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<td>1:30</td>
<td><strong>OPEN SESSION</strong></td>
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<tr>
<td>1:30</td>
<td>1. Conflict of Interest</td>
<td>Oral</td>
<td>Declaration</td>
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<td>1:30</td>
<td>2. Remarks from the Chair</td>
<td>Oral</td>
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<td>3. Agenda/Additional Agenda Items</td>
<td>Input</td>
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<td>1:35</td>
<td><strong>Consent Agenda</strong></td>
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<td>1:35</td>
<td><strong>Motion:</strong> To approve or receive for information by consent items 4-7 below.</td>
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<td>1:35</td>
<td>4. Minutes of the 1 June 2021 Meeting</td>
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<td>Decision</td>
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<td>5. Report of the President</td>
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<tr>
<td>1:35</td>
<td>a. Sabbatical and Administrative Leaves/Administrative Appointments</td>
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<td>6. Report of the Vice-President, Administration &amp; Finance</td>
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<tr>
<td>1:35</td>
<td>a. Incidental Fee Changes</td>
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<td>7. Reports from Committees</td>
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<tr>
<td>1:35</td>
<td>a. Executive</td>
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<td>b. Finance &amp; Investment</td>
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<td>c. Governance</td>
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<td>d. Pension &amp; Benefits</td>
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<td><strong>Regular Agenda</strong></td>
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<td>8. Business Arising from the Minutes</td>
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<td>9. Report of the President</td>
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<td>1:45</td>
<td>a. Update on Presidential Priorities</td>
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<td>1:45</td>
<td>b. Strategic Plan update</td>
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<td>c. Communication and Marketing Strategy Update – Sandra Banks</td>
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2:30 10. Reports from Committees  
   a. Audit & Risk  
      i. Cybersecurity presentation  
   b. Building & Properties  
   c. Finance & Investment  
      | 59 | Decision/Information  
      | Oral | Information  
      | 61 | Decision/Information  
      | 65 | Decision  

3:05 11. Other Business  
      | | Input  

SHORT BREAK – CONNECT TO CONFIDENTIAL MEETING LINK

CONFIDENTIAL SESSION

3:15 12. Conflict of Interest  
      | Oral | Declaration  

3:20 Consent Agenda

Motion: To approve or receive for information by consent items 13-14 below.

13. Minutes of the 1 June 2021 Meeting  
      | 10 | Decision  

14. Report from the President  
   a. New Appointments with Tenure  
      | 85 | Decision  

15. Reports from Committees  
   a. Audit & Risk  
      | 89 | Information  

Regular Agenda

3:25 16. Business Arising from the Minutes  
      | Input  

3:30 17. Report of the President  
   a. Plan for KPI development  
      | 91 | Information  
   b. Donor List – 2020-2021 Gifts and Pledges $250,000+  
      | 95 | Information  
   c. National Security Guidelines – Charmaine Dean  
      | Oral | Information  

3:50 18. Reports from Committees  
   a. Governance  
      | 97 | Information/Decision  

4:00 19. Other Business  
      | Input  

IN-CAMERA SESSION

4:05 20. Conflict of Interest  
      | Oral | Declaration  

4:10 21. Minutes of the 1 June 2021 Meeting  
      | 12 | Decision  

4:15 22. Business Arising from the Minutes  
      | Input  

4:20 23. Reflections  
      | Discussion  

24. Other Business

25. Adjournment

Next Meeting: Tuesday 1 February 2022 at 1:30 p.m.
(Board Retreat: 1 December 2021)

KJJ/dg
19 October 2021

Karen Jack
University Secretary
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OPEN SESSION

1. CONFLICT OF INTEREST
Governors were asked to declare any conflicts they may have in relation to the items on the agenda; no conflicts were declared.

2. REMARKS FROM THE CHAIR
Opening Remarks. The chair welcomed governors to the meeting and invited the secretary to speak to procedures for the virtual meeting, which she did. Forbes offered her thoughts on the meeting’s key areas of focus: the president’s report, the research impact strategic plan discussion, the responsible investment recommendations, and the discussion of the Board survey results.

Governors’ First Meeting
A number of governors were attending their first meeting or were returning for a second term. The chair acknowledged them as follows: community-at-large representatives: Jagdeep Bachher, Russell Hiscock, and John Saabas; staff representative: Nancy Heide; faculty representatives: Anne Bordeleau, Lori Curtis, Achim Kempf, and Ian Milligan; undergraduate student representatives: Benjamin Easton, Emma Schuster, and Matthew Schwarze; graduate student representatives: Naima Samuel, and Twesh Upadhyaya.

3. AGENDA/ADDITIONAL AGENDA ITEMS
The Board heard a motion to approve the agenda as distributed.

Milligan and Bordeleau. Carried unanimously.

Consent Agenda

The Board heard a motion to approve and/or receive for information by consent items 4-10 below.

Barr and Bordeleau.

4. MINUTES OF THE 6 APRIL 2021 MEETING
The Board approved the minutes of the meeting as distributed.
5. REPORT OF THE PRESIDENT

Recognition and Commendation. The Board received the report for information.

Sabbatical and Administrative Leaves and Administrative Appointments. The Board heard a motion to approve the sabbatical leaves and changes, and administrative leaves, as presented in the report.

The remaining items in the report were received for information.

Revision to Policy 76 – Faculty Appointments. The Board heard a motion to approve the changes to Policy 76 as presented in the report.

6. REPORT OF THE VICE-PRESIDENT, ADMINISTRATION & FINANCE

Incidental Fees. The Board heard a motion to approve incidental fee changes as follows:

Incidental Fees Fall 2021 – General Approach to Fee Assessment
The Board heard a motion to recommend that incidental fees to be assessed and collected during the fall term 2021 from full-time and part-time undergraduate and graduate students be modified based on the final details dictated by public health guidelines. The specific approach will be finalized collaboratively by the presidents/vice-presidents of the Waterloo Undergraduate Student Association (WUSA) and the Graduate Student Association – University of Waterloo (GSA), the Vice-President, Administration & Finance, and the Associate Provost, Students for approval by the President and Provost.

Waterloo Undergraduate Student Association (WUSA) Administered Fees
The Board heard a motion that the WUSA fees, assessed and collected from undergraduate students, be reconfigured for Fall 2021 following WUSA Students’ Council approval on May 16 (all fees are compulsory):
- Student Life Fee from $35.00 for full-time (30% for part-time) to $39.14
- Academic Support & Advocacy from $15.39 for full-time (30% part-time) to $19.15
- Operations Fee from $34.66 for full-time (30% part-time) to $29.37

Capital Program Fund Fee
The Board heard a motion to recommend that the compulsory Capital Program Fund Fee, assessed and collected from full-time undergraduate students (part-time 30%), be increased from $15.00 to $15.11 per term effective Fall 2021.

WUSA Student Refugee Program Fee
The Board heard a motion to recommend that the optional Student Refugee Program Fee, assessed and collected from full-time and part-time undergraduate students that have not opted out of the fee, be increased from $4.98 to $5.01 per term effective Fall 2021.

WUSA Orientation Fee
The Board heard a motion to recommend that that the optional Orientation Fee, assessed and collected from full-time first-year undergraduate students who have not opted out of the fee, be increased from $116.36 to $117.17 and be charged during Fall 2021 only.

UW Student Publications (Imprint) Fee
The Board heard a motion to recommend that the administration and collection of the UW Student Publications (Imprint) fee be transferred to WUSA. Concurrently, it is recommended that the optional fee for full-time undergraduate students be increased from $5.69 to $5.79 (30% for part-time students) effective Fall 2021.
Constitution of the Graduate Studies Endowment Fund (GSEF) at the University of Waterloo
The Board heard a motion to recommend that the attached amendments to the GSEF Constitution be approved.

7. REPORTS FROM COMMITTEES
   Finance & Investment. The Board received the report for information.
   Governance. The Board received the report for information.
   Pension & Benefits. The Board received the report for information.

8. REPORTS FROM INSTITUTE FOR QUANTUM COMPUTING
   Annual Report to the Ministry of Innovation, Science and Economic Development. The Board heard a motion to approve the IQC annual report to ISED as presented in the report.
   Corporate Plan 2021-22. The Board heard a motion to approve the IQC corporate plan as presented in the report.

9. REPORT FROM THE OFFICE OF HUMAN RIGHTS, EQUITY AND INCLUSION REGARDING SEXUAL VIOLENCE PREVENTION AND RESPONSE
   The Board received the report for information.

10. REPORTS FROM THE UNIVERSITY SECRETARY
    Policies. The Board received the report for information.
    Department Name Change – Police Services. The Board heard a motion to approve the change of the name of Police Services to Special Constable Services, effective 1 July 2021.

The question was called and the motion carried unanimously.

Regular Agenda

11. BUSINESS ARISING FROM THE MINUTES
    The chair noted that Rush provided a student experience update in his report, and that the Secretary’s report regarding policies was included in the consent agenda.

12. REPORT OF THE PRESIDENT
    President’s Report. The president provided governors with an update about plans for the return to campus over the coming months. Walking members through his slides, he provided updates on: major capital projects; federal budget highlights, including research investments, supports for entrepreneurship and innovation, skills and training investments, and student assistance.
    Committee on Student Mental Health. The president invited John Hirdes, chair of the committee to provide members with a final update on its work. Hirdes informed governors that 33 of the committee’s 36 recommendations have been implemented and the remaining three are underway or require further discussion and consideration at the University. Several members expressed thanks to Hirdes and the whole committee for their excellent work on this important activity.
    Global Research Impact Action Team Outcomes. Dean provided an overview of the small group discussions held on 18 May. Conversations that day gave rise to many suggestions for potential initiatives that align with the University’s strategic commitments (e.g., information security; health innovation and technology; community and corporate partnerships). Dean also provided an overview of some key initiatives underway in the research enterprise (e.g., development of commercialization...
work terms; interdisciplinary programs focused on health, technology and sustainability; identifying new partnerships). In discussion: input and output metrics used to measure success; challenges in measuring social dimensions, and what exists to measure commercialization; Waterloo’s relative strength in the quantum arena; opportunities for some cost sharing with industry; some climate emergency academic initiatives in the Faculty of Environment; ongoing development of strategies to extend the financial reach of grants.

The reports of the vice-presidents were received for information.

13. REPORTS FROM COMMITTEES
   Audit & Risk. Following Hiscock’s review of the report, it was received for information.

   Building & Properties. Following a brief review of the report by Schlegel, the Board heard a motion to approve the appointment of Moriyama & Teshima Architects as the prime consultants for the recently approved Math 4 building.

   Schlegel and Barr.

   In response to a question, Huber spoke to the evaluation criteria and selection process undertaken.

   The question was called and the motion carried unanimously. The remainder of the report was received for information.

   Finance & Investment. Following a brief review of the report from Schlegel, the Board heard a motion to approve TD Asset Management to provide a passively managed all country ex-Canada fund for the Endowment Fund.

   Schlegel and Hiscock. Carried unanimously.

   Schlegel introduced the report of the Responsible Investment Advisory Group and offered some background on the group and its work. After Schlegel extended thanks to Kennedy for the advisory group’s excellent effort to create a practical, realistic, and ambitious plan, the chair invited Kennedy and graduate student member of the advisory group, Truzaar Dordi, to speak to the report. Members heard about: the group’s composition and consultations; the sincere effort by all to work together to find constructive solutions; the holistic solution the recommendations represent; some key aspects of the recommendations; how fiduciary duties and environmental goals are both met. After several governors offered kudos and expressions of thanks, the Board heard a motion to endorse the recommendations of the report of the advisory group, and further, that the Board of Governors direct that such actions as outlined in the report be prepared and brought forward on the timelines described in the report.

   Kennedy and Samuel. Carried unanimously.

   Pension & Benefits. Following a review of the report from Barr, the Board heard a motion to approve the filing of the actuarial valuation report as at 1 January 2021 with the Financial Services Regulatory Authority of Ontario and the Canada Revenue Agency.

   Barr and Hiscock. Carried unanimously.

14. CONFLICT OF INTEREST DECLARATION FORM
   Governors were asked to complete the form linked on the agenda, and available on the Secretariat website, and return it to the Secretariat as soon as possible.
15. OTHER BUSINESS

Following expressions of thanks and well wishes to Hamdullahpur from Vrbanovic and Jaworsky who were departing, several other governors saluted the outgoing president and congratulated him for his accomplishments over the course of his presidency. A round of applause followed.

The Board convened in confidential session.

23 June 2021

Karen Jack
University Secretary
CONFIDENTIAL SESSION

Confidential minutes have been removed
Confidential minutes have been removed.

23 June 2021

Karen Jack
University Secretary
IN-CAMERA SESSION

In-Camera Session minutes have been removed.

23 June 2021
Karen Jack
University Secretary
FOR APPROVAL

1. Sabbatical and Administrative Leaves

The University of Waterloo Policy 3 – Sabbatical and Other Leaves for Faculty Members [excerpts below, full text available at: http://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-3] sets out the purpose of leaves for faculty members as well as the requirements/responsibilities of faculty who are granted such leave.

**Purpose**

The granting of a leave . . . depends on the University’s assessment of the value of such leave to the institution as well as to the individual, and on whether teaching and other responsibilities of the applicant can be adequately provided for in her/his absence. A faculty member who is granted a sabbatical or other leave is expected to return to duties in the University for at least one year and upon return will be expected to submit a brief report to the Department Chair regarding scholarly activities while on leave.

The purpose of a sabbatical leave is to contribute to professional development, enabling members to keep abreast of emerging developments in their particular fields and enhancing their effectiveness as teachers, researchers and scholars. Such leaves also help to prevent the development of closed or parochial environments by making it possible for faculty members to travel to differing locales where special research equipment may be available or specific discipline advances have been accomplished. Sabbaticals provide an opportunity for intellectual growth and enrichment as well as for scholarly renewal and reassessment.

. . . the granting of sabbatical leave is contingent upon the faculty member’s department being able to make the necessary arrangements to accommodate such an absence, and also upon the financial resources of the University in any given year. Should problems arise in any of the above, it may be necessary to postpone individual requests until such time as all the conditions can be satisfied.

**Process**

Application for leave must be made in writing to the Department Chair and approved by the Faculty Dean and the Vice-President, Academic & Provost. Application for sabbatical leave should include the faculty member's plans for scholarly activities while on leave. Sabbatical and special leaves also require the approval of the Board of Governors. ...

- **Sabbatical Leaves**

  **Batty, Christopher,** Computer Science, January 1, 2022 to June 30, 2022 at 85% salary

  My research investigates novel simulation technology, primarily targeting the visual effects, computer animation, and video game industries. A few months of my sabbatical will be spent in Wellington, New Zealand, visiting Weta Digital, a leading visual effects studio that regularly contributes to blockbuster films like the Avengers franchise, as well as the Computer Graphics Research Lab at Victoria University of Wellington.

  **Bell, Jason,** Pure Mathematics, July 1, 2022 to December 31, 2022 at 85% salary

  My area of research is noncommutative algebra. My plan for the sabbatical is to spend a few months in Lyon, France, where I would work on yet-to-be-finished projects with my coauthor Boris Adamczewski.
Berry, Daniel, Computer Science, January 1, 2022 to December 31, 2022 at 93.3% salary
I believe that a software development project variable, determinable during requirements analysis, exists that can predict the nature and cost-to-repair of defects that will show up in the software being developed. I plan to use the sabbatical to begin experimental validation of my belief.

Carter, Angela, Political Science, January 1, 2022 to June 30, 2022 at 85% salary
This sabbatical will allow me to conduct field research associated with a SSHRC Insight Grant, "Mapping Policy Pathways to Keeping Fossil Fuels in the Ground." This is an international comparative project that identifies the conditions giving rise to the world’s first bans on fossil fuel extraction that have been motivated by the climate crisis.

Chen, Changling, Accounting and Finance, January 1, 2022 to December 31, 2022 at 93.3% salary
My area of research mainly focuses on financial reporting area using archival data. During my leave, I will work on my recently approved SSHRC project including several COVID-19 related research papers. I expect to finish writing two manuscripts and submit the papers for publication.

