.0);</li> <li>part-time students will advance at the rate of one-half term (0.5);</li> <li>inactive enrolment has a term value of 0.0.</li> </ul> <p><b>Term enrolment:</b> Students will not be allowed to enrol after the government reporting date in a term (for relevant dates refer to the Academic deadlines and events page). If they are not enrolled, students will not receive credit for course work completed up to that date and will have to apply for readmission to their program.</p> <p><b>Enrolment and time limits</b> (additional Program time limits information is provided below): Students who have enrolled and paid fees, but have reached the <u><a href="#">program time limits</a></u> are required to submit a <u><a href="#">Request for Program Extension form</a></u> to their department by the specified dates prior to the term that the extension is required (i.e., Fall: August 1, Winter: December 1; Spring: April 1; unless an academic unit specifies different deadlines). <u>Students who do not submit their form by the specified deadline will be <a href="#">required to withdraw</a> from their program.</u></p> <p><b>Fees:</b> To avoid late fees, students must pay their fees or become <u><a href="#">fees arranged</a></u> by specified dates (see <u><a href="#">Academic deadlines and events page</a></u>). <u>Students who are not fees arranged and have enrolled in classes will have their classes dropped at the end of the third week of classes (end of open enrollment; to request re-enrollment, students must submit a <a href="#">Graduate Studies course drop/add form</a> and make a fee payment arrangement).</u> Students who do not arrange fees by the specified <u><a href="#">last day to arrange tuition and fees</a></u> (i.e., considered to be non-payment of fees) will be withdrawn from their program. Enrollment may be re-established only if an application for readmission is approved.</p> <p>Students who are readmitted to a program must enrol for a minimum of one academic term.</p> <p><b>Program time limits</b></p>
Table of program time limits							
Program level	Time limits						
Master's	6.0 terms						

Current Graduate Studies Academic Calendar content:		Proposed Graduate Studies Academic Calendar content:													
PhD from an Honours Bachelor's	18.0 terms	<div>The University Senate has set the following program time limits:</div> <table><tr><th colspan="2">Table of program time limits</th></tr><tr><th>Program level</th><th>Time limits</th></tr><tr><td>Master's</td><td>6.0 terms</td></tr><tr><td>PhD from an Honours Bachelor's</td><td>18.0 terms</td></tr><tr><td>PhD from a Master's</td><td>12.0 terms</td></tr><tr><td>PhD from an MA (Clinical Psychology)</td><td>15.0 terms</td></tr></table>		Table of program time limits		Program level	Time limits	Master's	6.0 terms	PhD from an Honours Bachelor's	18.0 terms	PhD from a Master's	12.0 terms	PhD from an MA (Clinical Psychology)	15.0 terms
Table of program time limits															
Program level	Time limits														
Master's	6.0 terms														
PhD from an Honours Bachelor's	18.0 terms														
PhD from a Master's	12.0 terms														
PhD from an MA (Clinical Psychology)	15.0 terms														
PhD from a Master's	12.0 terms														
PhD from an MA (Clinical Psychology)	15.0 terms														
<p>Up to 3.0 terms' extension of these time limits may be obtained by petitioning the Graduate Officer of the Department. Further extensions must be approved by the Associate Dean (Graduate Studies) of the Faculty. A <a href="#">Petition for extension of program time limits form</a> may be obtained from department graduate offices or through the Graduate Studies and Postdoctoral Affairs (GSPA) website. If the Petition is not approved, the student will be discontinued from their program. If students fail to submit a Petition approved by the government reporting date of each term (departments may have earlier deadlines), they will be discontinued from their program and must reapply.</p> <p>*For the purposes of these time limits a term is counted as 1.0 per term of full-time enrollment, and 0.5 per term of part-time enrollment.</p>															
		<p>If a student reaches the time limit for their program, they may request to continue their studies beyond these limits by submitting a <a href="#">Request for program extension form</a> to their academic department. This is an important <a href="#">process</a> that is intended to facilitate a conversation about academic progression and a plan for completion of the degree. For the first 3.0 terms after program limits have been reached, the approval process takes place at the Department/School level. Further extensions must be approved by the Associate Dean (Graduate Studies) of the Faculty. If the Request is not approved, the student will be <a href="#">required to withdraw</a> from their program. Given the importance of this process, if students fail to submit a Request by the specified dates (i.e., for a Fall term extension: August 1; for a Winter term extension: December 1; for a Spring term extension: April 1; unless an academic unit specifies different deadlines), they will be <a href="#">required to withdraw</a> from their program. A student receiving a Required to Withdraw decision (resulting from lack of request approval or failure to submit their form) may challenge that decision through <a href="#">Policy 70</a>.</p> <p>*For the purposes of these time limits a term is</p>													

