

**University of Waterloo
BOARD OF GOVERNORS
Tuesday 7 June 2022**

Meeting

1:30 p.m.

In-person (NH 3407) and Teams Videoconference

Please convey regrets to Diana Goncalves at d3goncalves@uwaterloo.ca.

	<u>MEETING</u>	Page	Action
	OPEN SESSION		
1:30	1. Conflict of Interest	Oral	Declaration
	2. Remarks from the Chair	Oral	Information
	3. Agenda/Additional Agenda Items	Oral	Decision
1:40	<u>Consent Agenda</u> Motion: To approve or receive for information by consent items 4-8 below.		
	4. Minutes of the 5 April 2022 Meeting	3	Decision
	5. Report of the President		
	a. Sabbatical and Administrative Leaves, and Administrative Appointments	11	Decision/Information
	6. Report of the Vice-President, Administration & Finance		
	a. Incidental Fee Changes	23	Decision
	7. Reports from Committees		
	a. Building & Properties Committee	27	Information
	b. Finance & Investment Committee	29	Information
	c. Governance Committee	31	Information
	8. Report from the Vice-President, Research and International		
	a. Institute of Quantum Computing Annual Report to Ministry of ISED and Corporate Plan	33	Decision
	<u>Regular Agenda</u>		
1:45	9. Business Arising from the Minutes		Input
1:50	10. Report of the President		
	a. General Update	Oral	Information
	b. PART Report	Oral	Information
	c. Strategic Plan Update: Advancing Research for Global Impact	35	Information
	10 MINUTE BREAK		

		Page	Action
3:00	11. Report from the Vice-President, Advancement	43	Information
3:15	12. Reports from Committees		
	a. Joint Finance & Investment Committee and Pension & Benefits Committee	51	Information
	b. Pension & Benefits Committee	61	Decision
3:30	13. Other Business		Input
	CONFIDENTIAL SESSION		
3:35	14. Conflict of Interest	Oral	Declaration
3:40	<u>Consent Agenda</u> Motion: To approve by consent items 15-16 below.		
	15. Minutes		Decision
	a. 5 April 2022 Meeting	7	
	b. 17 May 2022 Extraordinary Meeting	65	
	16. Report of the President		
	a. New Appointments with Tenure	67	Decision
	<u>Regular Agenda</u>		
3:45	17. Business Arising from the Minutes		Input
3:50	18. Report of the President	Oral	Information
4:00	19. Donor List – FY21 Gifts and Pledges \$250K	69	Information
4:10	20. Other Business		Input
	IN-CAMERA SESSION		
4:15	21. Conflict of Interest	Oral	Declaration
4:20	22. Minutes of the 5 April 2022 Meeting	9	Decision
4:25	23. Business Arising from the Minutes		Input
4:30	24. Reflections		Discussion
4:50	25. Other Business		Input
4:55	26. Adjournment	Oral	Discussion

KJJ/dg
31 May 2022

Karen Jack
University Secretary

University of Waterloo
BOARD OF GOVERNORS
Minutes of the Tuesday 5 April 2022 Meeting

Present: Peter Barr, Anne Bordeleau, Carol Cressman, Lori Curtis, Catherine Dong, Benjamin Easton, Paul Fieguth, Cindy Forbes (chair), Martha George, Vivek Goel, Susan Grant, Nancy Heide, Russell Hiscock, Andre Hladio, Karen Jack (secretary), Dave Jaworsky, Achim Kempf, Sheryl Kennedy, John Saabas, Naima Samuel, James Schlegel, Matthew Schwarze, Kevin Strain, Berry Vrbanovic, Dan Weber, Stanley Woo, En-Hui Yang

Guests: Jean Andrey, Sandra Banks, Jean Becker, Bruce Campbell, Aldo Caputo, Jeff Casello, Mary Anne Chan, Sam Charles, Ingrid Cowan, Charmaine Dean, Nenone Donaldson, Jenny Flagler-George, Anne Galang, Mark Giesbrecht, Diana Goncalves, Mike Grivicic, Sarah Hadley, Nick Hiuser, Michelle Hollis, Lee Hornberger, Ruth Huard, Dennis Huber, Celine Isimbi, Andrea Kelman, Jennifer Kieffer, Robert Lemieux, Erik Liang, Lili Liu, Peter Lowe, Nick Manning, Jennifer McCorriston, Kelly McManus, Norah McRae, Beth Namachchivaya, Cathy Newell Kelly, Fayaz Noormohamed, Douglas Peers, Leanne Perreault, Alice Raynard, Chris Read, Ian Rowlands, James Rush, Karl Schuett, Savanah Seaton, Daniela Seskar-Hencic, Marlee Spafford, Allan Starr, Jeremy Steffler, Kerry Stryker, Sherri Sutherland, Brandon Sweet, Christopher Taylor, Evan Taylor, Mathew Thijssen, Sean Thomas, Nickola Voegelin, Mary Wells, Melanie Will