Daun, Kyle, Mechanical and Mechatronics Engineering, January 1, 2023 to December 31, 2023 at 100% salary
I will be visiting Germany, where I will research laser-based diagnostics with Professor Christof Schulz with members of the Centre for Nanointegration Duisburg Essen (Centre for Nanointegration Duisburg Essen) and Professor Andreas Dreizler at Technical University Darmstadt. The focus of the CENIDE collaboration is laser-based nanoparticle diagnostics, while work with Darmstadt pertains to gas phase optical diagnostics.

Enns, Jonathan, Architecture, January 1, 2022 to June 30, 2022 at 100% salary
The request for leave is to study in situ, local, non-expert, low technology methods for building construction in the Arctic. This work will look at how a critical view on ‘high technology’ might open the door to scaling up grass roots, local, and informal camp building as an augmentation to undersupplied and culturally neglectful government housing programs. This is ‘research through design’ that will be investigated through a series of constructed prototypes in Iqaluit and surrounding region.

Fan, Lai-Tze, English Language and Literature, January 1, 2022 to June 30, 2022 at 100% salary
I will engage in archival research in five libraries, collections, and research labs, gathering findings into an open-access database. These activities are supported by a SSHRC Insight Development Grant for my project Unseen Hands: A Material History of the Gendered Design of Technologies from Typewriters to AI Digital Assistants. This project encompasses science and technology studies, gender studies, and critical design.

Fowler, Michael, Chemical Engineering, January 1, 2022 to December 31, 2022 at 100% salary
I will use my time to develop 'Hydrogen Economy' collaborations with industrial partners, develop new research proposals, and to design and build a significant new electrochemical power sources test bench. My current research to be explored is for ammonia hydrogen research, specifically for ammonia as hydrogen vector for marine applications.

Fraser, Doreen, Philosophy, January 1, 2022 to June 30, 2022 at 85% salary
I will complete the manuscript for a book entitled Formal Analogies in Physics under contract with Oxford University Press. The other focus will be work on my SSHRC Insight Grant-funded project “How Mid-Level Frameworks are Used to Develop New Theories in Physics.” Expected outcomes are the book, research presentations, and journal articles.
Sabbatical and Administrative Leaves – October 26, 2021

**Ghossoub, Mario**, Statistics and Actuarial Science, January 1, 2022 to June 30, 2022 at 100% salary
I will work on a research project with senior colleagues in Belgium (UC Louvain, KU Leuven) and France (ENSAE Paris), as well as my long-term collaborator in the Netherlands (University of Amsterdam). My research area is on optimal risk sharing and the optimal design of insurance contracts under situations of ambiguity.

**Graham, Kenneth**, English Language and Literature, January 1, 2022 to June 30, 2022 at 85% salary
This sabbatical will focus on “Saying Grace: Shakespeare’s Religious Language,” a project exploring the hypothesis that some forms of Shakespearean rhetoric are distinctively religious, while other forms serve overlapping sacred and secular ends. If Shakespeare’s religious language both complements and contests classical models of rhetorical power, what does this tell us about post-Reformation culture and the supposedly secular modern age?

**Hare, Kevin**, Pure Mathematics, January 1, 2022 to April 30, 2023 at 100% salary
This leave is to engage in research in the areas of number theory, fractal geometry and ergodic theory.

**Henstra, Daniel**, Political Science, January 1, 2022 to June 30, 2022 at 85% salary
I will further my funded research on the governance of flood risk management by (1) editing and submitting a multi-authored volume with case studies of flood risk governance in Canadian provinces; and (2) writing a cross-case analysis and 1-2 journal articles to disseminate the findings of a project on property buyouts to reduce flood risk.

**Itier, Roxane**, Psychology, January 1, 2022 to June 30, 2022 at 100% salary
I plan on finishing a number of journal articles and writing a few grants (NSERC RTI or CFI for equipment and SSHRC). I hope to re-start in-person research (brain recordings) and get the lab going again after the aftermath of COVID-19.

**Jakobsh, Doris**, Religious Studies, January 1, 2022 to June 30, 2022 at 85% salary
I am working on one book project and continuing research on Sikhs globally and experiential learning/research on women in world religions.

**Kaminskaia, Svetlana**, French Studies, January 1, 2022 to June 30, 2022 at 85% salary
My area of research is linguistic variation in Canadian French dialects. For the upcoming sabbatical leave, I will work with Research Assistants to work on data within my research project funded by SSHRC in 2019, and to prepare two conference presentations and a manuscript for publication.

**Kendall, Brian**, Earth and Environmental Sciences, January 1, 2022 to June 30, 2022 at 100% salary
I am a Tier 2 Canada Research Chair in Redox-Sensitive Metal Isotope Geochemistry. Samples from watersheds, mineral deposits, and sedimentary rocks will be collected from Canada and Australia for redox-sensitive metal isotope analysis. This research will provide new insights on natural and anthropogenic-induced environmental changes, ore-forming processes, and the co-evolution of atmosphere-ocean redox conditions and animal life.

**Klein, Sarah**, Communication Arts, January 1, 2022 to June 30, 2022 at 100% salary
I will conduct ethnographic interviews and analysis for my project on open science and the situated and embodied features of experiments on cognition. I will also draft a conference paper to be presented in July 2022. The research will yield two scholarly articles and the public exhibition of an art-science video piece, planned for 2023.
Klinkova, Anna, Chemistry, January 1, 2022 to June 30, 2022 at 100% salary
Area of research: nanochemistry, catalysis, green chemistry. Plans for leave: expedite research projects in the lab, finalize a series of papers, and complete a book project. Expected outcomes: submitted manuscript “Nanochemistry” handbook (Elsevier), and several review and research papers.

Kroeker, Greta, History, January 1, 2022 to December 31, 2022 at 100% salary
I will research the history of rape and continue to work on that subject via my SSHRC funded Artemisia Project. I will launch the web-based portion of the Artemisia Project, which will include a curated exhibition, case studies, and lesson plans for teaching the history of sexual violence. I will also submit an article on pedagogical processes for teaching the history of rape.

Labreche, Tammy, Optometry and Vision Science, January 1, 2022 to December 31, 2022 at 100% salary
Research involves various aspects of rehabilitation of those with visual impairment. Review of recently created bioptic driving training guidelines, feasibility of low vision telehealth, and post-stroke neurorehabilitation are three research projects to be attended to during this period. Activity would involve initiation and ongoing data collection and analysis (three projects) and completion of publications (two projects).

Laflamme, Raymond, Physics and Astronomy, January 1, 2022 to December 31, 2022 at 100% salary
I will finish a book that I have started to write on Implementation of Quantum Information Processing Devices and investigate methods for error mitigation in quantum computers (without the full need of quantum error correction).

Lashgarian Azad, Nasser, Systems Design Engineering, January 1, 2022 to June 30, 2022 at 100% salary
I will use this time to strengthen my research collaborations internally, with industry and international collaborators, and create new research partnerships. I will stay at Waterloo and continue supervising my graduate students, research assistants, and undergrad teams. I will expand my research in automotive, intelligent & autonomous systems, space domain awareness, and secure control design.

Lewis, John, Planning, January 1, 2022 to June 30, 2022 at 100% salary
I will be focusing my research on the completion of my portion of the Intelligent Systems for Sustainable Urban Mobility project. This work will include completing a virtual reality platform for accessible light rail transit station design developed for the Region of Waterloo. In addition to publishing this work, I will submit two grant applications to develop and evaluate virtual reality technologies for urban design education and community engagement in urban planning.

Liang, Kun, Statistics and Actuarial Science, January 1, 2022 to December 31, 2022 at 85% salary
I will conduct research on statistical methods applicable to modern complex datasets. More specifically I will develop novel statistical methods to detect useful signals, which can be the changes of gene expression levels in disease conditions, or unusual high correlations between medical interventions and adverse reactions, etc.

Lopez, Kimberly, Recreation and Leisure Studies, January 1, 2022 to June 30, 2022 at 100% salary
I will focus on preparing an IDG (February 2022 submission) that looks at race and gender-based violence against long-term care home staff in Canada. I will concentrate on: submitting three to four publications, deepening relationships with research centres and community partners focused on care labour and reading about social reproduction theory and post identity politics.
Love, Heather, English Language and Literature, January 1, 2022 to June 30, 2022 at 100% salary  
As an interdisciplinary literary scholar, I will be conducting SSHRC-funded archival research at the American and the Royal colleges of Obstetricians and Gynecologists libraries (Washington, DC, USA; London, UK) for a project on the representation of obstetrics technology in early 20th century literature, media, and medicine. Outcomes include two to three conference papers, at least one academic article, and a public presentation.

MacIver, Sarah, Optometry and Vision Science, January 1, 2022 to June 30, 2022 at 100% salary  
I will help develop our continuing professional development (CPD) program and platforms. This will help with non-tuition revenue coming into the school and also help position our CPD program as a leader in clinical education for optometry.

Macrae, Merrin, Geography and Environmental Management, January 1, 2022 to June 30, 2022 at 100% salary  
I will be conducting research on the effects of assisted drainage on the quantity and quality of agricultural runoff under different hydroclimatic regimes. My work will explore a gradient of hydroclimatic regions (moisture, temperature) across Canada, parts of USA, and Europe. Travel to is yet to be determined as it will depend on the current pandemic.

Messier, Julie, Biology, March 1, 2022 to August 31, 2022 at 100% salary  
I will conduct research in plant functional ecology and 1) write a paper summarizing the state of my field, current frontiers and future directions; 2) apply for an award, and 3) submit current research with students for publication. The expected outcomes of my leave are 1) submission of an Idea & Perspectives paper, 2) Early Researcher Award application, and 3) submission of four research papers.

Muschik, Christine, Physics and Astronomy, January 1, 2022 to June 30, 2022 at 100% salary  
Gauge theories are the bedrock of the standard model of particle physics and current numerical methods for simulating these theories are severely limited. Quantum computers have the potential to address currently intractable problems, but so far only models in 1D could be simulated in experiments. I will develop quantum simulation protocols to study 2D physics using present-day quantum technology.

O’Gorman, Marcel, English Language and Literature, March 1, 2022 to August 31, 2022 at 100% salary  
I will work on a project titled “Critical by Design: Fostering Responsible Innovation through Critical Design Practices.” This work builds off my recent book, Making Media Theory, to examine how critical design methods might encourage tech developers to be more wary of the possibly destructive outcomes of their innovations. During the sabbatical, I will create a series of instructional videos to help tech developers practice critical design.

Pandey, Mahesh, Civil and Environmental Engineering, May 1, 2022 to April 30, 2023 at 85% salary  
I plan to intensify my research on stochastic processes, extreme value analysis, and chaos theory for modeling non-stationary climate change effects. This work would be fundamental to the development of new building design code as planned by the National Research Council. The other goal is to develop reliability models for complex industrial systems and refine methods for uncertainty assessment.

Patel, Tejal, Pharmacy, January 1, 2022 to December 31, 2022 at 100% salary  
I will be continuing my research on the use, integration and effectiveness of real-time medication intake monitoring adherence technologies by engaging with industry and health care collaborators as well as further testing and development of two tools for use in clinical practice. I will be drafting manuscripts and applications for two large grants as well as a collection of clinical cases for teaching.
Petrone, Richard, Geography and Environmental Management, January 1, 2022 to June 30, 2022 at 100% salary.
I began a collaboration with Dr. Ricardo Valentini of the University of Tuscia in 2019, working on the development of sap flow sensors integrated through the internet of things. We are currently working on establishing a global forest network of these sensors as well as their application to viticulture. I will spend time with Dr. Valentini visiting his sites in Italy and France, and further developing the sensors and global viticulture and forest networks. I will also complete outstanding publications, prepare an NSERC Alliance Grant with the Grape Growers of Ontario and Fruit Producers Association of Ontario, and update and enhance courses.

Power, William, Chemistry, September 1, 2022 to April 30, 2024 at 100% salary
I will concentrate on long-delayed course development plans, including programming of new iterative and automated problem sets that provide a great expansion of formative and summative assessments available in physical chemistry. I will also spend time exploring ways to introduce microcredentials into the chemistry program, and study other institutions moves into these areas as examples.

Prouzet, Eric, Chemistry, January 1, 2022 to December 31, 2022 at 100% salary
After ten years devoted to develop new programs and international collaboration, I want to take the opportunity of a sabbatical leave to refocus my activity on three topics of research and innovation that require my full dedication: extend the application of a new type of search engine (Patented); finalize from TRL4 to TRL 8 a photobioreactor for microalgae and cyanobacteria; expand the range of nanoceramic coatings for buildings and transportation (Research Agreement with Amaris Premium Aviation).

Roy, Susan, History, January 1, 2022 to December 31, 2022 at 85% salary
During this leave, I will develop the Songs in the Key of Cree digital book publication with Ravenspace UBC Press, develop the Six Miles Deep (history of the Haldimand Tract) and Sewako research projects with Six Nations of the Grand River, and complete my book manuscript on the history of the Sechelt First Nation.

Sang, Peijun, Statistics and Actuarial Science, January 1, 2022 to June 30, 2022 at 100% salary
This leave is for preparing for my tenure application. My research area is focused on statistics, with an emphasis on statistical methodologies and theories of functional data analysis. I will spend most of the time visiting my collaborators for further collaboration.

Scholer, Abigail, Psychology, January 1, 2022 to June 30, 2022 at 85% salary
My research focuses on motivation and self-regulation (how people pursue goals). My sabbatical will be devoted to further developing existing collaborations on these projects with collaborators at Boston College, The Ohio State University, UCLA, and Columbia University. We will be analyzing data, writing manuscripts, and designing new studies.

Sciaini, German, Chemistry, January 1, 2022 to December 31, 2022 at 100% salary
My lab focuses on technology innovation for the observation of molecular processes with atomic spatial and temporal resolutions. My goal is to focus on research and the establishment of a startup. I will perform experiments with my group members at CCEM (Hamilton), which will lead to tech transfer and high impact results.

Simpson, Trefford, Optometry and Vision Science, January 1, 2022 to December 31, 2022 at 85% salary
The main purpose of my leave is to write. I have two books that I have been working on for many years now, one on clinical techniques and the other on ocular surface sensory processing in humans. I intend to finally complete and publish each of them. In addition, I am working on a completely new neurophysiological technique with a collaborator in Guelph and will devote much of my time to the development and refining of this technology.
**Smucker, Mark**, Management Sciences, September 1, 2022 to August 31, 2023 at 94.7% salary
I intend to stay at the University of Waterloo and continue working on my existing research program with my graduate students. My research program works to improve information retrieval (search engines). If pandemic travel restrictions have ended before or during this time, I hope to arrange visits to other academic and industrial research labs for collaboration.

**Spronk, Nicolaas**, Pure Mathematics, January 1, 2022 to December 31, 2022 at 85% salary
I will study classes of topological groups beyond locally compact, including weakly almost periodic and unitarizable groups, as well as their dual analogues witness through measure algebras.

**Staines, Richard**, Kinesiology, September 1, 2022 to August 31, 2023 at 100% salary
I will be conducting human neuroscience research. Studies will focus on mechanisms in the central nervous system associated with experience-dependent adaptations (neuroplasticity), multimodal sensory modulation processing and human motor control.

**Svec, Henry**, Communication Arts, January 1, 2022 to June 30, 2022 at 100% salary
I will draft three scholarly articles related to the history of string figures: 1) on filmmaker Harry E. Smith; 2) on the multimedia art exhibit The Museum of Jurassic Technology; and 3) on the string figure as a methodological tool in ficto-critical research. This work is part of my SSHRC IDG–funded project on string figures and imaginary media.

**Tan, Zhongchao**, Mechanical and Mechatronics Engineering, January 1, 2022 to September 30, 2022 at 100% salary
I plan to focus my attention on research and scholarship. I intend to catch up with my research productivity and networking opportunities, which were impacted by the role of Associate Dean, International, Faculty of Engineering. Meanwhile, I plan to further develop a new graduate course in Technical Writing, which was offered as a half course in Spring 2021. Furthermore, I choose this time to minimize the impact on teaching assignment in MME because my normal teaching in Winter 2022 would be a technical elective course (ME571/760 Air Pollution).