Current Graduate Studies Academic Calendar content:	Proposed Graduate Studies Academic Calendar content:
	counted as 1.0 per term of full-time enrollment, and 0.5 per term of part-time enrollment.

Graduate Operations Committee approval date (mm/dd/yy): 11/23/20

**University of Waterloo**  
**SENATE UNDERGRADUATE COUNCIL**  
**Report to Senate**  
**18 January 2021**

Senate Undergraduate Council met on 10 November 2020 and 15 December 2020 and agreed to forward the following items to Senate for approval in the regular agenda.

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

## **FOR APPROVAL**

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### **MAJOR MODIFICATIONS**

#### **Arts**

##### **Global Business and Digital Arts**

1. **Motion:** That Senate approve the proposed change to the Bachelor of Global Business and Digital Arts as outlined below, effective 1 September 2022.

#### **Background and Rationale:**

The Stratford School of Interaction Design and Business is proposing a change to the current Honours Bachelor of Global Business and Digital Arts (GBDA) program which would entail the Honours Regular program (with one mandatory internship term) becoming an Honours Co-op program. This would allow the School to enhance the education offered, to respond to student and employer demand, and to bring the program in line with the rest of the Faculty of Arts, which offers co-op in all of its major plans. Co-operative and Experiential Education has completed a feasibility report for proposed honours co-op program, which is included in the 15 December 2020 undergraduate council agenda package:

[https://uwaterloo.ca/secretariat/sites/ca.secretariat/files/uploads/files/2020-12-15\\_suc\\_agenda\\_package\\_0.pdf](https://uwaterloo.ca/secretariat/sites/ca.secretariat/files/uploads/files/2020-12-15_suc_agenda_package_0.pdf)

**Current Calendar text for degree requirements:** <https://ugradcalendar.uwaterloo.ca/page/ARTS-BGBDA-Degree-Requirements>

#### **New Calendar text:**

**bold= new, strikeout= delete**

#### Degree Requirements

Eligibility for the degree of Bachelor of Global Business and Digital Arts (**Co-op**) requires:

1. Successful completion of 20 academic course units with ~~an overall~~ **minimum** cumulative **overall** average of 60%.
2. Successful completion of the following courses with a **minimum** cumulative average of 70%:
  - o GBDA 101, GBDA 201, GBDA 202, GBDA 203, GBDA 204, GBDA 205, GBDA 210, GBDA 211, GBDA 212, GBDA 228, GBDA 301, GBDA 302, GBDA 303, GBDA 304, GBDA 305, GBDA 306, GBDA 310, GBDA 311, GBDA 402 (2.0 units), GBDA 410, GBDA 412, GBDA 413, GBDA 414
  - o ECON 101
3. Successful completion of the following requirements and courses:

- o Undergraduate Communication Requirement
- o CS 105, CS 106, CS 330
- o Two language courses **from the following subject codes:** (see Note 1)
  - **ARABIC, CHINA, CROAT, DUTCH, FR, GER, GRK, ITAL, JAPAN, KOREA, LAT, MOHAWK, PORT, RUSS, and SPAN**
- o GBDA 312 (see Notes 3 and 4)
- o **Appropriate co-op requirements** (*LINK to new Co-op Requirements calendar page*)