Regrets: Nyla Ahmad, Michael Ashmore, Dominic Barton, Michael Eubanks, Tony Giovinazzo, Lisa Mak, Karen Redman, Jagdeep Singh Bachher

OPEN SESSION

1. CONFLICT OF INTEREST

Governors were asked to declare any conflicts they may have in relation to the items on the agenda. Kevin Strain spoke to his role at Sun Life and advised governors that the company is the University's group life coverage provider. He advised that he therefore will not participate in decisions relating to this coverage.

2. REMARKS FROM THE CHAIR

The chair welcomed governors to the meeting and acknowledged that some are participating remotely, and some in person. She invited those on Teams to use the raise hand function to indicate that they wish to participate. She informed governors about two errors that will be corrected in the 1 February minutes (under #3, "Carried unanimously" will be added, and, the incidental fee changes and residence fee changes at #6 were both for approval and so the record will be corrected to reflect that they were approved). After informing members about the President's Golf Tournament being held on 6 June, she acknowledged those Governors' attending their last meeting, community-at-large members: Martha George and James Schlegel; faculty members: Paul Fieguth, Stanley Woo, and En-Hui Yang; undergraduate students: Benjamin Easton and Catherine Dong. A round of applause followed for each individual named. She closed by offering good luck to all students heading into final examinations.

3. AGENDA/ADDITIONAL AGENDA ITEMS

The Board heard a motion to approve the agenda as distributed.

Barr and Easton. Carried unanimously.

Consent Agenda

The Board heard a motion to approve and/or receive for information by consent items 4-8 as below.

Woo and Easton.

4. MINUTES OF THE 1 FEBRUARY 2022 MEETING

The Board approved the minutes of the meeting as distributed.

5. REPORT OF THE PRESIDENT

The Board approved the sabbatical and administrative leaves and cancellations and received the remainder of the report for information.

6. REPORT OF THE VICE-PRESIDENT, ACADEMIC & PROVOST

The Board received the report regarding the University Professor Designation for information.

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

The Board approved the amendments to the Mathematics Endowment Fund Constitution.

8. REPORTS FROM COMMITTEES

Audit & Risk Committee

The Board heard a motion to delegate its authority to approve the University's audited financial statements for the fiscal year ended 30 April 2022 to the Board Executive Committee. The remaining items in the report were received for information.

Finance & Investment Committee

The Board received the report for information.

Governance Committee

The Board received the report for information.

Pension & Benefits Committee

The Board received the report for information.

The chair offered congratulations to Drs. Hirdes and Mann on behalf of the Board for their designations as University Professors. The question was called and the motion carried unanimously.

Regular Agenda

9. BUSINESS ARISING FROM THE MINUTES

There was no business arising from the minutes.

10. REPORT OF THE PRESIDENT

The chair provided a wide-ranging update to the Board, including: condolences on the passing of the University's fourth president, James Downey and that the University is working with his family on a future formal recognition; the recent achievement of the University being in the top 50, and #1 in Canada, in a ranking for engineering universities by *US News and World Report*; the [2022 Global Impact Report](#); some observations about global and national events impacting the world and how the University is responding (e.g., Russian invasion of Ukraine, and the recent meeting between the Pope and Indigenous leaders, elders, and residential school survivors); the continued response to the pandemic; the recent announcement by the province that the tuition freeze will remain in place; a brief overview of a recent discussion at the Toronto Board of Trade about the future workforce; an update on the search for the next Vice-President, Finance and Administration and the review of the Vice-President, Academic & Provost.