**Taylor, Bruce**, Fine Arts, January 1, 2022 to June 30, 2022 at 97.5% salary
I will further my professional growth and development. Specifically, I will create a new body of ceramic work borrowed from minimalism’s emphasis on primary structures, whereas the surfaces reflect the improvisation, freedom, and rhythm of jazz-arranging form and color, developing numerous iterations of an idea, each piece responding to the one before which will culminate in an upcoming solo exhibition at the Plinth Gallery (Denver CO) in 2023.

**Thompson, Russell**, Physics and Astronomy, May 1, 2022 to April 30 2023 at 85% salary
My current research includes polymer self-consistent field theory, quantum foundations and quantum density functional theory. My plans include developing gaussian basis SCFT code for application to atoms and molecules, and space group basis SCFT code for application to crystalline materials. The expected outcomes include orbital-free determination of electron densities for large molecules and complicated crystalline materials.

**Webster, Ben**, Pure Mathematics, July 1, 2022 to December 31, 2022 at 85% salary
My area of research is the interplay between representation theory and mathematical physics. I would spend the period of the sabbatical at the University of Edinburgh, a world-renowned center of this study. The expected outcome is collaborations and exchange of ideas with the scientists there and at the International Center for Mathematical Sciences.
Weddell, Grant, Computer Science, January 1, 2022 to December 31, 2022 at 89.9% salary
The area of research is structure data integration, and more specifically on reference issues. My plans are to work primarily locally in order to have the opportunity for in-depth development of software infrastructure that supports current and future research on such issues. The primary overall objective is to obtain a reliable code base that enables both experimental and instructional use.

White, Katherine, Psychology, January 1, 2022 to June 30, 2022 at 85% salary
Research in my lab focuses on early child language. Since the COVID shutdown in March 2020, we have undergone major pivoting, designing new research studies and implementing new means of data collection. This leave will allow me to continue these efforts, and progress in writing up older data that have fallen by the wayside during this intense period.

Whiteside, Heather, Political Science, January 1, 2022 to June 30, 2022 at 100% salary
My research is on colonial era joint stock royal charter companies and contemporary state owned enterprises. As the PI for a SSHRC IDG, I will be conducting archival research and key informant interviews; as the Co-I for a SSHRC IG, I will be working on literature review, RA management, and research interviews. Outcomes include dissemination at three academic conferences.

Willard, Ross, Pure Mathematics, January 1, 2022 to December 31, 2022 at 100% salary
I plan to devote my time to finishing three projects on which I have been working for many years: a large project with K. Kearnes (Colorado) and W. A. Lampe (Hawaii); a second project with J. Hyndman (UNBC) and T. Koussas (La Trobe); and a third with G. McNulty (S. Carolina) and two UW students.

Worswick, Michael, Mechanical and Mechatronics Engineering, January 1, 2022 to June 30, 2022 at 85% salary
I will focus on my research on fabrication and crashworthiness of light weight automotive components. If travel is allowed, I will attend a number of international conferences with short research visits for ongoing collaborations in Munich and with several US-based automotive companies. I will also focus on renewing our large Advanced Manufacturing Consortium funding.

Woudsma, Clarence, Planning, June 1, 2022 to December 31, 2022 and July 1, 2023 to December 31, 2023 at 100% salary
The goals for this leave are to disseminate findings from recently completed research projects, writing papers on estimating local level transportation GHG emissions, co-modality and last mile delivery, and Work From Home transit impacts. The second is to conduct preliminary analysis on logistics property development data across Canada and develop a related SSHRC Insight Grant proposal based on last mile logistics land use and the city.

Yim, Evelyn, Chemical Engineering, September 1, 2022 to August 31, 2023 at 85% salary
I plan to visit three research groups: one in Canada, one in US and one in Asia. These are top research groups in the world working on tissue engineering and gene therapy research. Due to the uncertainty of the pandemic the exact plan is still under discussion.

Due to an oversight, these sabbaticals were not communicated to the Board at the appropriate time; approval by the Board is being sought retroactively.

Senko, Crystal, Physics and Astronomy, May 1, 2021 to October 31, 2021 at 100% salary
I research applications of trapped ion hardware for quantum computing. My leave will accelerate work on the use of an exotic Ba-133+ ion for storing quantum information. Specifically, I will test a process for deterministically trapping multiple Ba-133+ ions under conditions that are suitable for performing quantum computations with the ions.
Trant, Andrew, Environment, Resources and Sustainability, January 1, 2019 to June 30, 2019 at 100% salary

My research focuses on human impacts to biodiversity at regional and global scales. Specifically, I am finishing a manuscript on 100 years of high elevation change in the Canadian Rocky Mountains, which will be submitted to Nature Scientific Reports. The majority of my leave will be spent at home, in Kitchener, with research trips to the Central Coast of British Columbia and to Nunatsiavut (Northern Labrador) planned for May and June 2019.

- **Sabbatical Cancellations**
  
  Aagaard, Mark, Electrical and Computer Engineering, March 1, 2021 to August 31, 2021 at 85% salary
  
  Karray, Fakhreddine, Electrical and Computer Engineering, September, 2021 to August 31, 2022 at 85% salary

- **Administrative Leaves**
  
  Hare, Kevin, Pure Mathematics, May 1, 2023 to August 31, 2023 at 100% salary
  
  This leave is to engage in research in the areas of number theory, fractal geometry and ergodic theory.
  
  Power, William, Chemistry, May 1, 2024 to August 31, 2024 at 100% salary
  
  I will concentrate on long-delayed course development plans, including programming of new iterative and automated problem sets that provide a great expansion of formative and summative assessments available in physical chemistry. I will also spend time exploring ways to introduce microcredentials into the chemistry program, and study other institutions moves into these areas as examples.
  
  Woudsma, Clarence, Planning, February 1, 2022 to May 31, 2022 at 100% salary
  
  The goals for this leave are to disseminate findings from recently completed research projects, writing papers on estimating local level transportation GHG emissions, co-modality and last mile delivery, and Work From Home transit impacts. The second is to conduct preliminary analysis on logistics property development data across Canada and develop a related SSHRC Insight Grant proposal based on last mile logistics land use and the city.

**FOR INFORMATION**

2. **Administrative Appointments**

   Diamond, James, appointment as Acting Chair, Department of Religious Studies, Faculty of Arts, July 1, 2021 to December 31, 2021.

   Ioannidis, Marios, appointment as Chair, Department of Chemical Engineering, Faculty of Engineering, July 1, 2021 to June 30, 2025.

   Janes, Craig, appointment as Director, Public Health Sciences, Faculty of Health, September 1, 2021 to June 30, 2022.

   Lemieux, Christiane, appointment as Associate Dean, Operations and Academic, Faculty of Mathematics, January 1, 2022 to December 31, 2024.
Sabbatical and Administrative Leaves – October 26, 2021

**Liebscher, Grit**, re-appointment as Acting Chair, Department of Communication Arts, Faculty of Arts, September 1, 2021 to December 31, 2021.

**Moresoli, Christine**, re-appointment as Associate Dean, Co-operative Education and Professional Affairs, Faculty of Engineering, September 1, 2021 to August 31, 2023.

**Seljak, David**, appointment as Chair, Department of Religious Studies, Faculty of Arts, January 1, 2022 to June 30, 2022.

**Sen, Anindya**, appointment as Associate Dean, Co-operative Education and Planning, Faculty of Arts, July 1, 2021 to June 30, 2022.

**Wettig, Shawn**, appointment as Assistant Vice-President, Graduate Studies and Postdoctoral Affairs, February 1, 2021 to January 31, 2023.

- **Administrative Appointment Changes**
  
  **Seljak, David**, appointment as Chair, Department of Religious Studies, Faculty of Arts, October 16, 2019 to June 30, 2022 changed to October 16, 2019 to June 30, 2021.

Vivek Goel  
President and Vice-Chancellor
Incidental Fees Fall 2021

At its June meeting, the Board of Governors approved the continuation of the fee assessment methodology applied over the previous 4 academic terms for Fall incidental fees.

- The incidental fees assessed and collected during the fall term 2021 from full-time and part-time undergraduate and graduate students were modified based on the anticipated public health guidelines that would be in effect from September to December. The fall term approach was finalized collaboratively by the presidents/vice-presidents of the Waterloo Undergraduate Student Association (WUSA) and the Graduate Student Association – University of Waterloo (GSA), the Vice-President, Administration & Finance, and the Associate Provost, Students and subsequently approved by the President and Provost. A report summarizing the outcome of the fall term incidental fee assessments was to be provided at the October Board meeting.
- In a typical fall term, there are approximately 80 incidental fees assessed to undergraduate and graduate students and approximately $20M is collected in revenue to the University, WUSA and the GSA.
- One of the primary determinants for continuing with a specific fee is the student’s opportunity to benefit from the service during the fall term.
- Approximately $752,000 of incidental fees were not assessed for the fall term including $750,000 related to the undergraduate student orientation fee (fall orientation was provided using virtual tools) as well as 5 graduate student society fees amounting to ~$2,000.
- The University is anticipating that the incidental fee assessments for the Winter 2022 term will revert to the pre-pandemic processes.

Dennis Huber
Vice-President,
Administration & Finance
This report is submitted following the committee’s deliberations during July 2021.

FOR INFORMATION

On 20 July 2021, the following resolution was passed on behalf of the Board of Governors.

1. **Financial Statements for Year Ended 30 April 2021**
   That the Board Executive Committee approve the Financial Statements on behalf of the Board of Governors.

Cindy Forbes
Chair, Executive Committee
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This report is submitted following the committee meeting of 30 September 2021. This report is recommended for inclusion in the consent agenda.

FOR INFORMATION

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1. General Oversight

Assessing Compliance Against Endowment Investment Guidelines. At the request of the committee, Finance staff prepared a tabulation of compliance for the endowment fund to assess compliance of the investment portfolio against the requirements of the investment guidelines. To date, Finance staff have taken responsibility for ensuring this compliance and the committee sought to formalize its role in that process. The committee was satisfied with the rigour and transparency of the approach, and this approach will be extended to all university funds whereby each will be reviewed for compliance in this manner on an annual basis.

Draft Revisions to Statement of Investment Policies and Procedures (SIPP), and Draft Fund Implementation Procedures (FIP). Earlier in 2021, the Pension Investment Committee embarked on an exercise to revise the SIPP to extract elements within the current SIPP that are not required for regulatory purposes and to migrate those elements to the new FIP document. The committee reviewed the proposed revised drafts and provided commentary on the proposed changes. These documents will similarly be brought to the Pension & Benefits Committee in October 2021, following which any necessary amendments to the drafts will be made. It is anticipated that recommendations for amendments to the SIPP and approval of the FIP will be brought forward to the Board of Governors in 2022.

Review of Draft Responsible Investment Policy. In tandem with the SIPP and FIP, the Pension Investment Committee has initiated the development of a responsible investment policy, as an outcome of the Board’s June 2021 approval of the Responsible Investment Advisory Group’s report and recommendations. The committee reviewed the proposed draft, and the document will similarly be brought to the Pension & Benefits Committee in October 2021 for review by that body. It is anticipated a recommendation to approve this new policy will be brought forward to the Board of Governors in 2022.

Responsible Investment – Implementation Update and Next Steps. The committee received an update from Finance staff on the operational implementation of the university’s responsible investing mandate, including the identification of a service provider for carbon metrics and the potential engagement/ advocacy partners under consideration. Finance staff continues to make progress on this dossier and will develop a single work plan to facilitate regular updates to this committee as well as to the Pension & Benefits Committee and the Pension Investment Committee.

Venture Capital Investment. The committee is exploring the potential of establishing venture capital investments in the endowment fund. This work is currently in the exploratory phase and aims to identify investment approaches that support faculty and students within the University community while also generating appropriate risk-adjusted returns.

/mg

James Schlegel
Chair
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FOR INFORMATION

1. Board Retreat Planning
The committee agreed to focus the board retreat agenda on specific aspects of the strategic plan, and the retreat will feature external speakers to provide a variety of diverse perspectives to Governors. As part of the planning exercise the President spoke to his priorities for the coming governance year, and details will be provided in the President’s Report to the October Board of Governors meeting.

The retreat will be held on Wednesday 1 December 2021 as an in-person at the Delta Hotel in Waterloo. As part of the retreat programming, a dinner event will be held for Board members the night before.

2. Receipt and Review of President's Mid-Year Report
In recognition of the recent start to the president’s term, the mid-year report from the president was forgone for the 2021-22 governance year and will resume for the 2022-23 governance year.

15 October 2021

Cindy Forbes
Chair
This report is submitted following the committee’s meetings of 18 June 2021 and 10 September 2021, for inclusion in the consent agenda.

FOR INFORMATION

1. **Renewal of Pension Administration System**
   Ariel is the system provided through LifeWorks that has supported the University’s internal administration of the defined benefit pension plan since November 1, 2016. The Application Services Provider agreement which provides the University with a license to utilize the Ariel software and to engage the vendor for corresponding services was a five-year less one-month agreement effective November 30, 2016, renewable for up to a total of five years. In view of the general satisfaction with the system, the committee renewed the agreement effective November 1, 2021 for a five-year period.

2. **Progress on Request for Proposal Process – Benefits Provider**
   As part of the implementation of the Board-approved changes to the employee benefits plan, the committee struck a working group (with support from Aon and from Procurement & Contract Services) to issue a request for proposals (RFP) for a benefits provider. The working group obtained responses to the RFP over the summer months and has met with prospective vendors to ascertain their unique offerings along with their fit to provide the University’s suite of employee benefits. The committee anticipates a recommendation from the working group in Fall 2021.

   Following the Board’s approval of the report and recommendations of the Responsible Investment Advisory Group (RIAG), employee representatives on the committee requested that a written legal opinion be obtained. The committee affirmed that legal advice was obtained on the same report as part of its development. The committee is supportive of obtaining a legal opinion and to be pragmatic will do so in tandem with the prospective Responsible Investment Policy; the latter document arises from the RIAG and is currently under development (with input from Pension & Benefits Committee and the Finance & Investment Committee), and it is anticipated that this will be completed in early 2022.

4. **General Oversight**
   The committee receives regular reports from the consulting actuary on legislative and policy changes anticipated and in force that impact public sector pensions, as well as changes implemented by other public sector pension plans. The committee discusses implications for the pension plan and takes the information into account when making decisions on matters including plan design, funding and administration.

As part of the general oversight function exercised by the committee, the committee has devoted attention to following issues: funded status of pension plan, including funding ratios, special payments, reserves, investment risk, and impact of market shifts on these calculations; annual report on benefits utilization.

/mg
Peter Barr
Chair
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At each board meeting, governors will receive a Report of the President to engage on matters of institutional importance. As I progress into my first year as president, I will evolve the structure of the report in consultation with management colleagues and the board, to support the aim of facilitating strategic engagement.

The board meeting each October includes a focus on progress made on the implementation of our five-year strategic plan. Accordingly, this report centers on updates across the plan’s three strategic theme areas and eleven goals. The development, tracking and analysis of a range of indicators to measure progress and inform our developments is an area I am giving particular attention in my first year. In this report, we are sharing several indicators traditionally used, organized by strategic goal. In the last section of the report, which will be discussed in our confidential section, a dashboard of institutional indicators against comparator groups helps in supplementing the strategic plan update. You will also see a section in the report on Files of Note, where recent developments outside of the strategic plan’s implementation are placed for discussion as needed during the meeting.

Given our approach to infuse into the annual board meeting cycle specific focus on our strategic plan’s thematic areas (ie. Talent in Winter, Communities in Spring, Research in Summer), I will also enhance this report’s structure for alignment. To achieve this, ‘spotlights’ on thematic progress will featured. This will also enable us to spend more of our time at meetings for engagement and discussion with spotlight presenters and how their progress is supporting the institution’s strategic direction.

I look forward to presenting highlights of this report next week and to an engaging discussion on the university’s strategic plan and progress. I would also welcome members’ suggestions and comments on the report’s evolving structure.
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# Table of Contents

**2020-2025 Strategic Plan Update Report**  
Progress including on key performance indicators on our three themes:  
Developing Talent for a Complex Future, Advancing Research for Global Impact and  
Strengthening Sustainable and Diverse Communities  

**Files of Note**  
Other institutional matters of importance
This report provides an update on the University of Waterloo’s progress on the Connecting Imagination with Impact, 2020-2025 Strategic Plan. The COVID-19 pandemic has prompted the University to review and adjust expectations and priorities. Our strategic plan served as an important guide during this period to ensure that we remained focused on our core priorities.