#### Notes

- ~~1. The second language course must be chosen from any of the following participating subjects: ARABIC, CHINA, CROAT, DUTCH, FR, GER, GRK, ITAL, JAPAN, KOREA, LAT, MOHAWK, PORT, RUSS, and SPAN. Taking two courses in the same language is recommended.~~
- ~~2. During Year One of the Global Business and Digital Arts program, students will take the majority of their courses at the University of Waterloo Campus. In 1B term, students will take one or two courses at the Stratford Campus. For Years Two, Three, and Four, courses are offered at the Stratford Campus.~~
- ~~3. The program includes a paid internship scheduled for the spring term following the completion of Year Three. The successful completion of GBDA 312 will indicate completion of this requirement; however, no academic credit is given.~~
- ~~4. Students are required to complete PD 1: Career Fundamentals before they begin their mandatory internship.~~
- ~~5. Students are encouraged to participate in a term abroad experience in either the 3A (GBDA 365) or 4A (GBDA 465) term. Discussion and approval of options and course selection must be made with the Global Business and Digital Arts advisor.~~
- 6. 3. Students are encouraged to participate in a term abroad experience in 4A, for which they receive a provisional GBDA 465 (*LINK to course description*) designation. The course equivalencies and amount of credit received will depend on the number of units successfully completed. Course selection at a University of Waterloo approved institution of higher learning abroad must be discussed and decided in consultation with the Global Business and Digital Arts academic advisor and the associate director – Undergraduate.**

#### New Undergraduate Calendar Page

#### Arts Degree Requirements

##### Bachelor of Global Business and Digital Arts

<https://ugradcalendar.uwaterloo.ca/group/ARTS-Bachelor-of-Global-Business-and-Digital-Arts>

##### Co-op Regulations and Requirements

#### General Regulations

1. Successful completion of a minimum of three of the four available work terms is required.
2. Students are required to follow the prescribed study/work-term sequence through to graduation unless given special permission to do otherwise by the Stratford School of Interaction Design and Business, and Co-operative and Experiential Education. Students may not end their sequence with a work term.
3. Students who meet all the academic graduation requirements for this plan, but who do not meet the minimum requirements for a co-op degree may, in exceptional circumstances and at the discretion of the Stratford School of Interaction Design and Business and the Faculty of Arts Examinations and Standings (E&S) Committee, be awarded a regular Bachelor of Global Business and Digital Arts Degree.

#### Professional Development (PD) Courses

Students must complete four Professional Development (PD) courses. PD 1 must be completed in the term prior to the first work term and PD 12 must be completed during the first work term. The third and fourth PD elective course must be completed during the second, third or fourth work term.

**Legend for Study/Work Sequence Information Chart**

Key	Description
F, W, S	Terms: F=September-December; W=January-April; S=May-August
1,2,3,4 plus A or B	Denotes academic year and term.
WT	Work term
off	Neither an academic term nor a work term

**Study/Work Sequence Information Chart**

F	W	S	F	W	S	F	W	S	F	W	S	F
1A	1B	Off	2A	2B	3A	WT	3B	WT	4A	WT	WT	4B

/rmw

David DeVidi  
Associate Vice-President, Academic

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

### **Announcement of an Award for Outstanding Researchers Named after Dr. Donna Strickland**

On November 25, 2020, the Natural Sciences and Engineering Research Council of Canada (NSERC) announced two new prizes to honour Canada's most recent science Nobel laureates by launching prizes in their names. One of these prizes is the [NSERC Donna Strickland Prize for Societal Impact of Natural Sciences and Engineering Research](#). Valued at \$250,000, the prize will be awarded annually to an individual or team whose outstanding research has led to exceptional benefits for Canadian society, the environment and/or the economy. Any NSERC-funded researcher, regardless of their career stage, can be nominated for this award for research conducted in Canada.

### **Awards**

Waterloo received notice of three new award winners in October and November 2020.

- **Imre Szeman** (ARTS, Communication Arts) – 2020 Fellow of the Canadian International Council – October 14, 2020
- **Aiping Yu** (ENG, Chem ENG): Advanced 2-Dimensional Carbon Nanomaterials for Next Generation Batteries and Supercapacitors. *2020 E.W.R. Steacie Memorial Fellowships*.
- Shalev Ben-David and Eric Blais (Math, Cheriton School of Computer Science): A New Minimax Theorem for Randomized Algorithms. received a prestigious [best paper](#) award at [FOCS 2020](#), the 61st Annual IEEE Symposium on Foundations of Computer Science.
  - This award-winning paper extends the minimax theorem, a seminal contribution to computer science by Andrew Yao, the 2000 Turing Award laureate.