The president invited Christopher Taylor, associate vice-president, equity, diversity, inclusion and anti-racism to provide an update on the Strengthening Sustainable and Diverse Communities theme of the Strategic Plan. In turn, governors heard from governor Catherine Dong about the [Wellness](#)

[Collaborative](#) from a student's point of view (including details about student wellness at the University, the Wellness Collaborative's efforts; her positive experience on the committee, and her sense of what students need); Celine Isimbi who offered perspectives on navigating the University as a Black student (including some biographical information, her experiences, and what she would like to see for the future of Blackness at Waterloo); and Savannah Seaton (who spoke about her family and its history, her personal transformational growth, her undergraduate experience at another institution, her professional background, her experience as a graduate student at Waterloo, and the journey forward).

Following introductions of Marlee Spafford, special advisor to the provost, student experience and Jennifer McCorriston, associate director, health promotion in campus wellness, members engaged the speakers and guests. In discussion: the incremental positive changes made as a result of the [report of the President's Advisory Committee on Student Mental Health](#); that the transition program is being developed locally initially; excitement for the positive path forward for the University in being a welcoming and compassionate place; agreement that today's speakers were moving and compelling; the need to keep empathy and compassion top of mind; expressions of thanks to the Board for engaging on this important matter, and in turn, thanks from governors to participants for their personal stories; an observation that a focus on wellness is important both in and outside of the classroom.

11. REPORTS FROM COMMITTEES

a. Audit & Risk Committee

Hiscock introduced Bruce Campbell, chief information officer, who provided governors with a cybersecurity update. Walking members through his presentation, Campbell provided an overview of: cyber attacks (why, who, how, the impact); what's being done; recent investments in technology and people; training and awareness; internal and external partnerships; policies and procedures; the IT landscape at Waterloo; approaches for administration vs research; recent developments; ways to reduce residual risks. There were no questions.

b. Finance & Investment Committee

Following introductory comments from Schlegel, the Board heard a motion to approve the 2022-23 Operating Budget, as distributed with the agenda.

Schlegel and Barr.

Schlegel invited James Rush to present to the Board the 2022-23 Operating Budget, which he did. Members heard: the operating budget's principle considerations; challenges in the coming year ahead (constrained revenue, and expense growth); approaches being taken (1% budget reduction, and messaging re: year-end spending constraint); a 2021-22 update and income and expenses in the 2022-23 opening budget; an overview of some strategic plan investments. In discussion: the difficult decision on the budget reduction and a sense that it can be managed well across the institution; that the University is at its upper boundary for international tuition fees; multi-year planning.

The question was called and the motion carried unanimously.

c. Joint Report Finance & Investment Committee and Pension & Benefits Committee

Schlegel provided an overview of the report, and some history of the responsible investment discussions at the University. He offered his thanks on behalf of the two committees to Kennedy and the Pension Investment Committee (PIC) for their efforts to consult and develop the proposed policy and mandates. Kennedy followed with some commentary on the PIC's work. The Board heard a motion to approve the Responsible Investment Policy as distributed with the agenda.

Kennedy and Schlegel.

In response to a question, members heard: scope 3 emissions will be looked at over time, and as data becomes available; a reminder that the Statement of Investment Policies and Procedures and the registered pension Fund Implementation Procedures will be reviewed annually; how governance has been considered in Environmental, Social and Governance conversations.

Barr spoke to the part of the report relating to the investment managers and offered some comments on the recent work done and ongoing conversations by the Pension & Benefits Committee about the managers and their mandates. The Board heard a motion to approve IFM Investors as an investment manager to provide an open-ended infrastructure fund (IFM Global Infrastructure Fund), and that the Board of Governors approve Brookfield Renewable Partners as an investment manager with its listed fund (NYSE: BEP; TSX: BEP.UN) for the registered pension plan, the university endowment fund, and the IQC trust fund; and, that the Board of Governors approve the sale of one half of Brookfield Infrastructure Partners (TSX:BIP.UN, approximately \$66 million or ~3% of registered pension plan assets) with the proceeds directed to the purchase of Brookfield Renewable Partners (TSX:BEP.UN); and, that the Board of Governors approve the investment of \$88 million in the IFM Global Infrastructure Fund (~4% of registered pension plan assets); and further that the distributions of each fund (annual cash yield ranging from 3.5-6%) be reinvested into the originating funds going forward.

Kennedy and Schlegel. Carried unanimously.

12. OTHER BUSINESS

There was no other business.

The Board convened in confidential session.

18 April 2022

Karen Jack
University Secretary

CONFIDENTIAL SESSION

The confidential session minutes have been removed.

18 April 2022

Karen Jack
University Secretary

IN-CAMERA SESSION

The *in-camera* session minutes have been removed.