In this report, we provide an update across the plan’s three theme areas: developing talent for a complex future, advancing research for global impact and strengthening sustainable and diverse communities. In each theme, we provide an update on progress by specific goals, including next steps and indicators of our progress (measures) in a table format. The development of these indicators in relation to the strategic priorities is a work in progress. We will continue to seek out additional data sources, as well as collect our own data, in order to more closely align indicators with goals.

**2020-2025 Strategic Plan Update Report**

October 2021

The developing talent theme is comprised of four goals focused on core areas of our mission to provide robust and meaningful learning opportunities that prepare our learners for an ever-changing world. Understanding the realities of living in a world where change is the only constant was an important factor in how Waterloo was able to pivot to remote learning and experiential opportunities to ensure that our learners continued to be able to pursue their academic and experiential opportunities during the pandemic. Moreover, our continuing focus on innovation, interdisciplinarity, and work-integrated learning has informed our efforts in this theme area.

**Goal T1. Educate global citizens for the future of work and learning to thrive in an age of rapid change by putting learners at the centre of everything we do.**

Waterloo’s core mission is to educate learners. We have made important progress in this goal area, working collaboratively with faculties, academic support units and especially with Waterloo’s Indigenous and equity, diversity, and inclusion units. This goal area is also closely related to strengthening communities’ goals one, two, and four.

**Progress to date**

A critical initiative in this goal is the development of a Teaching and Learning Incubator, currently in early-stage development. The initial concept is to develop an incubator to serve as a hub to facilitate access to and collaboration across existing programs and services. This hub will nurture a culture of pedagogical innovation and amplify the impact of individual activities already underway and into the future. Examples of individual activities initiated so far include pilot projects to support flexible pathways and student agency, such as multi-disciplinary,
graduate student designed courses on “wicked problems” and student-led individually created courses.

New programs and updated existing programs are underway to reflect emerging needs in our changing world and future trends. Some examples are a new program is Sustainability and Financial Management, a program to educate a new kind of finance professional in an era of climate change and the redesign of architecture programs away from a Eurocentric orientation. For more about equity, diversity, and inclusion programing, see Goal C4.

Creating more flexible and active classrooms is also important to this goal area. Annualized funding has been secured to increase the number of flexible and active classrooms and a working group meets regularly to prioritize and propose solutions. This work supports active learning and integrates emerging good practices in EdTech, including flipped classrooms and creating spaces to support blended learning.

The pandemic expanded the use of digital technology for learning exponentially. Additional investments in educational technology are being made to support increasing use of digital tools and education. This includes the Blended Learning Project, the creation of an agile support team in the Centre for Extended Learning to support digital tools in education, and investments in new EdTech.

Expanded reflection and learning about the future of work in professional development courses for co-op and EDGE program students, along with career education have been developed to help in “future proofing” learners for changing realities in the world of work. This initiative is further discussed in the T3 goal.

Interdisciplinary programming is also being developed outside of formal curricula. An example is the Interdisciplinary Global Engagement Seminar that also draws on expert talent outside of academia. Open to students across all faculties, it will address a major global issue each year, with pandemics last year and water this year.

Specific initiatives in this goal area include:

- implementation of two separate surveys of instructors and students involved in hyflex courses in fall 2021 to support programs considering making this a more common feature in their future offerings;
- new online learning modules produced that can be shared by multiple courses;
- transition of courses developed for remote delivery during Covid into fully online offerings;
- design and renovation of two new flexible/active classrooms;
- offering of “from remote to flipped” workshops to support blended learning; and
- new MyCreds digital wallet launched to support students’ access to digital credentials and official document distribution.

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1 EDGE is an opt-in experiential education certificate program for undergraduate students in traditional (non-co-op) programs of study.
2 “Hyflex” generally refers to courses that are offered simultaneously to both in person and remote students. It differs from “blended learning” because participants can choose to attend in person or remote exclusively or not, while in blended learning participants engage in both in-person and online learning activities.
Next steps

The Teaching and Learning Incubator will produce the “next generation” of teaching and learning opportunities. We have begun consultations to inform its’ planning and development. The teaching and learning opportunities that emerge from the incubator will need to be evaluated to understand their impact, effectiveness and for continuous improvement. Better availability of information drawn from reflective activities in co-op and experiential learning can also inform decisions about evolving curriculum.

Work is also underway to develop new Indigenous, equity, and diversity curriculum (see Goal C4). As an example, the School of Optometry is part of a workgroup on de-colonization of the curriculum along with pharmacy, social work, and others.

These efforts will intensify and evolve as these important issues continue to develop.

Indicators

Table 1. T1 indicators

<table>
<thead>
<tr>
<th>Baseline Indicators</th>
<th>Year 1 (2014)</th>
<th>Year 2 (2016)</th>
<th>Year 3 (2020)</th>
<th>3 yr trend</th>
<th>Peer (2020)</th>
<th>Relative to peer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduating year students reported Waterloo contributed quite a bit or very much to solving complex real-world problems (NSSE)</td>
<td>55%</td>
<td>60%</td>
<td>63%</td>
<td>↑</td>
<td>U15 55%</td>
<td>↑</td>
</tr>
<tr>
<td>Graduating year respondents who participated in 2 or more high impact practices (NSSE)</td>
<td>55% (2014)</td>
<td>61% (2017)</td>
<td>61% (2020)</td>
<td>↑</td>
<td>U15 55%</td>
<td>↑</td>
</tr>
<tr>
<td>Graduate and professional degree respondents are satisfied with the relationship of program content to research / professional goals (CGPSS)</td>
<td>80% (2013)</td>
<td>84% (2016)</td>
<td>83% (2019)</td>
<td>↑</td>
<td>U15 82%</td>
<td>↑</td>
</tr>
</tbody>
</table>

Table 1 outlines indicators to help understand our progress in putting learners at the centre of what we do. These indicators aim to understand how students perceive the relevance of their training for their future careers.

3 Three year trends on all indicator tables is assessed by comparing year 1 data to year 3 data.
As our work in this area continues, it is important that we continuously gather data on the student learning experience. During the COVID-19 pandemic in spring 2020 and winter 2021, the university developed student and instructor experience surveys to facilitate quick responses to identified challenges in the new learning environment. We are continuing to apply and expand this data gathering model to better monitor progress. This model includes collecting information on experiences with blended learning, flipped and active classes, and educational technology. These efforts will provide critical feedback for stakeholders, inform progress towards achieving specific objectives, and help us understand overall progress in achieving the strategic plan goal.

**Goal T2. Enhance graduate and post-doctoral studies by emphasizing the unique attributes of the University of Waterloo and our talented and diverse graduate student community.**

Vibrant and dynamic programming, experiential learning and research opportunities are vital to grow graduate and post-doctoral studies at Waterloo and advance Waterloo’s research and educational goals.

**Progress to date**

A focus for this goal is developing programs that increase graduate students’ options for, and participation in, work-integrated learning (WIL). This initiative requires working closely with Graduate Studies and Post-doctoral Affairs, Co-operative and Experiential Education and the Office of Research and focuses on increasing WIL opportunities, as well as benchmarking, and advancing research activities that are motivated and funded by external partners.

The Interdisciplinary Initiatives Task Force made recommendations relevant to providing interdisciplinary programming in graduate programs. Related to these recommendations, new programs in climate change, biomedical engineering, and aeronautics programs are in development.

**Next steps**

Moving forward, additional efforts will be made to provide opportunities for graduate students to be involved in course design and the development of courses. These will be coordinated through the Teaching and Learning Incubator. A range of flexible work-integrated learning options are needed to meet graduate students’ needs.
Indicators

Table 2. T2 indicators

<table>
<thead>
<tr>
<th>Baseline Indicators</th>
<th>2013</th>
<th>2016</th>
<th>2019</th>
<th>3 yr trend</th>
<th>Peer</th>
<th>Relative to peer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of graduate and professional degree students rating quality of support and training for internships, practicum, and experiential learning as good, very good, or excellent (CGPSS)</td>
<td>68%</td>
<td>73%</td>
<td>63%</td>
<td>↓</td>
<td>2019: U15 62%</td>
<td>↑</td>
</tr>
<tr>
<td>Graduate and professional degree students rating of quality of support and training on career options as good, very good, or excellent (CGPSS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outside academia</td>
<td>51%</td>
<td>56%</td>
<td>60%</td>
<td>↑</td>
<td>2019: U15 51%</td>
<td>↑</td>
</tr>
<tr>
<td>Inside academia</td>
<td>61%</td>
<td>68%</td>
<td>62%</td>
<td>↑</td>
<td>2019: U15 54%</td>
<td>↑</td>
</tr>
</tbody>
</table>

The Canadian Graduate and Professional Student survey (CGPSS) offers several indicators focused on understanding the graduate and professional degree students’ level of satisfaction related to graduate studies objectives. While University of Waterloo graduate students are either at par or more satisfied with their preparation and training, we are working to increase their satisfaction with the quality of support they receive and training through experiential learning opportunities.

Unlike with undergraduate students, there is no national or provincial sector-wide graduate student outcomes survey. Beginning in 2022, Waterloo will implement an alumni survey data gathering tool. One of the expectations of this tool is to understand outcomes of specific academic activities, including experiential opportunities offered through graduate studies.
**Goal T3.** Continue to lead the world in co-operative education and support the workforce of the future through fully integrated academic and experiential learning opportunities.

The world of work is evolving rapidly. Maintaining relevant experiential learning opportunities requires near-constant innovation and focus. Action in this goal area will help us continue to lead the world in this important goal area.

**Progress to date**

Waterloo is making progress on supporting the workforce of the future. We are continuing to roll-out out the University’s future ready talent framework (FRTF) with its emphasis on 12 competencies expected to be in demand in the emerging global workplace. As part of this effort, pilot projects are underway to make useful student and employer data available to programs as they consider how to update curricula and contribute to our students’ future career readiness.

The COVID-19 pandemic negatively impacted co-op students’ employment rates. Regaining our pre-COVID co-op employment rates is an important focus for this goal area. To address the impacts of COVID-19 on our employers’ workplaces, we developed new co-op employment opportunities to meet these needs. Examples included hiring co-op students to support the university’s efforts to move learning online and providing supports for students to work remotely. Moving forward, we will continue to adapt to the post-COVID-19 employment reality and understand the skills needed for the emerging world of work.

An important project in this goal area is being implemented through Waterloo Experience (WE) Accelerate. This four-year project will examine the long-term outcomes of a new work-integrated learning option for unemployed first work-term students. Six hundred students have already opted in to participating in WE Accelerate.

Other initiatives in this theme area includes:

- will increase graduate student work-integrated learning opportunities (see Goal T2), including research activities that are motivated and funded by external partners;
- the Faculty of Health Experiential Learning Fund to create paid experiential learning opportunities for undergraduate students in the not-for-profit sector;
- student learning on management consulting and problem-solving through WatSolve;
- Hosting the first virtual global conference of the World Association of Co-operative with Education (WACE) with over 340 participants from 14 countries; and
- developing micro-credentials to align with Waterloo’s micro-credential framework (Goal T4).

**Next steps**

Moving forward, our efforts will focus on developing flexible models of co-op and work-integrated learning to increase participation among undergraduate and graduate students, drive program development towards “purposeful work,” continue to engage faculties with data from professional development reflections and use the future ready talent framework for curriculum development and review.
Indicators

Table 3. T3 indicators

<table>
<thead>
<tr>
<th>Baseline Indicators</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>3 yr trend</th>
<th>Peer</th>
<th>Relative to peer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-op employment rate (internal data)</td>
<td>97.6% (2018/19)</td>
<td>97.4% (2019/20)</td>
<td>92.5% (2020/21)</td>
<td>↓</td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td>Graduates who report that the skills learned at Waterloo were related to</td>
<td>2015</td>
<td>2016</td>
<td>2017</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>their job two years after graduation (OUGS)</td>
<td>Co-op</td>
<td>95.5%</td>
<td>97.3%</td>
<td>95.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non co-op</td>
<td>83.6%</td>
<td>84.7%</td>
<td>85.2%</td>
<td>↑</td>
<td></td>
</tr>
<tr>
<td>Graduates who earned over $50,000 two years after graduation (OUGS)</td>
<td>Co-op</td>
<td>79.9%</td>
<td>82.2%</td>
<td>84.4%</td>
<td>↑</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non co-op</td>
<td>37.5%</td>
<td>43.3%</td>
<td>41.9%</td>
<td>↑</td>
<td></td>
</tr>
</tbody>
</table>

In the global QS Employability ranking, Waterloo ranks 24th overall in the world, with an outstanding performance with respect to the connections with employers and improvements in all categories: employer reputation, alumni outcomes, student connections, and graduate employment rate. COVID-19 has impacted the graduate student employment rate but Waterloo’s recovery from this is well underway. The unique nature and volume of our co-op program does not allow for direct comparisons with other institutions. However, monitoring gaps in the skill relatedness and the earnings among co-op and non co-op graduates will allow
us to assess the progress and impact of the efforts to expand work integrated learning opportunities, including programs like EDGE and the WE Accelerate.

Moving forward, we need to develop a system to track participation in the expanded range of work-integrated learning as well as a system to gather information on the relevance and effectiveness of these opportunities. Continued development of our analytics database will enhance our capacity for more analysis and insight from employer and student interactions.

**Goal T4. Establish a unique Waterloo approach to support learning at various stages of individuals’ professional lives.**

Waterloo is responding to the evolving world of work by creating opportunities for lifelong learning, particularly those for mid-career professionals. These efforts will build on Waterloo’s existing robust connections with employers and industry.

**Progress to date**

Waterloo launched WatSPEED, a new professional development and learning unit aimed primarily at mid-career professionals, executives, and corporations. This unit is positioned within the academy, working closely with faculties, to leverage the University’s powerful academic resources for lifelong learning. A cornerstone of these efforts are strategic partnerships that WatSPEED has established with industry associations serving large professional memberships across Ontario and Canada (e.g., Chartered Professional Accountants of Ontario, and Ontario Society of Professional Engineers) and with strategic partners like the Canadian Institute for Health Informatics to advance AI knowledge for their technical staff.

Waterloo is also participating on an Ontario-wide university working group on micro-credentials, engaging with alumni, and closely monitoring provincial, national, and international developments in the area. Additionally, a new alumni expert series was launched by University Advancement to offer a new learning opportunity for Waterloo’s alumni community. The *Alumni Know* series is published in video and podcast formats, and the first episode has been viewed hundreds of times within a week of publishing.

**Next steps**

Beyond WatSPEED programs, a micro-credential framework for open enrolment and credit offerings for mid-career professionals are next steps to be developed. Waterloo is also pursuing open enrolment offerings and will continue to offer student upskilling through digital fundamentals courses and WE Accelerate programming offered by Co-operative and Experiential Education.

**Indicators**

WatSPEED is a new unit under development. Relevant and appropriate indicators will be developed as this new unit is developed. These indicators will focus on meeting critical milestones as this business unit reaches its maturity and incremental progress in attracting partnerships, funding, and program development.
Advancing research for global impact

The advancing research theme is comprised of three goal areas focused on optimizing Waterloo’s research strengths to make real change. This includes an important focus on disciplinary and interdisciplinary strengths, innovation in entrepreneurship, and strategic partnerships with researchers, other academic institutions and industry. Initiatives in this area are closely integrated with faculties, entrepreneurship and commercialization units, and Waterloo International.

The Advancing Research Action Team, responsible for implementing this strategic plan theme area, has identified key initiatives for each goal. Many of these have stemmed from the work of three Waterloo task forces: the Health Initiatives Task Force, the Innovation, Entrepreneurship and Commercialization Task Force and the Interdisciplinary Initiatives Task Force.

As articulated in the strategic plan, Waterloo’s research areas of strength will be brought to bear on addressing the human dimensions of global challenges, understanding, and enhancing human experiences and examining ways to translate knowledge for governance and policy, including for:

- quantum science, nanotechnology, connectivity and telecommunications;
- water, energy and climate: sustainability, security, infrastructure;
- information technology and its impact, including intelligent systems, human–machine interfaces, cybersecurity, privacy and data science;
- robotics and advanced manufacturing; and
- health technologies.