### **Research Awards**

For the period October and November 2020, Waterloo secured **\$31,661,529** in research funds. The majority of these funds were Institutional Research funds (82.2%), followed by industry Research Partnership awards (8.5%) and Tri-Agency funding and various other non-profit sponsor (5.3%) awards. International Research and Partnership (3.3%) and “other” awards (0.8%) comprised the remaining amount of the total funding awarded over these two months.

Of note, the Institutional Research funding awards were notably high this period for the following reasons:

- **Ontario Research Fund-Research Excellence (ORF-RE):** These applications were submitted in September 2019 and results were pending in April 2020, but COVID-19 delayed the release of these results until November 2020.
- **Ontario Research Fund-Research Infrastructure (ORF-RI):** The June and October 2019 submissions were both announced in November 2020.
- **Canada Foundation for Innovation, Exceptional Opportunities Fund (CFI EOF) COVID-19 Awards:** This was a targeted call that was released in July 2020 in response to COVID-19. Results were released in just three months, in October 2020.
- **Canada Foundation for Innovation-Innovation Fund (CFI-IF):** This is a major infrastructure award that provides significant investments in infrastructure to help Canada remain at the forefront of exploration and knowledge generation. Applications were submitted in January 2020 and results were released in November 2020. The CFI-IF funding (\$172,721,134) represents over half (54.6%) of the total funds secured in October and November 2020.

A detailed breakdown of each of these awards, including the awardee names, project titles and funding amounts are provided below.

## Research Partnerships

In October and November 2020, Waterloo was awarded **\$2,684,184** in industry research partnership awards through NSERC Alliance (18%), Canadian (67%) and US federal (15%) awards. The details of these awards are provided below.

In October and November 2020, Waterloo secured **six NSERC Alliance** awards that totaled **\$484,317**.

1. **Robert Gracie** (ENG, Civil and Environmental Engineering): *“Combating the Tyranny of Scales in Simulation with Reduced Order Modelling”*
2. **Robert Gracie** (ENG, Civil and Environmental Engineering): *“Simulation of Dynamic Stimulation of Wells by Pressure Pulsing”*
3. **Fatma Gzara** (ENG, Management Sciences) *“Supply Chain for Good: Enhancing Governmental Rapid Response Logistics with Industry Spare Capacity”*
4. **Hamid Jahed** (ENG, Mechanical and Mechatronics Engineering): *“Characterization of Single and Laminated Electrical Steel Sheets Under Static and Cyclic Loads at Room and Elevated Temperature”*
5. **Behrad Khamesee** (ENG, Mechanical and Mechatronics Engineering): *“RespirAct Synchronization with MRI and its Impact on CVR Mapping: A Simultaneous Gas Control-Imaging System”*



6. **Shunde Yin** (ENG, Civil and Environmental Engineering): *“Development of a Thermal Fracturing Model for Cold CO<sub>2</sub> Injection in Enhanced Geothermal Systems”*

Waterloo was awarded **five Canadian federal awards** that totaled **\$1,807,510**.

1. **Wesley van Wychen** (ENV, Geography and Environmental Management): *Sea ice/Lake ice/Ocean/Glacier interactions in the Canadian Arctic*. Environment Canada and Climate Change.
2. **Ali Safavi-Naeini** (ENG, Electrical and Computer Engineering): *Ka-band phased array antenna system for broadband mobile satellite communications based on modular architecture*. Canadian Space Agency.
3. **Steve Fischer** (AHS, Kinesiology): *Development and validation of the CANadian virtual Soldier Performance Prediction and Optimization Tool (CAN-SPPOT)*. Department of National Defence.
4. **David Hammond** (AHS, School of Public Health and Health Systems): *Cannabis, Women, Harm Reduction, and Treatment*. Health Canada.
5. **Sharon Kirkpatrick** (AHS, School of Public Health and Health Systems): *Development of an adherence assessment tool reflecting the 2019 Canada’s Food Guide (the “what to eat” recommendations)*. Health Canada.

Waterloo was awarded **three US federal awards** that totaled \$299,715 USD = **\$392,357** CDN, converting using **Current rate = 1.3091** (November 23, 2020).