18 April 2022

Karen Jack
University Secretary

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The report on Sabbatical and Other Leaves and the report on Administrative Appointments come to the Board of Governors at each meeting as leave requests and appointments occur throughout the year. The report on Sabbatical and Administrative Leaves requires the approval of the Board of Governors whereas the report on Administrative Appointments comes to the Board for information.

FOR APPROVAL

SABBATICAL AND OTHER LEAVES

The University of Waterloo Policy 3 – Sabbatical and Other Leaves for Faculty Members sets out the purpose of leaves for faculty members as well as the requirements/responsibilities of faculty who are granted such 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.

It should be clearly understood that 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. Normally, the University will not consider granting two leaves to a faculty member such that one immediately follows the other.

Application for leave must be made in writing to the Department Chair and approved by the Department Chair, Faculty Dean and the Vice-President, Academic & Provost based on their consistency with the criteria laid out in Policy 3. Application for sabbatical leave should include the faculty member's plans for scholarly activities while on leave. After the above processes and approvals are in place, sabbatical and special leaves further require the approval of the Board of Governors.

Faculty members are eligible to apply for a regular sabbatical leave (either a half-year leave at full salary or a full-year leave at 85% salary) to be taken after six years, full-time (including 12 terms teaching) in the professorial ranks. An "early sabbatical" leave may be awarded after a minimum of three years, full-time (including six terms teaching) in the professorial ranks. Early sabbaticals are half-year leaves at 85% salary and consume credit for three years of service.

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.

Report Summary

Sabbatical Leaves: 54
Sabbatical Cancellations: 1
Administrative Leaves: 3

Sabbatical

Faculty of Arts

Browne, Dillon, Psychology, January 1, 2023 to June 30, 2023 at 100% salary

My research area is child and family clinical psychology. I will spend the time preparing a book on clinical and research methods with families. I will also collaborate on a project identifying social determinants of health in children involved with family protection services in Australia, resulting in a peer reviewed publication.

Cooper, Andrew, Political Science, September 1, 2022 to February 28, 2023 at 85% salary

We increasingly live in a world where established forms of organization are challenged by dynamics of informality. This shift is highlighted by the ascendancy of high-profile informal institutions different from the older post-1945 pillars of the international architecture. The goal of this research is to reframe informal institutions as a highly salient but problematically analyzed component of international politics.

Doucet, Mathieu, Philosophy, July 1, 2022 to December 31, 2022 at 100% salary

My current research project explores addiction and the ethics of drug policy, with a focus on autonomy and harm reduction policies. I intend to complete a manuscript for a book on that topic and secure a contract to publish it.

Douglas, Alan, Accounting and Finance, September 1, 2022 to August 31, 2023 at 100% salary

My plans include: 1) complete existing research projects; 2) respond to comments of editors and referees for currently submitted papers; 3) participate in academic conferences; and 4) develop a new project with Sean Cleary at Queen's. While my primary objective is research publications, a secondary objective is to build contacts at the Institute for Sustainable Finance (Professor Cleary is the Director).

Faulkner, Andrew, Classical Studies, July 1, 2022 to December 31, 2022 at 100% salary

I will continue my SSHRC funded research on late antique Greek poetry. I will use my leave to complete the majority of research for a monograph on the poetic version of the martyrdom narrative of Saints Justina and Cyprian by the 5th-century empress Eudocia.

Fortin, Steve, Accounting and Finance, September 1, 2022 to December 31, 2023 at 100% salary

I will transition back into a Research and Teaching program following my four year service as Director of the School of Accounting and Finance. I will work in developing my program of research in the field of Financial Accounting and Assurance, leading to a SSHRC grant application in the Fall of 2023. I will also start new projects with colleagues at and outside of Waterloo.

Hayes, Geoffrey, History, September 1, 2022 to August 31, 2023 at 100% salary

My research explores morale within the Canadian Army between 1939 and 1945. Facing a morale 'crisis' by 1942, army officials responded with suggestion boxes and films, later detailed surveys and social workers. But soldiers' letters and courts martial reveal that many Canadian men had trouble reconciling their military and civilian lives. This research demonstrates that questions about the mental health of Canadian soldiers and their dependents have long been asked, but little answered.

Jiang, Xin, Accounting and Finance, January 1, 2023 to June 30, 2023 at 100% salary

I am planning to visit Shanghai University of Finance and Economics (SUFU) at Shanghai, China. In addition to giving research talks, during my visit at SUFU, I will continue working on the XBRL data quality projects as listed on my CV and push it through the publication process.