Goal R1. Waterloo will use its disciplinary and interdisciplinary strengths to solve increasingly complex, real-world problems.

As a comprehensive, research-intensive university, Waterloo has committed to solving important problems. By integrating our efforts and aligning our research strengths deliberately with important global challenges, we will be able to achieve greater research impact.

Progress to date

The Health Initiatives Task Force proposed that Waterloo support and grow health technology research, knowledge mobilization, and commercialization. Sustainable partnerships in health care at an institutional level will coordinate and leverage existing activities of health centres like the Centre for Bioengineering and Biotechnology (CBB), the Waterloo Eye and Brain Research Centre, and the Centre for Health Data Research.

Waterloo is also exploring how to align our research strengths with the global challenges as identified in the United Nation’s 17 Sustainable Development Goals through coordination between faculties and research centres / institutes and strategic national and international partners. This will enhance our ability to form diverse, interdisciplinary research teams to solve real-world problems. A recent example is the Senate’s approval of the Waterloo Institute for
Sustainable Aeronautics, which brings researchers from all six faculties together with industry to conduct interdisciplinary research.

Interdisciplinary work requires creating opportunities for collaboration; this can be facilitated by increasing the number of networking events, and venues, for interdisciplinary collaboration on campus. Opportunities being explored include new interdisciplinary hubs with flexible space that can house interdisciplinary discussions and research to address a set of societal issues and global challenges.

**Next steps**

A deeper understanding of Waterloo’s interdisciplinary collaborations is required to identify areas of strength and areas that could benefit from additional stimulation. Further development of more sensitive and sophisticated metrics will support these efforts. New, collaborative programming for graduate students can also support and further expand interdisciplinary research. Interdisciplinary and collaborative research partnerships will maximize our impact for the global good.

**Indicators**

**Table 4. RI indicators**

<table>
<thead>
<tr>
<th>Baseline Indicator</th>
<th>Research areas of strength</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quantum science, nanotechnology, connectivity &amp; telecommunications</td>
</tr>
<tr>
<td><strong>Tri-Agency research funding</strong></td>
<td>$135M 3rd in U15</td>
</tr>
<tr>
<td><strong>Field weighted citation index</strong></td>
<td>1.89 4th in U15</td>
</tr>
<tr>
<td>Publications in top 10%*</td>
<td>26.1%</td>
</tr>
<tr>
<td>Proportion of international publications*</td>
<td>61.3%</td>
</tr>
</tbody>
</table>

Waterloo’s areas of strength can be examined and benchmarked using a combination of common funding and publication metrics. The R1 indicators table uses funding and bibliometric indicators to depict our performance in the selected areas. They closely match, but likely not perfectly, the identified areas of research strengths. Moving forward, these indicators will be discussed and further developed with the (Waterloo) research community.

Efforts to develop new indicators are also needed in two vital areas: interdisciplinary research and social impact. Building on the recommendations of the Interdisciplinary Initiatives Task Force, we must consider establishing metrics to effectively capture interdisciplinary research activity to recognize and incentivize faculty merit, tenure, and promotion assessment. To support our commitment to global impact, we need to establish both a conceptual and a methodological framework for measuring social impact, including our influence on social policies, knowledge exchange, and participation and recognition of Waterloo on the global stage.

**Goal R2: Propel Waterloo’s global leadership in innovation, entrepreneurship and social impact.**

Waterloo’s leadership in innovation, entrepreneurship and social impact is one of our defining features. As examples of strength, this past June, $1.1B was invested in Waterloo region, doubling the amount previously invested in the region in just one month. CBRE also ranked Waterloo region as the #1 small tech talent region in North America, well ahead of larger cities like Chicago or Philadelphia. In this goal area, Waterloo will work to remove barriers, build opportunities, and create an environment that supports and optimizes innovation, entrepreneurship and social impact.

**Progress to date**

The Innovation, Entrepreneurship and Commercialization Task Force identified recommendations to help advance Waterloo’s leadership in innovation and entrepreneurship through its research and curricular endeavors. Key activities that build on these task force recommendations include:

- coordinating a cohesive landing spot and approach for campus innovators to access entrepreneurship and commercialization support systems via collaboration;
- deploying a pre-seed/seed fund that promotes productive ecosystem engagement and aligns incentives toward value creation with a “deep tech” focus;
- increased training and awareness in intellectual property education; and
- increasing the gravitational pull of people, companies, and resources that accelerate entrepreneurship and commercialization (with a focus on alumni for management / advisory support for startups).

Another important endeavor is to create the Innovation Arena which is expected to be launched in 2023. The arena is a partnership with the City of Kitchener, Western University and Medical Innovation Xchange with an investment of $10M from FedDev Ontario to build a Southwestern Ontario Health Innovation Network. The Innovation Arena will be a connected health- and technology-commercialization community located within Downtown Kitchener’s Innovation
District. Businesses, funders, and community partners will come together with Waterloo’s researchers and emerging talent to solve local and global health challenges, advance innovation and technology solutions, and drive Canada’s next wave of economic growth. The Arena is part of the expansion of Waterloo’s health sciences campus and the new home for Velocity, Waterloo’s incubator for early-stage, pre-seed technology startups. These efforts will increase Waterloo’s capacity for innovation, commercialization, and entrepreneurship.

Of the $10M investment, $6.5M is allocated to Velocity to continue providing critical support for early-stage start-ups and further the exponential growth of the regions’ tech ecosystem. This partnership will strengthen the Canadian tech ecosystem, specifically in health and medtech by supporting innovators and entrepreneurs from start to scale, providing partners with business, clinical and regulatory expertise, in addition to access to labs, facilities, and equipment. Some of the funding will be allocated to lab equipment for the Innovation Arena.

Velocity continues to be a key player in driving innovation on campus and beyond. Velocity alumni and residents have collectively raised over $2.4B USD, a 40% increase from the $1.7B that was raised by the end of 2020. In addition, forty of Velocity’s residents have been accepted into Y Combinator to date, the world’s most renowned seed stage incubator.

We also hosted the fourth virtual Waterloo Innovation Summit, with a theme of “Recalibrating for Social and Economic Prosperity.” The event featured expert from the Monk School of Global Affairs and Public Policy (Dan Breznitz) and a panel of Indigenous, corporate and research leaders discussing policy and economic imperatives for an equitable rebuilding post-COVID.

Next steps

A next step in the innovation domain is to operationalize the Innovation Arena and initiatives within it. We will finalize executive leadership input on several major initiatives proposed by the three task forces. Cooperation across programs and faculties is essential to meeting the diverse needs of students within the innovation and entrepreneurship arena.

15 new searches for Canada Research Chairs are underway to advance global leadership in innovation and entrepreneurship. Research areas of focus include technology and social change, data science, sustainability and renewable energy, and public health among others.

Indicators

Table 5. R2 indicators

<table>
<thead>
<tr>
<th>Baseline Indicators</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>3 yr trend</th>
<th>Peer</th>
<th>Relative to peer</th>
</tr>
</thead>
</table>
### Baseline Indicators

<table>
<thead>
<tr>
<th>Pitchbook ranking: Cumulative capital raised since 2006</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>3 yr trend</th>
<th>Peer</th>
<th>Relative to peer</th>
</tr>
</thead>
</table>

- **2020:**
  - UW: 19th
  - McGill: 24th
  - UoT: 25th

The Pitchbook global ranking offers a snapshot of Waterloo’s standing in Venture Capital-backed entrepreneurship associated with academic institutions. Waterloo continues to maintain a strong competitive position in this area, both nationally and internationally. In terms of monitoring our own progress over time, Waterloo is considering indicators of student and faculty participation in entrepreneurial training, development, and venture creation.

**Goal R3. Achieve greater research impact by leveraging Waterloo’s partnerships.**

Partnerships are key to enhancing Waterloo’s research endeavors along several dimensions, including:

- formal partnerships with strategic research institutions,
- private-sector partnerships to develop and deploy new technologies, and
- partnerships within the public and not-for-profit sector to catalyze important policy development.

Partnerships are developed as our students travel to work and study at other universities and institutions, as our faculty collaborate with other researchers, and as our staff learn and contribute to good practices in higher education.

To facilitate our work with industry, the University is in the process of hiring a Director, Research Security. This will facilitate the development of the institutional regulation concerning research security with private partners and more broadly.

**Progress to date**

This year, Waterloo International has secured more than twenty new international research partnerships despite the challenges of remote connectivity. Initial work has begun on the Blackberry-Waterloo Joint Innovation Lab and Rogers 5G hardware is available on campus for joint research with Rogers 5G.

**Next steps**

Waterloo will increase joint publication output and operationalize new partnerships.
Indicators

Table 6. R3 indicators

<table>
<thead>
<tr>
<th>Baseline Indicators</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>3 yr trend</th>
<th>Peer</th>
<th>Relative to peer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leiden Ranking, International Collaborations</td>
<td>54.2%</td>
<td>55.1%</td>
<td>57.6%</td>
<td>↑</td>
<td>4th in U15</td>
<td></td>
</tr>
<tr>
<td>Leiden Ranking, Industry Collaborations</td>
<td>5.6%</td>
<td>5.4%</td>
<td>5.8%</td>
<td>↑</td>
<td>Tied for 6th in U15</td>
<td></td>
</tr>
<tr>
<td>International research funding (internal data)</td>
<td>$18.7M</td>
<td>$21.0M</td>
<td>$19.2M</td>
<td>↑</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Percentage of total research funding from industry (internal data)</td>
<td>28.4%</td>
<td>26.0%</td>
<td>25.9%</td>
<td>↓</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

The Leiden Ranking uses bibliometric data from Web of Science to evaluate universities’ collaborations through co-publications with international and industry authors.

Waterloo international and industry research funding data is drawn from the Office of Research’s internal system. Industry funding includes both funding that is direct industry funding as well as government funding matched to industry funding.
Strengthening sustainable and diverse communities

Waterloo’s communities are integral to our growth and success. In these four goal areas, we focus on continuing to develop communities that bolster and support students, faculty, staff and alumni, while also working to create physical and natural environments that are safe, inclusive, sustainable and effective.

Goal C1. Be a people–centered institution committed to genuine care, concern, respect, inclusivity and well–being for all.

Waterloo is committed to building communities that demonstrate genuine care and concern for our students, faculty, staff, alumni, and the world in which we live. We all belong here.

COVID-19 significantly impacted the community theme since most of the physical aspects of campus have been restricted. During this time, most students and staff worked and learned remotely. This resulted in a major change in how services were delivered and community was created. New services and ways of delivering services were developed to address these changing realities. As the COVID-19 pandemic evolves, Waterloo remains committed to safely building community through both in-person and remote experiences.

Progress to date

In fall 2021 an important community building space was launched: the renovated and new community building space in the Student Life Centre and Physical Activities Complex (SLC/PAC). This space includes social, study, dining, event, and multi-faith space and will greatly enhance student life on campus.

Mental health efforts continue to be a focus in this goal area. Continued implementation of the President’s Advisory Committee on Student Mental Health (PAC-SMH) recommendations include initiatives around peer mentorship, student communications, and development of a mental health framework for use when writing new or reviewing existing policies and procedures. A new equity-informed mental health literacy program was launched in May 2021 underpinned by 12 competencies to develop a baseline level of mental health literacy across campus. This program aims to reduce stigma and encourage help-seeking behaviours. Cohort offerings will be available each month.

The Wellness Collaborative includes initiatives related to physical, social and mental health in addition to resilience, belonging, spiritual well-being, and institutional commitment to wellness at all levels. Some of these initiatives include mobilizing the Okanagan Charter and the Healthy Workplace Statement and implementing a performance measurement framework aligned with Ontario Quality Health Framework for primary care. Developing a mental health literacy training program, discussed above, has already been implemented.

The period since March 2020 has been particularly challenging for our international students with changing governmental and public health requirements and increased stress caused by the COVID-19 pandemic and restrictions on international travel. We have developed plans to co-
locate central supports for international students in a visible hub. This effort will provide more support and awareness of existing programs and services. A new International Peer Community program is in development. This program will feature weekly events connecting international students to upper-year volunteers and collaboration and integration of activities between the International Peer Community and International Canadian Student Network (ICSN) which will help new international students settle in and feel at home at the University of Waterloo.

Next steps

Future development of this goal area will include reviewing student support programs through an equity lens and moving campus culture toward viewing student experience as a shared responsibility where “every interaction is an opportunity.”

While student experience data based on national and other surveys is abundant, it is challenging to find effective ways to measure our progress on the specific strategic plan goals and objectives. We are developing a Waterloo student survey that will offer a flexible, modules-based approach to collect real-time feedback from our students so that we can better assess how initiatives are impacting on student experience and their well-being.

Next steps in this area also include developing a comprehensive assessment framework to guide student experience setting, along with continuing with an integrated approach to addressing wellness for all populations at Waterloo (students, faculty, and staff).

Indicators

Table 7. C1 indicators

<table>
<thead>
<tr>
<th>Baseline Indicators*</th>
<th>2019</th>
<th>2022</th>
<th>2025</th>
<th>3 yr trend</th>
<th>Peer</th>
<th>Relative to peer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of students who feel Waterloo has a sincere interest in their well-being (NCHA)</td>
<td>63.0%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>CAN 79.1%</td>
<td>↓</td>
</tr>
<tr>
<td>Proportion of students who agree and strongly agree that the campus environment is one where mental health is supported (NCHA)</td>
<td>60.6%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>CAN 74.5%</td>
<td>↓</td>
</tr>
<tr>
<td>Proportion of students who agree and strongly agree that they are aware of how to access mental health supports / services on campus (NCHA)</td>
<td>59.1%</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>CAN 56.5%</td>
<td>↑</td>
</tr>
</tbody>
</table>

*The NCHA survey is administered every three years. The most recent survey year is 2019
In the coming year Waterloo will participate in several information gathering processes to ensure we track and monitor student experience effectively. This includes the Canadian University Student Survey (first year students), the Canada Graduate and Professional Student Survey, Canadian Postsecondary Education Alcohol and Drug Use Survey, and wellness surveys. These surveys are in addition to Waterloo’s own student, instructor and equity surveys which are already in progress or will also be implemented in this academic year.

**Goal C2. Foster a connected and supportive community that inspires students, faculty, staff and alumni to achieve their personal, academic and professional goals.**

Action in this goal area cuts across all of our communities. A connected and supportive community requires programming to support students, faculty, staff and alumni. Initiatives to support student well-being have been focused on the C1 goal area, although both goals overlap substantively.

**Progress to date**

We are focused on improving employee engagement. To do this, we are improving training, collaboration, and efficient work processes and developing a robust talent and leadership framework. Human Resources is also working to identify requirements for the formal talent, leadership and performance frameworks, and continue to implement continuous improvement efforts. A standard process to manage workplace accommodations is also in progress.

Efforts to create a culture of involvement for both students and employees will create a sense of belonging and community at Waterloo. A comprehensive communications plan for students is being developed building on the student communications review recommendations. Peer networks are being created to welcome students and engage them in inclusive digital communities and student-focused channels.

Inbound and outbound student mobility has been impacted by COVID-19 travel restrictions. We are confident the demand remains strong and can be built back to pre-pandemic levels. A more visible, centralized space to promote exchange opportunities through the international student hub will greatly enhance these efforts.

A new online application platform has been developed for graduate students. The initial iteration of this portal will allow students to apply to Waterloo through a University-managed portal. The longer-term goals of the program are to improve student experience and to facilitate greater marketing and recruitment efforts for our graduate programs.

*Connected in Spirit, Alumni Black and Gold Day @ Home* was held in late September through a virtual platform of events with approximately 600 alumni. Innovative programming including an opportunity to purchase a ‘concert in a box’ channeled financial support to student wellness through UW MATES, a peer-to-peer support program operated through the Waterloo Undergraduate Student Association.
The Alumni Office is working to create and support unique opportunities for learning and partnerships with alumni, including the global alumni volunteer network and the student-alumni bridge program. This program will engage students and link them with alumni. Fourteen pan-University alumni events were hosted, which engaged just over 3,000 alumni. In September, the Alumni Office launched an alumni survey that will measure alumni attitudes on engagement programming at Waterloo. Responses will influence operations plan for fiscal year 2022/2023 and beyond.