1. **Hans De Sterck** (Math, Applied Mathematics): *Parallel-in-Time Integration for Hyperbolic Problems*. US Dept of Energy.
2. **Slim Boumaiza** (ENG, Electrical and Computer Engineering): *Frequency Multiplier based Millimeter-Wave Phased Array Transmitter Front-End Technologies*. US Army Research Office. Basic Scientific Research.
3. **Liam McGuire** (SCI: Biology): *White-nose Syndrome National Response Implementation*. US Fish and Wildlife Service.

## International Research and Partnerships

In October and November 2020 Waterloo was awarded **five** international research and partnership awards that totaled **\$1,033,135**.

1. **Jeff Aramini** (Velocity): *Portable, Low-cost Hardware for Decentralized COVID-19 Diagnostics for Canada, Colombia and Ecuador*. International Development and Research Centres.
2. **David Hammond** (AHS, School of Public Health and Health Systems): *What is the impact of vaping on smoking, nicotine intake and toxin exposure among youth in England compared with youth in North America?* National Institute for Health Research, UK; subproject with King’s College, London.

3. **Multiple PIs.** Grant held under **Vice-President Research and International:** Gift Agreement to University of Waterloo to continue research partnership with *Technion Israel Institute of Technology*. Gerald Schwartz and Heather Reisman Foundation.
4. **Anita Layton** (Math, Applied Mathematics): *Restoring 24-hour substrate rhythmicity to improve glycemic control by timing of lifestyle factors*. CIHR and ZonMw (Netherlands organization for Health and Research Development); subproject with University of Sherbrooke.
5. **Olaf Weber** (ENV, School of Environment, Enterprise Development): *COPERNICUS: Social Finance for Social Enterprises: Theory and Practice to build a more inclusive society*. Horizon2020; Marie Skłodowska Curie Individual Fellowships Global.

### Tri-Council Awards

Waterloo was awarded a total of approximately **\$1M** in Tri-Agency awards in October and November 2020. These awards were comprised of SSHRC Connection Grants (2%), CIHR Project Grants (60%) and other (38%) various non-profit sponsor awards. Details of these awards are provided below.

1. **Igor Grossman** (Arts, Psychology): *Post-Pandemic Kaleidoscope: Behavioral and Social Scientists' Wisdom for Navigating the New Normal*; SSHRC Connection Grant.
2. **Mair, Heather** (AHS, Rec& Leisure): *Changing the 'Face' of Curling: Increasing Diversity and Inclusion in Sport*; SSHRC Connection Grant
3. **David Hammond** (AHS, SPHHS): *The impact of cannabis legalization on the illicit cannabis market in Canada*; CIHR.
4. **Paul Stolee** (AHS, SPHHS): *Why aren't we engaging our most at-risk older patients? Developing an in-depth understanding of patient/family engagement across care transitions*; CIHR.

### Awards from Non-Profit Sponsors

In October and November 2020 Waterloo also secured an additional **eleven** awards from **non-profit sponsors** totalling **\$633,348**.

1. **Raouf Boutaba** (Math, Comp Sci): *Joint Security Project Aggregation and Visualization Tools*. CANARIE.
2. **Susan Elliott** (ENV, GEMS): *Translating Lupus: knowledge & action*. U of Calgary/Arthritis Society of Canada.
3. **David Hammond** (AHS, SPHHS): *Transitioning to the legal cannabis market in Canada: Legal and illegal cannabis purchases, and the effect of price, retail availability, and consumer perceptions*. Canadian Centre on Substance Use and Addiction.

4. **David Hammond** (AHS, SPHHS): *Health Warnings, product labelling regulations, and consumer understanding of the health risks of cannabis* Canadian Centre on Substance Use and Addiction.
5. **Amelia Clarke** (ENV, SEED): *Community Impact Evaluation*. Canadian Wildlife Federation.
6. **Mark Servos** (SCI, Biol): *Influence of temperature on the toxicity of TFM to sea lamprey and non-target juvenile lake sturgeon*. WLU/Great Lakes Fishery commission.
7. **Bryan Tolson** (ENG, CEE): *RS3-124 PAVICS-Hydro 2*. ETS/CANARIE.
8. **Andrea Edginton** (SCI, Pharm): *Optimizing clotting factor use through WAPPS* (OTTAWA). IPSCG/SickKids Hospital.
9. **Igor Grossman** (Arts, Psych): *Post-Pandemic Kaleidoscope: Documenting Social Scientists' Wisdom on how to Navigate the New Normal*. Templeton World Charity Foundation.
10. **William Ngo** (SCI, Opt): *2020 Korb-Exford Dry Eye Career Development Grant*. American Academy of Optometry Foundation.
11. **Kaylena Ehgoetz Martens** (AHS, Kin): *Freezing of Gait: Understand, Detect, Predict*. Parkinson Canada (new investigator award).