Lawson, Kate, English Language and Literature, July 1, 2022 to December 31, 2022 at 100% salary

I plan to complete: 1) a journal article on the shared space, work, and writing practices of the three Bronte sisters in order to contribute to a materialist theory of literary influence; and 2) a book chapter on "Victorian" as a form of self-critique in the work of L. M. Montgomery (for an essay collection).

Mehlenbacher, Brad, English Language and Literature, September 1, 2022 to August 31, 2023 at 85% salary

My research is in rhetoric and communication. I plan to focus on a book project related to bogus expert appeals as well as the completion of several in-progress articles. I will also complete a visiting role at the University of Copenhagen, provided travel is safe and allowed.

Phillips, Blake, Accounting and Finance, September 1, 2022 to August 31, 2023 at 100% salary

I will re-invigorate my research agenda after a period of very heavy administrative service. I anticipate continuing research in the area of retail investor asset allocation choices focused on the ESG (Environmental, Social and Corporate Governance) space.

Ravenhill, John, Political Science, September 1, 2023 to November 30, 2023 at 100% salary and January 1, 2024 to June 30, 2024 at 100% salary

I will work primarily on a new research project on the rise and decline of economic nationalism in Australia. This will be part of a project conducted with a colleague that compares the experiences of Australia and Canada, which we anticipate will lead to a book manuscript.

Schulenberg, Jennifer, Sociology and Legal Studies, July 1, 2022 to December 31, 2022 at 85% salary

Responding to demands for police reform, this project evaluates the OPP School Resource Officer Program through an equity, anti-oppression, and anti-racism lens. Data from surveys, Town Halls, interviews, Gaataa'aabings, ride alongs, and crime trends will inform recommendations on police interactions with youth and actionable steps to address inequities, systemic racism, and institutional discrimination youth experience when interacting with the police.

Turri, John, Philosophy, September 1, 2022 to August 31, 2023 at 85% salary

I plan to conduct research in philosophy and cognitive science by completing four research articles and launching several other projects.

Faculty of Engineering

Agnew, Gordon, Electrical and Computer Engineering, September 1, 2022 to February 28, 2023 at

85% salary

I am continuing my research into post quantum secure cryptographic systems. I will be working with Peer Ledger to file patents on the IP and continue with commercialization.

Dimitrov, Stanko, Management Sciences, May 1, 2023 to April 30, 2024 at 85% salary

I will continue to focus on growing my expertise in business data analytics and sustainability. This will involve stints in various public and private sector organizations as well as research visits at universities throughout the world. My work on sustainability focuses on analytical models while my work on business data analytics uses statistics, econometrics, and optimization to address practical problems.

Elkamel, Ali, Chemical Engineering, May 1, 2023 to April 30, 2024 at 85% salary

I will finalize a book on optimal product design and start writing another book entitled “Carbon Capture, Utilization, Storage: A Concept Towards More Sustainable Cities”. I plan to visit research laboratories in Canada, United States, Turkey, and the Middle East to start new collaborations in sustainable process systems engineering. I also plan to update my lecture notes and develop new ones.

Hutton, Jane Mah, Architecture, September 1, 2022 to August 31, 2023 at 85% salary

I will focus on two projects: 1) a study of the current and potential role of the landscaping industry in climate change mitigation work, and 2) a material history of construction and demolition waste flows in the Great Lakes Region (Canada and US).

Jayaram, Sheshakamal, Electrical and Computer Engineering, September 1, 2022 to August 31, 2023 at 100% salary

My research focuses on Power Engineering with specialization in High Voltage Engineering and Applied Electrostatics. I will be applying for research grants, completing the unfinished research projects, building my research team, in particular recruiting graduate students, upgrading research facilities, and establishing research collaborations with industry and other institutions.

Kim, Eugene, Civil and Environmental Engineering, September 1, 2022 to February 28, 2023 at 100% salary

My research focuses on the use of shape memory alloys and machine learning for resilient structural design. I plan to remain on campus and publish at least three research papers to strengthen my tenure application as well as prepare major research proposals including the NSERC Discovery Grant and the CFI JELF.