**Next steps**

Completing and implementing the university’s Holistic Benefit Review and developing a formal continuous improvement curriculum are important next steps to achieve this goal area.

**Indicators**

**Table 8. C2 indicators**

<table>
<thead>
<tr>
<th>Baseline Indicators</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>3 yr trend</th>
<th>Peer</th>
<th>Relative to peer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduating year students who feel part of a community at Waterloo (NSSE)</td>
<td>64.0% (2020)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>2020: U6 60% U15 64%</td>
<td>-</td>
</tr>
<tr>
<td>International graduating year students who feel part of a community at Waterloo (NSSE)</td>
<td>68.1% (2020)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Graduating year students who feel as if they belong at Waterloo (CUSC GY)</td>
<td>72.0% (2015)</td>
<td>75.0% (2018)</td>
<td>-</td>
<td>-</td>
<td>2018: U15 76%</td>
<td>↓</td>
</tr>
</tbody>
</table>

Waterloo Employee Engagement Survey – lowest scoring dimensions

- Training: 48% (2019)
- Collaboration: 52% (2019)
- Work, structure & processes: 48% (2019)
- Confidence in leadership: 60% (2019)
*The NSSE survey is administered every three years; the most recent survey year is 2020; NSSE 2020 survey questions in the table above were new questions added in 2020. The CUSC graduating year survey is administered every three years as well.

Table 8 shows only a few of the numerous potential indicators that measure students’ sense of community and belonging. These indicators are commonly used in North America, including Canada, and point to the ultimate outcome of our efforts. Like with other objectives relevant to the student experience, we expect to complement this data with a Waterloo-made survey and indicators that depict and assess the progress and impact of specific initiatives.

**Goal C3. Continue to leverage our resources to engage, develop and build our capacity and infrastructure to create a sustainable and effective institution.**

A sustainable and effective institution underpins Waterloo’s success. By leveraging our resources, we can create infrastructure that can allow us to achieve our collective goals and ambitions.

**Progress to date**

Waterloo has committed to a sustainability strategy and climate action plan. In the Shift:Neutral climate action plan (part of a broader plan to reach carbon neutrality by 2050), these efforts include new construction and life cycle costing guidelines, and energy and carbon project identification and initiation. In the Shift:Zero waste action plan, efforts include restarting and expanding specialized collection / waste diversion programs. Additionally, Waterloo is piloting a Green Labs program, expanding electric vehicle infrastructure, completing a campus-wide energy audit, continuing the Sustainability Action Fund, and initiating a United Nations Sustainable Development Goals project which will include mapping, awareness building and integration.

**Next steps**

In the future, we will need to prioritize institutional sustainability objectives. There is tremendous interest in and support for working toward sustainability, as evidenced by the Climate Emergency Declaration, and there is a willingness to embrace and manage change. Long-term planning is required for major infrastructure transitions and additional programs and incentives are needed to minimize waste generation.

To advance our efforts, there must also be a shift from “optional practices” in sustainability to systematic integration of sustainability practices across policies, guidelines, and processes. There also needs to be alignment between departmental objectives with institutional commitments. This will also require that resources are aligned to sustainability efforts and deployed to support them.
Indicators

Table 9. C3 indicators

<table>
<thead>
<tr>
<th>Baseline Indicators</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>3 yr trend</th>
<th>Peer</th>
<th>Relative to peer</th>
</tr>
</thead>
<tbody>
<tr>
<td>STARS certification</td>
<td>Silver (2018)</td>
<td>-</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>By 2025, achieve a 60% diversion rate</td>
<td>33.2% (2019)</td>
<td>29.4% (2020)</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Decrease Scope 1 and 2 emissions by 17.5% from the 2015 baseline by 2025⁴</td>
<td>+8.0% (2019)</td>
<td>+2.4% (2020)</td>
<td>-</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Waterloo aims to achieve a gold certification in STARS by 2025. Currently, we are in the process of submitting data from the next certification cycle. We expect to maintain our silver certification. The STARS certification is primarily focused on environmental sustainability but also includes indicators related to sustainability in social, economic, health, and well-being dimensions.

**Goal C4. Promote and support Indigenous initiatives and a culture of equity, diversity, and inclusivity for all.**

Indigenization and equity issues dominated numerous consultation processes during the development of this strategic plan and in the years since there has been only increased emphasis on them, both on campus, and in our broader world. Our goal focussed on Indigenous initiatives and creating a culture of equity, diversity and inclusivity for all has never been more relevant.

**Progress to date**

A key review of the Office of Human Rights, Equity and Inclusion was completed, and the final report received. The University is moving ahead to implement the recommendations of this report, many of which are reinforcements of work underway or planned. To start, two new organizational units led by associate vice-presidents have been created, reporting to the Vice-President, Academic and Provost. The Office of Indigenous Relations will be led by Jean Becker, who will take on the new title of Associate Vice-President, Indigenous Relations. The Office of

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⁴ Emissions intensity (emissions/m²) has decreased since 2015 given newly constructed spaces. More analysis required to understand where gains are made and the attributing factors.
Equity, Diversity, Inclusion and anti-Racism will be led by Dr. Christopher Taylor. Both AVPs and their teams will fulfil mandates to influence academic planning, strategic planning, and decision-making at all levels of the University.

Developing and implementing Waterloo’s Indigenous Strategic plan, and commitment to acting on the Truth and Reconciliation recommendations are two key actions that contribute to this goal. Waterloo has committed to increasing representation of Indigenous and Black faculty and students through strategic hires and specialized recruitment. As part of this, the University has also launched a cluster hire initiative that will see additional of ten new Indigenous and ten Black faculty members. As an example, the School of Optometry has created an equity, diversity, and inclusion committee with a broad mandate to address admissions, curriculum, clinical placements, and access to eye care leveraging technology for rural and remote communities.

In the area of academic programming, we are implementing new Black studies programs and enhancing Indigenous studies (related to Goal T1). The two new Black studies programs approved by the Senate Undergraduate Committee includes a program in Fundamentals of Anti-Racist Programming. Substantial changes have also been made to re-orient and decolonize degree programs in Architecture.

The Centre for Teaching Excellence has hired a Senior Education Developer in Indigenous and Anti-Racist Pedagogies. This developer will be available to instructors and programs to help them think through modifications to their courses and programs and will play a role in recruiting team members to work with them in the centre and across campus. A Black Recruiter has been hired and an Indigenous Recruiter hire is in progress.

For students, Waterloo is increasing financial support for Indigenous and Black students through scholarships and bursaries and building community through Indigenous and Black designated spaces with an outdoor Indigenous Gathering Circle in North Commons and designated rooms on campuses for smudging.

The five working groups and four implementation teams that comprise the President’s Anti-Racism Taskforce (PART), established in 2020 are on track for completing their mandate. The working groups are: Educational Environment and the Development of Learners; Code of Conduct and Safety; Health and Mental Health; Professional and Academic Development and Mentorship, and Race, Culture and Ethnicity. The four implementation teams include Black Studies Programming, Campus Representation, Equity Data Advisory Group, and Race, Culture and Ethnicity Awareness. PART has also implemented a communications strategy. This strategy includes a new newsletter, Catalyst, and monthly anti-racism forums bringing together 150 leaders across campus and the affiliated colleges.

University Relations has organized a three-part anti-racism training with an external consultant. A communications team is also developing an EDI-style guide for campus communicators, which will be ready in early January. An anti-racism communication officer was hired in June of 2021.

Next steps

The efforts described here require a commitment to ongoing funding for equity, diversity and inclusivity, and Indigenous initiatives.
Indicators

To support these efforts, the University has launched a new equity-related demographic data collection survey. The survey will provide a more detailed and nuanced understanding of Waterloo’s demographic composition and will help us analyze enrolment, participation and outcomes for equity deserving groups. Data from the first round of the data gathering will be available at the end of 2021. Moving forward, this data gathering will be done through the administrative systems and used as a vital annual tool to inform our practice and improve our efforts in equity, diversity and inclusivity.
Files of Note

This section of the Report of the President contains other matters of importance arising since the last report, for Governors to note and for discussion during the meeting of the Board.

1. **Enrolment to date against tuition/budget**
   - For the combined 2021 Spring and Fall academic terms, the University slightly exceeded its $358 million tuition budget while generally meeting its enrolment targets despite some program mix changes and a minor under enrolment in first year international undergraduate students.

2. **COU Fall Advocacy Strategy**
   - Work with government to increase university revenue sources including tuition flexibility and/or operating grants to meet the growing needs of students, research and innovation
   - With tuition increases universities commit to providing an increase in institutional student financial assistance to continue to enhance student access
   - Province needs to increase operating funding to expand spaces in high-demand programs to ensure Ontario has the talent for the future
   - Need to develop a longer-term financial sustainability plan for the sector to provide predictable and stable funding

3. **Ontario Red Tape Bill (Colleges and Universities)**
   - Province attempting to update the degree consent process for colleges, private and out-of-province institutions and streamline the approval process for new programs
   - Changes to college degree-granting authority to include applied master's and three-year degrees

4. **Policy 42 Revisions (Prevention and Response to Sexual Violence)**
   - Policy revisions to be brought forward to February Board meeting, in line with the province’s recently approved regulations
   - Work underway on review of the policy and potential changes in light of new regulations

5. **National Security Research File**
   - Federal government imposing mandatory national-security risk assessments on NSERC funding requests from university researchers that involve private-sector partner organizations
   - Process to be expanded to all federal granting councils and the Canadian Foundation for Innovation in the near future
   - Waterloo is setting up resources to support these assessments in the Office of Research
This report is submitted following the committee’s meetings of 14 July 2021 and 30 September 2021.

FOR APPROVAL

1. APPOINTMENT OF EXTERNAL AUDITORS
Motion: To reappoint Ernst & Young as the university’s external auditors for the fiscal year ending 30 April 2022.

Background: This recommendation is made with the endorsement of the vice-president, administration & finance, and in conjunction with the approval of the audit plan and fees for 2022 (see item #3 of this report below).

FOR INFORMATION

2. AUDITED FINANCIAL STATEMENTS
The audited Financial Statements for the fiscal year ended 30 April 2021 were reviewed by members at the 14 July 2021 meeting and approved by the Board Executive Committee on behalf of the Board of Governors on 20 July 2021.

3. EXTERNAL AUDIT PLAN AND FEES FOR 2022
The committee reviewed and approved the external audit plan and fees for the fiscal year ended 30 April 2022 as proposed by external auditors Ernst & Young, concluding that the approach and fees are appropriate.

4. DIRECTORS AND OFFICERS INSURANCE
The committee reviewed coverage and found it satisfactory.

5. UNIVERSITY RISK MANAGEMENT PROJECT UPDATE
The committee received a brief status report on the university risk management program, as well as the university’s biannual risk assessment in accordance with Policy 11 – University Risk Management.

6. CYBERSECURITY
The committee heard a presentation about the University’s cybersecurity activities at its meeting on 14 July and recommended that a presentation be made to the Board at its October meeting on this subject.

Russell Hiscock
Chair
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FOR DECISION

1. Renovations to the Third Floor, Earth Sciences & Chemistry (ESC) Building

Motion: That the Board of Governors approve a revised $22.14 million budget ($4.64 million increase) for renovations to the 3rd floor of the Earth Sciences & Chemistry Building (ESC).

Background: In January 2021, the Building & Properties Committee approved a $17.5 million budget for renovations to the 3rd floor of the Earth Sciences & Chemistry Building based on recent studies conducted by a multi-disciplinary engineering team with expertise in rehabilitating wet science buildings. The high-level review included the Earth Science & Chemistry Building, the Biology 1 (B1) building, the Biology 2 (B2) building, and the Chemistry 2 (C2) building which were constructed during the 1960s and 1970s. These studies identified the high-level renewal requirements to modernize the buildings while improving space utilization. Although the multi-building renewal is planned to occur over many years in multiple phases, the initial phase would include the renovation of 25,000 square feet of labs located on the third floor of ESC.

The initial budget was based on a high-level masterplan and “order of magnitude” cost estimate. During Schematic Design, the scope of work was better defined, and this revised budget is based on a “Class D” construction cost estimate. The overall increase of 26.5% is attributable to this increase in scope (including $1.37m for additional lab spaces, mechanical systems, and abatement) as well as construction cost escalation ($3.27m) due to COVID and other market forces.

The recommended $22.14 million budget is based on a Class D estimate (including net HST):

<table>
<thead>
<tr>
<th></th>
<th>Estimate $000s</th>
<th>Revised Estimate $000s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction ($560/sf)</td>
<td>14,000</td>
<td>($722/sf) 18,045</td>
</tr>
<tr>
<td>Contingency</td>
<td>1000</td>
<td>1355</td>
</tr>
<tr>
<td>Professional Fees</td>
<td>1800</td>
<td>1960</td>
</tr>
<tr>
<td>Disbursements</td>
<td>150</td>
<td>165</td>
</tr>
<tr>
<td>Building Automation</td>
<td>150</td>
<td>165</td>
</tr>
<tr>
<td>Network Connectivity</td>
<td>300</td>
<td>350</td>
</tr>
<tr>
<td>Permits</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>17,500</td>
<td>22,140</td>
</tr>
</tbody>
</table>

The 50:50 cost matching commitment has increased from $8.75 million to $11.07 million and will be shared by the Faculty of Science together with the Provost (central funding). External funding opportunities will continue to be pursued. This funding strategy only applies to this specific phase.
2. Warehouse Building on UW’s Health Sciences Campus (Health Innovation Arena)

Motion: That the Board of Governors approve a revised budget of $34.4 million to the Board of Governors for the renovation of UW’s warehouse building on the Health Sciences Campus in downtown Kitchener.

Background: In October 2020, the Board of Governors approved a preliminary budget of $30M. This estimate was based on a notional program and list of requirements.

At that time the following was understood:
- The University acquired the warehouse land and buildings for $5 million in November 2005 at the time of the creation of the Health Sciences Campus. Prior to the purchase, Conestoga-Rovers & Associates conducted a site inspection and reviewed a Phase I Environmental Site Assessment (ESA) undertaken by the owner during the summer of 2005
- The building is approximately 90,000 sq. ft. across two floors and was used as a warehouse
- The University arranged for Conestoga-Rovers & Associates to complete a Phase II Environmental Site Assessment in 2006. The Phase II ESA involved the collection and analysis of soil and groundwater samples from the property which determined:
  - The site contains surficial fill materials estimated at 34,000 cubic metres which is a mix of materials; some areas do not meet MOE Table 2 residential or community land use standards. A risk assessment and the development of a risk management plan is required to confirm if these materials are protective of human health and the environment and can remain on site. However, any excavated fill materials removed during construction would likely need to be disposed of off-site at a permitted landfill. The investigation of groundwater quality identified some limited groundwater impact which is likely manageable using the same risk management approach
- The building requires an entirely new envelope (roof/ exterior walls/windows/doors), additional exits, new mechanical/electrical services, and interior fit out
- Velocity would occupy one floor which would include 17,700 sq. ft. of lab space in this new health tech hub
- The project will be completed in phases, with the building envelope, core mechanical/electrical services completed in Phase 1 along with partial interior fit-out

Diamond Schmitt Architects (appointment approved April 2021 by Board) and their team of subconsultants, engaged with the Velocity stakeholders to validate the program and determine laboratory requirements. This along with an existing conditions investigation, informed a schematic design and Class ‘D’ estimate.