## **Institutional Research Awards<sup>1</sup>**

Waterloo was awarded **\$26,010,134** in Institutional Research awards in October and November 2020. These awards were comprised of a Canada Research Chair award (2%), awards from the Canada Foundation for Innovation (CFI) including the Exceptional Opportunities Fund (CFI EOF) COVID-awards (5%), CFI Innovation Fund (66%), and CFI John R. Evans Leaders Fund (4%). As well, Waterloo secured Ontario Research Fund (ORF) awards including the ORF Research Excellence (ORF-RE) (16%) and ORF Research Infrastructure Fund (ORF-RI) awards (7%). The specifics of each of these awards are provided below.

### **Canada Research Chair (CRC) Award**

- **Hannah Neufeld** (AHS, School of Public Health and Health Systems): Tier 2 CIHR *Canada Research Chair in Indigenous Health, Wellbeing and Food Environments*.

### **Canada Foundation for Innovation, Exceptional Opportunities Fund (CFI-EOF) COVID-19 Awards**

Nationally, 56 of 112 (or 50% success rate) CFI EOF applications were awarded resulting in a 50% success rate and a national funding rate of 52%.

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<sup>1</sup> Note that all results except for the CFI-EOF COVID-19 awards are under embargo.

In October 2020, Waterloo was awarded **three** (of four or 75% success rate) **CFI-EOF COVID19 awards** that totaled **\$1,365,000**.

1. **Gary Dmitrienko** (SCI, Chemistry): *Synthesis of chromogenic substrates and inhibitors of SARS CoV-2 main protease to overcome COVID19 infection.*
2. **Mark Servos** (SCI, Biology): *Wastewater surveillance of SARS-CoV-2 to support public health assessment of trends in community infection.*
3. **Tam, Michael** (ENG, Chem. Eng) & Musselman, Kevin (ENG, MME): *Advanced engineering processes and materials to produce compostable masks and antimicrobial coatings for PPE.*

### **Canada Foundation for Innovation, Innovation Fund (CFI-IF) Awards**

Nationally, 102 out of 307 applications were awarded (33% success rate) with a total CFI awarded amount of **\$393,700,000**.

In November 2020, Waterloo was awarded **six** (of 16 or 37.5% success rate) **CFI-IF 2020 awards** that totaled **\$17,272,134**.

1. **Michael Fich** (SCI, Physics and Astronomy): *CCAT-prime: A Submillimetre Wavelength Survey Telescope in Chile.*
2. **Monica Emelko** (ENG, Civil and Env. Eng.) & Silins, Uldis<sup>2</sup> (UofA): *forWater AID: Advanced Infrastructure Development for forested drinking water source protection technologies in Canada.*
3. **Linda Nazar** (SCI, Chemistry) & Chen, Zhongwei<sup>2</sup> (ENG, Chem. Eng): *Ontario Centre for Battery and Electrochemical Research.*
4. **Paul Craig** (SCI, Biology) & Dixon, Brian<sup>2</sup> (SCI, Biology): *Waterloo Aquatic Threats Environmental Research (WATER) Facility.*
5. **Tong Leung** (SCI, Chemistry) & Ebrahimi, Maryam<sup>2</sup> (Lakehead): *Advanced Materials Ontario: Harnessing the power of multifunctional materials for new technologies.*
6. **David Blowes** (SCI, Earth Sciences) & Ptacek, Carol<sup>2</sup> (SCI, Earth Sciences): *Developing Innovative Technologies for Predicting and Remediating Environmental Contamination.*

### **Canada Foundation for Innovation, John R. Evans Leaders Fund (CFI-JELF)**

In November 2020, Waterloo was awarded **eight** (of 12 or 67% success rate) **CFI-JELF awards** that totaled **\$922,108**. (The provincial funding rate for this competition was 71.4%).

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<sup>2</sup> denotes Co-Leads listed on the award.

1. **Zahid Butt** (AHS, SPHHS): *Public Health Research and Analytics Lab: a platform for disease mapping, health data analyses and knowledge translation.*
2. **M. Tamer Ozsü** (MATH, School of Computer Science): *Scalable Infrastructure for Big Data Systems.*
3. **Helen Jarvie** (ENV, Geography and Environmental Management): *Multi-element signatures to trace nutrient sources, pathways and processes: from field to watershed scales.*
4. **Zhao Pan** (ENG, Mechanical and Mechatronics Engineering): *Mild-impact-induced cavitation in soft matter and traumatic brain injury: From fluid physics to applied health.*
5. **Dale Martin** (SCI, Biology): *Microscopy System for Targeting S-Palmitoylation in Neurodegeneration.*
6. **Chengnian Sun** (MATH, School of Computer Science): *Continuous, Intelligent, Semantics-Aware Fuzz Testing of System Software.*
7. **Kaylena Ehgoetz Martens** (AHS, Kinesiology): *Understanding Gait Patterns in Health and Disease.*
8. **Wesley Van Wychen** (ENV, Geography and Environmental Management): *Establishment of the Glacier and Cryosphere Research Laboratory.*

### **Ontario Research Fund: Research Excellence (ORF-RE) Round 10**

In November 2020, Waterloo was awarded **two** (of seven or 29% success rate) **ORF-RE** (Round 10) awards that totaled **\$4,032,032** (The provincial funding rate for this competition was 19.9%).

1. **Naila Keleta-Mae** (ARTS, Communication Arts): *Freedom in Black Expressive Culture.*
2. **Linda Nazar** (SCI, Chemistry): *Empowering Ontario's Transportation Sector with Electrochemical Solid-State Energy Storage Batteries.*

### **Ontario Research Fund: Research Infrastructure (ORF-RI)**

In November 2020, Waterloo was awarded **11 ORF-RI awards** that totaled **\$1,918,860**.

1. **David G. Cory** (SCI, Chemistry): *Transmission Electron Microscope.*
2. **Ihab Francis Ilyas** (MATH, School of Computer Science): *Infrastructure for Large-scale Integration and Processing of Structured and Graph Data.*
3. **Maria Strack** (ENV, Geography and Environmental Management): *Flexible Automated Chamber System for Quantifying the Effect of Disturbance and Restoration on Peatland GHG Exchange.*
4. **Sean Meehan** (AHS, Kin): *Neural Substrates of Cognitive Influence Over Sensory-Motor Control: Implications for learning and stroke rehabilitation.*

5. **Christopher Batty** (MATH, School of Computer Science): *Physics-Based Visual Computing Infrastructure*.
6. **Julie Messier** (SCI, Biology): *Plant phenomics: Understanding trait covariation across scales*.
7. **Mahla Poudineh** (ENG, ECE): *Integrated Device-Driven Approaches for Automated, Real-Time Tracking*.
8. **Marco Alfano** (ENG, Mechanical and Mechatronics Engineering): *Enabling toughening and damage tolerance in adhesive bonding of multi-material lightweight structures*.
9. **Neil Randall** (ARTS, English Language and Literature): *The StoryBoard Lab*.
10. **Stewart McLachlin** (ENG, Mechanical and Mechatronics Engineering): *A dynamic force and motion simulator for characterizing spine biomechanics under complex loading*.
11. **Yousra Aafer** (MATH, School of Computer Science): *Security Evaluation and Synthesis for Smart Devices*.

## **CRC Communications Strategy for EDII**

In collaboration with third party expert consulting group Taylor Newberry Consulting, Waterloo is undertaking a review of strategies used to communicate the value of equity, diversity, inclusion, and Indigenous initiatives (EDII) to Waterloo's Canada Research Chairs (CRC) Program as part of the approved institutional CRC EDI Action Plan. The goal of this review is to increase the understanding of the importance of EDII to Waterloo's CRC program, and the campus community more broadly. The work will be rooted in an environmental scan of current communications strategies, and direct engagement with key stakeholders involved in managing the CRC program, Department Chairs, and current CRCs and CRC nominees. Key deliverables will be a business case for EDII in Waterloo's CRC program and tangible recommendations for an effective communications strategy that will support Waterloo in achieving its 10-year equity targets within an inclusive and supportive campus community.