Revised Budget ($000s including contingency & net HST) for 90,000 sq. ft.:

<table>
<thead>
<tr>
<th>Description</th>
<th>Preliminary Budget ($'000s)</th>
<th>Revised Budget ($'000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction ($264/sf)</td>
<td>23,780</td>
<td>($303/sf) 27,270</td>
</tr>
<tr>
<td>Contingency</td>
<td>1,780</td>
<td>2045</td>
</tr>
<tr>
<td>Professional Fees</td>
<td>2,600</td>
<td>2950</td>
</tr>
<tr>
<td>Building Automation</td>
<td>435</td>
<td>500</td>
</tr>
<tr>
<td>Network/AV/Security</td>
<td>305</td>
<td>350</td>
</tr>
<tr>
<td>Permits</td>
<td>250</td>
<td>285</td>
</tr>
<tr>
<td>Cost Escalation</td>
<td>850</td>
<td>1000</td>
</tr>
<tr>
<td>Total</td>
<td>($333/sf) 30,000</td>
<td>($382/sf) 34,400</td>
</tr>
</tbody>
</table>
The tentative funding for the project includes University operating funds redirected from rent payments currently incurred for Velocity over 10 years amounting to $7.5m (net of operating costs which would be redirected to operating costs of the new space), the City of Kitchener for a maximum contribution of $8.5M, a $1.5m donation, with the balance being pursued through other levels of government as well as further donations and potentially operating funds. The funding arrangement with the City of Kitchener includes a commitment by the University to provide the City with 5,000 sq. ft. of space and a prorata repayment of the City’s capital funding in the event the University terminates its planned use of the space within 15 years of the completion date.

FOR INFORMATION

3. Science Laboratories Renovation

On behalf of the Board, the committee approved:

1) a $6.8 million total project budget for renovations to create new science labs on the 3rd floor of the Biology 1 building and the 1st floor of the Biology 2 building; and
2) the award of a stipulated price contract to Harbridge + Cross Ltd. for $5,196,000.00 plus HST.

Background: Developed in coordination with the Biology 1 (B1), Biology 2 (B2), and Earth Science Chemistry (ESC) buildings master renewal plan, this project provides new biology laboratories which are critical to the teaching and research activities of the Faculty of Science.

McCallum Sather Architects were previously selected through a competitive selection process to undertake the B1, B2, and ESC master renewal plan as part of this laboratory design project to ensure that future multi-phase lab renewal projects were aligned with the long-term renewal plan while recognizing these lab intensive buildings have not been substantially renovated since the mid-1960’s when B1 and B2 were originally constructed.

The project was initially estimated in an October 2020 Class B estimate to cost less than $5 million and therefore did not require the Building & Properties Committee’s approval. Since the October estimate was prepared, the project scope has increased to include the replacement of some core mechanical infrastructure, there have been increases in the architectural and structural scope, and the construction industry has experienced pandemic related cost increases (as much as 20% increase on some project components). As a result, the total project cost has increased beyond the $5M approval threshold.

This project was competitively bid on MERX. Six (6) General Contractors submitted bids. The tenders were competitively priced, with the lowest submitted bid within ~3.7% of the next lowest bid; the third lowest bid was ~4.7% higher than low bid.

The proposed project budget ($000s) including net HST (3.41%) is:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Cost</td>
<td>$5,373</td>
</tr>
<tr>
<td>Consulting Fees</td>
<td>538</td>
</tr>
<tr>
<td>Building Permit Fees</td>
<td>4</td>
</tr>
<tr>
<td>Environmental Consulting</td>
<td>16</td>
</tr>
<tr>
<td>Contingency</td>
<td>869</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$6,800</strong></td>
</tr>
</tbody>
</table>

The project will be funded through the Faculty of Science’s operating reserves.
4. General Oversight

The committee reviewed and accepted for information:

- the capital financing commitments associated with capital projects, and advises that these commitments fall within the University of Waterloo’s Board-approved debt policy;
- the committee’s terms of reference; and,
- the work plan of the committee.

/ar

Martha George
Chair
This report is submitted following the committee’s meetings of 30 September 2021. This report is recommended for inclusion in the regular agenda.

**RECOMMENDATION**

1. **IQC Trust - Approval of Investment Managers, and Revisions to Statement of Investment Guidelines**

**Motion:** That the Board of Governors approve the following investment managers for the IQC Trust:

i. Fiera (global equity)  
ii. Mirova (global equity)  
iii. PH&N Investment Services (Canadian equity, fixed income)  
iv. RBC (global equity)  
v. TD Asset Management (fixed income, Canadian equity, US equity, international equity, ACWI equity)  
vi. Walter Scott (global equity)

And that the Board of Governors approve the revised ranges for asset classes and new target asset allocations for the IQC Trust as described below:

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Current Ranges</th>
<th>Recommended Revised Ranges</th>
<th>Target Asset Allocation (Benchmark Portfolio)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>0% – 10%</td>
<td>5% - 10%</td>
<td>7.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minimum $8m held for expendable</td>
<td></td>
</tr>
<tr>
<td>Fixed income</td>
<td>30% - 70%</td>
<td>25% - 40%</td>
<td>32.5%</td>
</tr>
<tr>
<td>Canadian Equity</td>
<td></td>
<td>20% - 30%</td>
<td>25%</td>
</tr>
<tr>
<td>Global Equity</td>
<td></td>
<td>20% - 30%</td>
<td>25%</td>
</tr>
<tr>
<td>Total Equity</td>
<td>30% - 70%</td>
<td>40% - 60%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>(Total Equity)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternatives</td>
<td>0% - 20%</td>
<td>0% - 20%</td>
<td>10%</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

And further that the Board of Governors approve amendments to the IQC Trust Statement of Investment Guidelines as described in Attachment #1 to this report.

**Rationale:** A sub-committee was formed to review the asset allocation of the IQC trust based on updated spending forecasts and the recently adopted approach for the endowment and the pension to have narrower asset mix ranges. The proposed narrower ranges will confirm the strategic asset allocation for the IQC trust and aid rebalancing while still providing sufficient flexibility to accommodate normal market movements, and the additional asset categories will provide a further diversified investment portfolio. Implementation of the recommended asset changes would decrease cash, fixed income and global equity while an increase to Canadian equity and alternatives is anticipated.

It is recommended that all investment managers approved for the endowment and the pension also be approved for IQC, to make available the common investment manager pool from those investment mandates as the investment managers are familiar to the committee and this change will provide an expanded suite of investment options for the IQC trust.
Other amendments to the Statement of Investment Guidelines include: simplified language for the risk philosophy; adjustment to portfolio return expectations to reflect capital market assumptions; inclusion of a fourth bond rating agency; an exception to the maximum quantity restrictions to exempt holdings issued by the Government of Canada and its agencies from the 10% limitations; updates to section 4.02 Performance Measurement to align with the revised asset ranges; minor text amendment to align and clarify language.

James Schlegel
Chair

/mg
Statement of Investment Guidelines

University of Waterloo
IQC Trust Fund

Effective November 1, 2018

APPROVED on this 26th day of October 2018

Replaces previous version, which was last revised, and effective on March-November 1, 2018.
Section 1—Overview

1.01 Purpose of Statement

This Statement of Investment Guidelines (the “Guidelines”) provides the framework for the investment of the assets for the University of Waterloo IQC Trust Fund (“Fund”).

These Guidelines are based on the “prudent person approach” to ensure the prudent investment and administration of the assets of the Fund.

These Guidelines also seek to establish ongoing communication between University of Waterloo (“UW”) and others engaged in the administration of the Fund.

1.02 Standard of Care

These Guidelines are based on the “prudent person approach” to ensure the prudent investment and administration of the assets of the Fund. UW shall exercise the care, diligence and skill in the administration and investment of the Fund that a person of ordinary prudence would exercise. Such persons must further use all knowledge and skill that they possess or ought to possess.

1.03 Objective of the Fund

The Institute for Quantum Computing (IQC) is a scientific research institute harnessing the quantum laws of nature to develop powerful new technologies that will transform information technology. IQC was launched in 2002 more than a decade ago as the result of the pioneering vision and personal investment by Mike Lazardis. Since IQC’s near term income requirements can be met through other funding sources, this Fund is expected to have minimal liquidity requirements before 2022.

The investment objective of the Fund is to provide reasonable market returns over the long-term to support IQC’s ongoing activities, subject to an appropriate level of risk.

As the significant donation that established the IQC Trust is not an endowment, all funds of the trust are ultimately meant to be spent.

1.04 Administration

UW is the legal owner of the Fund and is therefore responsible for all matters relating to the administration, interpretation and application of the Fund.

1.05 Background of the Fund

To provide investment income within acceptable risk tolerances, it is necessary to strive for sufficient/appropriate real investment returns on the Fund assets over medium- and long-term periods. The investment philosophy, policies and procedures adopted in this document will assist in the achievement of this goal in a prudent and effective manner.

These Guidelines have been developed taking into account factors such as:

a) The nature of the Fund’s liabilities;

b) Historical and expected capital market returns; and

c) The benefits of investment diversification.
Section 2 — Asset Mix and Diversification Policy

2.01 Risk/Return Considerations

Investment objectives for the Fund have been established with regard to the:

a) Rate of return sufficient to meet future expenses;

b) Rate of return sufficient to maintain the purchasing power of the capital;

c) The risk tolerance which is acceptable to UW; and

d) Special factors, if any, which UW considers significant.

2.02 Investment and Risk Philosophy

UW recognizes that, based on historical data, the asset classes most likely to produce the greatest return over time are also likely to exhibit the most volatility. Conversely, the asset classes likely to be the least volatile are likely to produce the lowest returns over time. Therefore, the investment philosophies and strategies must take into account both return and risk objectives.

a) Investment Philosophy

The investment management structure employs allows for a mix of active and passive management styles. Active management has been adopted for portions of the assets as it provides the opportunity to outperform common market indices over the long-term, while controlling active risk levels. Passive management has been adopted for portions of the assets as it minimizes the risk of underperformance relative to a benchmark index and is generally less expensive than active management. For information on how environmental, social and governance factors are considered in selecting investment managers, refer to Section 3.05.

Active equity fund managers are to apply the long-term value approach by investing in companies at prices below their underlying long-term values to protect capital from loss and earn income over time. The fund managers will attempt to identify financially sound companies with good potential profitability, which are selling at a discount to their intrinsic value. Appropriate measures of low prices may consist of low price-earnings, high dividend yields, and significant discounts to book value and low price to free cash flow. Downside protection is obtained by seeking a margin of safety in terms of sound financial position and a low price in relation to intrinsic value. Appropriate measures of financial integrity include debt/equity ratios, financial leverage, asset turnover, profit margin, return on equity, and interest coverage. It is anticipated that purchases will be made when economic and issue-specific conditions are less than ideal and sentiment is uncertain or negative. Conversely, it is expected that gains will be realized when issue-specific factors are positive and sentiment is buoyant. Assets of the Fund are administered and managed on a combined basis through specialist portfolios. Fund managers will be expected to generate a rate of return in the first quartile or better over a market cycle.

b) Risk Philosophy

In order to achieve its long-term investment goals, the Fund must invest in assets that have uncertain returns. However, UW attempts to reduce the overall level of risk by diversifying the asset classes and further diversifying within each individual asset class.
2.03 Portfolio Return Expectations

The annualized rate of return of the Fund must exceed the annualized rate of increase in the CPI by 350 basis points net of the associated investment management fees over rolling ten-year period. Earn a minimum rate of return, after investment expenses, of CPI + 3% over four-year moving periods. This objective is reviewed to ensure that it is realistic based on market conditions.

2.04 Expected Volatility

The volatility of the assets of the Fund is directly related to its asset mix. Since the fund managers do not have authority to make any type of leveraged investment on behalf of the Fund, the volatility of the assets of the Fund should be similar to the volatility of the Benchmark Portfolio set out in section 4.02 (Performance Measurement).

2.05 Asset Mix

At all times, the market value of the individual asset classes will be within the minimum and maximum aggregate investment limits as listed.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Minimum %</th>
<th>Maximum %</th>
<th>Benchmark Portfolio %</th>
<th>Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>5.0</td>
<td>10.0</td>
<td>7.5%(^1)</td>
<td>FTSE TMX Canada 91-Day T-Bill</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>30.025.0</td>
<td>70.040.0</td>
<td>32.5%</td>
<td>FTSE TMX Universe Bond</td>
</tr>
<tr>
<td>Total Fixed Income</td>
<td>30.025.0</td>
<td>70.040.0</td>
<td>32.5%</td>
<td></td>
</tr>
<tr>
<td>Canadian Equity</td>
<td>20%</td>
<td>30%</td>
<td>25.0%</td>
<td>S&amp;P/TSX Composite</td>
</tr>
<tr>
<td>Global Equity</td>
<td>20%</td>
<td>30%</td>
<td>25.0%</td>
<td>MSCI World ACWI (CAD)</td>
</tr>
<tr>
<td>Total Equity</td>
<td>30.040.0</td>
<td>70.060.0</td>
<td>50.0%</td>
<td></td>
</tr>
<tr>
<td>Infrastructure</td>
<td></td>
<td>5.0%</td>
<td></td>
<td>UBS-FTSE Developed Core, Infrastructure 50/50 (CAD)</td>
</tr>
<tr>
<td>Real Estate</td>
<td></td>
<td>5.0%</td>
<td></td>
<td>FTSE EPRA/NAREIT Developed (CAD)</td>
</tr>
<tr>
<td>Total Alternatives</td>
<td>0.0</td>
<td>20.0</td>
<td>10.0%</td>
<td></td>
</tr>
</tbody>
</table>

\(^1\) Minimum $8m held for expendable

For the purpose of the total asset mix described above, the fund managers’ asset class pooled funds are deemed to be 100% invested, even though these funds may contain a portion held in cash and cash equivalent instruments.

The asset mix may deviate from the above mix, within the limits prescribed in these Guidelines. The monitoring of the asset mix and rebalancing guidelines are set out in Section 5.02 (Monitoring Of Asset Mix). In order to ensure that the assets operate within the minimum and maximum ranges, UW shall review the asset mix on a quarterly basis. Rebalancing will be conducted as
2.06 Management Structure

A diversified management structure has been adopted for the Fund consisting of several managers. This structure has been adopted, as it is believed that the different investment mandates will result in increased diversification, while reducing the ‘manager risk’ effect for the Fund.

Section 3 — Permitted and Prohibited Investments

3.01 General Guidelines

The investments of the Fund must comply with the requirements and restrictions imposed by the applicable legislation.

3.02 Permitted Investments

In general, and subject to the restrictions in this section (Section 3), the investment manager may invest in any of the following asset classes and in any of the investment instruments listed.

a) Cash and Short Term Investments

Cash on hand, demand deposits, treasury bills, short-term notes and bankers’ acceptances, commercial paper, term deposits and guaranteed investment certificates having a term of less than or equal to one year.

b) Fixed Income

Bonds, debentures, or other debt instruments of corporations, Canadian Governments, Government agencies, or guaranteed by Governments, supranationals, federal real return bonds, mortgage-backed securities, mortgages, asset-backed securities, non-convertible preferred shares, term deposits, guaranteed investment certificates, insurance contracts, private placements and bonds where capital, interest or both are linked to increases in the cost-of-living (i.e. real return bonds).

c) Equities

Common shares, preferred shares, American Depository Receipts, Global Foreign Depository Receipts, rights, warrants, installment receipts, index units, income trust units (including real estate investment trusts) and securities convertible into common shares.

d) Derivatives

The pooled funds in which the Fund invests may invest directly in derivatives to create synthetic exposures, or for hedging purposes, if their objectives and strategies permit, and if the exposure to derivatives is subject to limits based on the intended use and strategies for derivatives and the risks associated with them. Derivatives may also be used to hedge currency. Derivatives may not be used for speculative trading or to create a portfolio with leverage. Investment funds that invest in derivatives must comply with all applicable statutory provisions and regulations, including the Prudent Person Rule, must be invested, and managed in accordance with regulatory derivatives best practices.

e) Pooled Funds

Investments in open-ended or closed-ended pooled funds provided that the assets of such
funds are permissible investments under these Guidelines. While these Guidelines are intended to guide the management of the assets, it is recognized that, where pooled funds are held, there may be instances where there is a conflict between these Guidelines and the investment policy of a pooled fund. In that case, the pooled fund policy shall dominate, subject to the compliance reporting procedures outlined in Section 4.03. However, the investment manager is expected to advise UW in the event of any material discrepancies between the above guidelines and the pooled fund’s own investment guidelines. In addition, the investment manager will ensure that UW has received a copy of the most recent version of the pooled fund policy and of any amendments made to the pooled fund policy.

3.03 Minimum Quality Requirements

a) Quality Standards

Within the investment restrictions for individual portfolios, all portfolios should hold a prudently diversified exposure to the intended market.

i. Subject to 3.04 (Maximum Quantity Restrictions), the minimum quality standard for individual bonds and debentures is 'BBB' or equivalent as rated by at least two Recognized Bond Rating Agencies, at the time of purchase. Where an investment in the portfolio is downgraded below a ‘BBB’ rating, the following steps will be taken:

- The investment manager will notify UW of the downgrade by telephone at the earliest possible opportunity;
- Within ten business days of the downgrade, the investment manager will advise UW in writing of the course of action taken or to be taken by the investment manager, and its rationale; and
- Immediately upon downgrade, the investment manager will place the asset on a Watch List subject to monthly review by the investment manager with UW until such time as the security matures, is sold or until it is upgraded to a level consistent with the purchase quality standards as expressed in the guidelines mentioned above.

ii. In cases in which the Recognized Bond Agencies to do not agree on the credit rating, the bond will be classified according to the methodology used by FTSE TMX, which states:

- If two agencies rate a security, use the lower of the two ratings;
- If three agencies rate a security, use the most common; or
  - If all three disagree, use the middle rating.
- If four agencies rate a security, use the middle of the three lowest ratings.

b) Rating Agencies

For the purposes of these Guidelines, the following rating agencies shall be considered to be ‘Recognized Bond Rating Agencies:’

i. Dominion Bond Rating Agency DBRS Morningstar;
ii. Standard and Poor’s; and
iii. Moody’s Investors Services; and
iv. Fitch Ratings.
3.04 Maximum Quantity Restrictions

a) Total Fund Level

UW shall not, directly or indirectly, lend or invest moneys of the Fund to or in any one person, any associated persons or any affiliated corporations if:

- 10% or more of the total market value of the Fund’s assets has already been lent or invested in total to, or in, the person, the associated persons or the affiliated corporations; or
- 10% or more of the total market value of the Fund’s assets would be lent or invested in total to, or in, the person, the associated persons or the affiliated corporations as a result of the loan or investment.
- Holdings issued by the Government of Canada and its agencies are exempt from the abovementioned 10% limitations.

UW shall not directly or indirectly, invest the moneys of the Fund in the securities of a corporation to which are attached more than 30% of the votes that may be cast to elect the directors of the corporation.

No one holding shall represent more than 10% of the market value of the Fund’s assets.

b) Fixed Income

i. Maximum 15% of the market value of the Canadian fixed income securities shall be invested in BBB bonds or debentures

ii. Maximum 5% of the market value of the Canadian fixed income securities shall be invested in bonds or debentures rated below BB

iii. Maximum 10% of the actively managed fixed income portfolio may be invested in debt denominated in US currency, including debt issued by the US Government, its agencies and instrumentalities. No other foreign currency debt will be purchased.

c) Equities

No one equity holding shall represent more than 10% of the total market value of the Fund manager’s portfolio.

3.05 Environmental, Social and Governance Factors

Consistent with its obligation to act in the best interest of the Fund, UW chooses investments and investment managers that it believes will deliver superior financial performance over the long term. In this regard, UW considers environmental, social and governance (“ESG”) factors in selecting investment managers with whom it invests the assets of the Fund as well as assets that are directly held. UW recognizes; however, that managers may consider ESG factors in different ways in assessing whether a given investment will have the best economic outcome. In order to protect and enhance the value of the Fund’s investments, when selecting investment managers or direct investments, UW considers criteria that include: the manager’s business and staff; historical performance; and the consideration of ESG factors in the investment process. As well, the proactive disclosure and analysis of ESG factors by the investment manager will be considered in the monitoring of, and ongoing decisions pertaining to, the retention of investment managers. For the purposes of this section, ESG factors refer to the environmental, social and governance factors relevant to an investment that may have a financial impact on that investment. It is accepted that the understanding of and the impact from ESG factors may change over time.
3.06 **Prior Notice Required**

The fund managers shall not make investments in asset categories other than those explicitly permitted in these Guidelines, unless UW first consents in writing. Each fund manager’s portfolio shall also comply with all requirements and constraints in any supplementary document provided by UW.

3.07 **Securities and Cash Lending**

The fund managers and custodian may participate in securities lending programs for the purpose of generating revenue.

Such loans must be secured by cash and/or readily marketable government bonds, treasury bills and/or letters of credit, discount notes, banker’s acceptances of Canadian chartered banks or high quality, liquid equities. The amount of collateral taken for securities lending should reflect OSFI standards and best practices in local markets. This market value relationship must be calculated at least daily.

Fund managers and custodians participating in securities lending will make available the terms and conditions of any securities lending program(s) with UW.

3.08 **Short Selling**

Short selling and/or pair trading are not permitted.

3.09 **Liquidity**

Investments should be liquid enough so that they can be sold in a reasonable period of time. The investments should be valued at least monthly and selected to ensure sufficient liquidity to meet transaction needs.

3.10 **Borrowing**

The Fund shall not borrow money, except to cover short-term contingency and the borrowing is for a period that does not exceed ninety days, subject to the written permission of UW.

Section 4 — Monitoring and Control

4.01 **Delegation of Responsibility**

The Board of Governors of the University of Waterloo (the “Board”) has established a Finance and Investment Committee (“F&I Committee”) to assist in the determination of UW’s overall investment philosophy, policies, objectives and strategies. UW assists in carrying out the responsibilities listed below.

a) The F&I Committee will:

   i. review this document annually;
   
   ii. review Fund performance on at least a semi-annual basis;
iii. review Fund Manager performance on at least a semi-annual basis;
iv. make recommendations on the selection of Fund Managers;
v. make recommendations on the purchase of specific investments; and
vi. provide cash flow information to the Fund Managers, if necessary;
vii. be responsible for the delegation of any responsibilities not specifically mentioned;
viii. review and approve the purchase of specific investments.

b) The Fund Managers will:
i. forward to UW quarterly reviews of investment performance, expectations of future returns on various asset classes and proposed investment strategies for the following 12 to 24 months;
ii. upon direction of the F&I Committee, invest in passive asset classes such as indexed bond funds, indexed equity funds, real-return bonds, etc.;
iii. manage asset mix and select securities within each asset class, subject to applicable legislation and the philosophy and other constraints set out in this document;
iv. forward to UW quarterly reports describing their ESG analysis and approach;
v. advise UW immediately of any changes in its senior investment personnel and/or significant changes in the size or mix of assets managed;
vi. comply with all relevant laws concerning the investment of the Fund; and
vii. complete and deliver a compliance report to the F&I Committee each quarter. The compliance report will indicate whether or not the Fund Manager was in compliance with these Guidelines during the quarter. In the event that the Fund Manager is not in compliance with this Statement, the Fund Manager is required to advise UW immediately, detail the nature of the non-compliance and recommend the appropriate course of action to remedy the situation.
viii. comply, at all times and in all respects, with the Code of Ethics and Standards of Professional Conduct as promulgated by the CFA Institute.
ix. manage the assets with the care, diligence and skill that an investment manager of ordinary prudence would use in dealing with the Fund’s assets.
x. use all relevant knowledge and skill that they possess or ought to possess as a prudent investment manager.

c) The Custodian/Trustee will:
i. fulfill the regular duties required by law of a Custodian/Trustee and perform the specific duties required of the Custodian/Trustee pursuant to agreements entered into from time to time with UW; and
ii. provide UW with monthly portfolio printouts of all assets of the Fund and transactions during the period.

4.02 Performance Measurement
For purposes of evaluating the performance of the Fund and the fund managers, all rates of returns are measured over rolling four-year periods. Return objectives are net of fees and include realized and unrealized capital gains or losses plus income from all sources.

(a) **Total Fund**

Investment weightings and results for the Fund are to be tested regularly against a long-term Benchmark Portfolio comprising:

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTSE TMX Canada 91-Day T-Bill</td>
<td>0.075</td>
</tr>
<tr>
<td>FTSE TMX Universe Bond</td>
<td>67.0325</td>
</tr>
<tr>
<td>S&amp;P/TSX Composite</td>
<td>0.025</td>
</tr>
<tr>
<td>MSCI World-ACWI (CAD)</td>
<td>23.025</td>
</tr>
<tr>
<td>UBS-FTSE Developed Core Infrastructure 50/50 (CAD)</td>
<td>0.05</td>
</tr>
<tr>
<td>FTSE EPRA/NAREIT Developed (CAD)</td>
<td>0.05</td>
</tr>
</tbody>
</table>

(b) **Investment Manager Mandates**

Fund managers are subject to the following objectives on a gross of fees basis and over rolling four-year periods:

<table>
<thead>
<tr>
<th>Investment Manager and Mandate</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indexed Universe Bonds</td>
<td>Tracking error within +/- 6 basis points of index return</td>
</tr>
<tr>
<td>Canadian Fixed Income</td>
<td>Index + 50 basis points</td>
</tr>
<tr>
<td>Active Short Term Corporate Bond</td>
<td>Index + 50 basis points</td>
</tr>
<tr>
<td><strong>Active</strong> Canadian Equity</td>
<td>Index + 100 basis points</td>
</tr>
<tr>
<td><strong>Active</strong> Global Equity</td>
<td>Index + 200 basis points</td>
</tr>
<tr>
<td><strong>Passive</strong> Canadian Equity</td>
<td>Tracking error within +/- 6 basis points of index return</td>
</tr>
<tr>
<td>Passive US Equity</td>
<td>Tracking error within +/- 8 basis points of index return</td>
</tr>
<tr>
<td>Passive Global Equity</td>
<td>Tracking error within +/- 20 basis points of index return</td>
</tr>
</tbody>
</table>

(c) **Qualitative Monitoring**

In addition to performance criteria, the following qualitative factors will also be monitored and evaluated:

i. Stability of the investment firm (personnel, assets under administration, operational capabilities, etc.);

ii. Investment objective and portfolio composition;

iii. Changes in the investment philosophy used in the investment fund;

iv. Consistency of style or approach;

v. Adherence to investment policy statement; and
4.03 Compliance Reporting by Investment Manager

The investment manager is required to complete and deliver a compliance report to UW each quarter. The compliance report will indicate whether or not the investment manager was in compliance with these Guidelines, including its ESG requirements, during the quarter.

In the event that an investment manager is not in compliance with these Guidelines, the investment manager is required to advise UW immediately, detail the nature of the non-compliance and recommend an appropriate course of action to remedy the situation.

The Fund invests in pooled funds with separate investment policies. Should a conflict arise between those investment policies and these Guidelines, the investment manager’s pooled fund policy shall dominate. However, the investment manager is required to advise UW immediately, detail the nature of the conflict and recommend an appropriate course of action to remedy the situation.

Section 5 — Administration

5.01 Conflicts of Interest

a) Responsibilities

This standard, which is consistent with UW Policy 69 (Conflict of Interest) applies to UW and the members of UW, as well as to all agents employed by them, in the execution of their responsibilities (the “Affected Persons”).

An “agent” is defined to mean a company, organization, association or individual, as well as its employees who are retained by UW to provide specific services with respect to the investment, administration and management of the assets of the Fund.

b) Disclosure

In the execution of their duties, the Affected Persons shall disclose any material conflict of interest relating to them, or any material ownership of securities, which could impair their ability to render unbiased advice, or to make unbiased decisions, affecting the administration of the Fund assets.

Further, it is expected that no Affected Person shall make any personal financial gain (direct or indirect) because of his or her fiduciary position. However, normal and reasonable fees and expenses incurred in the discharge of their responsibilities are permitted if documented and approved by UW.

No Affected Person shall accept a gift or gratuity or other personal favour, other than one of nominal value, from a person with whom they deal with in the course of performance of his or her duties and responsibilities for the Fund.

It is incumbent on any Affected Person who believes that he or she may have a conflict of interest, or who is aware of any conflict of interest, to disclose full details of the situation to the attention of UW immediately. UW, in turn, will decide what action is appropriate under the circumstances but, at a minimum, will table the matter at the next regular meeting of the F&I Committee.

No Affected Person who has or is required to make a disclosure as contemplated in this
Policy shall participate in any discussion, decision or vote relating to any proposed investment or transaction in respect of which he or she has made or is required to make disclosure.

5.02 Monitoring of Asset Mix

In order to ensure that the assets of the Fund operate within the minimum and maximum ranges, as prescribed in the Guidelines in Section 2.05 (Asset Mix), UW shall review the asset mix at least quarterly. Rebalancing will be conducted as required.

5.03 Selecting Fund Managers

In the event that a new investment manager must be selected or additional investment manager(s) added, UW will undertake an investment manager search. The criteria used for selecting an Investment Manager will be consistent with the investment and risk philosophy set out in Sections 2.02 (Investment and Risk Philosophy) and 3.05 (Environmental, Social and Governance Factors).

5.04 Monitoring Manager Performance

At least quarterly, the F&I Committee and UW will monitor and review:

a) Each investment manager’s staff turnover, consistency of style and record of service;

b) Each investment manager’s current economic outlook and investment strategies (including ESG approach);

c) Each investment manager’s compliance with these Guidelines; and

d) Investment performance of the assets of the Fund in relation to the rate of return expectations outlined in these Guidelines.

5.05 Dismissal of an Investment Manager

Reasons for considering the termination of the services of an investment manager include, but are not limited to, the following factors:

a) Performance results which are below the stated performance benchmarks;

b) Changes in the overall structure of the Fund’s assets such that the investment manager’s services are no longer required;

c) Change in personnel, firm structure or investment philosophy which might adversely affect the potential return and/or risk level of the portfolio; and/or

d) Failure to adhere to these Guidelines.

The failure to achieve the goals stated in Section 4.02 (Performance Measurement) over a period of four consecutive years will require a reassessment of such goals and/or the appointment of an alternative investment manager.

5.06 Voting Rights

The voting rights acquired through the investments held by the Fund are delegated to the fund managers of the securities. Fund managers are expected to exercise all voting rights related to investments held by the Fund in the interests of UW.

5.07 Valuation of Investments Not Regularly Traded
The following principles will apply for the valuation of investments that are not traded regularly:

a) **Equities**
   Average of bid-and-ask prices from two major investment dealers, at least once every month.

b) **Fixed Income**
   Same as for equities.

### Section 6 — General Provisions

#### 6.01 Related Party Transactions

UW, on behalf of the Fund, may not enter into a transaction with a related party unless:

a) The transaction is made for the operation or administration of the Fund under terms and conditions that are not less favourable to the Fund than market terms and conditions and such transaction does not involve the making of loans to, or investments in, the related party; or

b) The combined value of all transactions with the same related party is nominal or the transaction(s) is immaterial to the Fund.

For the purposes of this section, only the market value of the combined assets of the Fund shall be used as the criteria to determine whether a transaction is nominal or immaterial to the Fund. Transactions less than 0.5% of the combined market value of the assets of the Fund are considered nominal.

In addition, the prohibition to entering into transactions with a related party does not apply to investments:

a) In securities issued or fully guaranteed by the Government of Canada, the government of a province, or an agency of either one of them;

b) In a fund composed of mortgage-backed securities that are fully guaranteed by the Government of Canada, the government of a province, or an agency of either one of them;

c) In a fund that replicates the composition of a widely recognized index of a broad class of securities traded at a marketplace; and

d) That involve the purchase of a contract or agreement in respect of which the return is based on performance of a widely recognized index of a broad class of securities traded at a marketplace.

A “related party” in respect of the Fund means:

a) A person who is the administrator of the Fund including any officer, director or employee of the administrator. It also includes the Managers and their employees, a union representing employees of the employer, a spouse or child of the persons named previously, or a corporation that is directly or indirectly controlled by the persons named previously, among others.

b) An officer, director or employee of one of the administrators of the Fund;

c) A person responsible for holding or investing the assets of the Fund, or any officer, director or employee thereof;

d) An affiliate of UW;
6.02 Policy Review

The F&I Committee shall review and either confirm or amend these Guidelines at least annually. UW will also provide any amended copy of these Guidelines to the investment manager.
Appendix A — Investment Manager Compliance Letter

To be completed by fund managers each quarter.

UNIVERSITY OF WATERLOO

____________________, 201_

This is to certify that I/we have adhered to the guidelines contained in the November 2018-2021 version of the “Investment Guidelines” for the University of Waterloo IQC Trust Fund approved by the Board of Governors of the University of Waterloo.

Signed ______________________

On behalf of ______________________

Date ______________________