Li, Xianguo, Mechanical and Mechatronics Engineering, September 1, 2022 to February 28, 2023 at 100% salary

My main goal is to edit a research monograph on fuel cell technology with my collaborators; to write a number of research articles based on numerous studies that my students and I have conducted over the last many years and to spend time with collaborators in my research to develop large research proposals and funding initiatives.

McMinn, John, Architecture, September 1, 2022 to August 31, 2023 at 100% salary

I plan to: 1) complete a book covering the contextual and theoretical framing of the work of my architecture practice over a 20 year period; 2) complete the documentation of the Grand Studio Design Build Program; 3) continue with two ongoing research projects on alternative housing solutions; and 4) carry on with ongoing design research projects at my Toronto Architectural practice

Mitran, Patrick, Electrical and Computer Engineering, September 1, 2022 to August 31, 2023 at

85% salary

I plan to explore new areas of signal processing and wireless communications related to my research on 5G and beyond 5G wireless technology. I will also start new collaborations and revise publications under review.

Montesano, John, Mechanical and Mechatronics Engineering, September 1, 2022 to August 31, 2023 at 94% salary

My area of research is mechanics of composite materials and structures which encompasses both numerical and experimental mechanics. I plan to work on several ongoing research projects, write several funding proposals, attend conferences and workshops, visit collaborator institutes, start new research projects and contracts. I plan for the publication of 15 journal papers, establish new international collaborations, and establish new industry partners.

Przbylski, Maya, Architecture, September 1, 2022 to February 28, 2023 at 85% salary

My primary goal is to resume research on my project regarding architects' role in shaping the Smart City. I'll be preparing for at least one conference (April 2023) and initiating work on the final component of an ongoing SSHRC IDG grant (extended from 2018 to 2024) among other work.

Wasilewski, Zbigniew, Electrical and Computer Engineering, January 1, 2024 to December 31, 2024 at 100% salary

I will concentrate on advancing research projects in compound semiconductor-based quantum structures for THz and Infrared photonics and quantum devices for quantum information processing. Also, I plan on the preparation of a new graduate course (NANO 607), including a script for students. This will likely be compatible with inverted classes and make it easier to take up by other nano faculty if needed.

Wilson, Chris, Electrical and Computer Engineering, January 1, 2024 to December 31, 2024 at 99.6% salary

I will visit the world-renowned Quantronics group at CEA-Saclay near Paris, France. They have been a leading group in superconducting quantum electronics for over 30 years, and were one of the founders of superconducting quantum computing as a researcher discipline. The goal is to build and strengthen international research collaborations, with a high expectation of publications arising from the visit.

Yeum, Chul Min, Civil and Environmental Engineering, January 1, 2023 to June 30, 2023 at 100% salary

I plan to further my research into the area of computer vision and machine learning/vision applications in the realm of infrastructure inspections and management. I plan to spend time at Waterloo to conduct research projects that I currently hold and prepare for and strengthen my tenure file.

Zahedi, Seyed Majid, Electrical and Computer Engineering, July 1, 2022 to December 31, 2022 at 100% salary

My research focuses on theoretical aspects of computer systems and computer architecture. I am planning a six month pre-tenure sabbatical at AMD. I will be working on resource management techniques for graphical processing units (GPUs) and multiprocessors. The goal is to collaborate with AMD researchers to publish a few papers.

Faculty of Environment

Parker, Dawn, Planning, September 1, 2022 to August 31, 2023 at 85% salary

I research residential housing markets, including housing supply and demand, market interactions, housing and transportation interactions, and the environmental impacts of residential yard management. I will draft an edited volume that synthesizes 12 years of research in my Urban Growth and Change research group around impacts of the light rail transit on residential housing in Kitchener-Waterloo.

Faculty of Health

Callaghan, Jack, Kinesiology and Health Sciences, September 1, 2022 to February 28, 2023 at 100% salary

Pursuit of independent and collaborative research activities including short research trips to laboratories of collaborators in Canada and the United States of America for the purposes of acquisition of new skills, and collaborative research projects. Preparation of research grants for new initiatives in musculoskeletal injury prevention research. Preparation of manuscripts and reports from ongoing research projects for publication.

Grimwood, Bryan, Recreation and Leisure Studies, September 1, 2022 to August 31, 2023 at 94.7% salary

My research investigates moral and political dimensions of human-environment relationships to advance understandings of justice and sustainability in tourism, leisure, and other cultural contexts. I will focus on current SSHRC funded projects (i.e., field research, partnership development), preparing publications, and grant writing. Outcomes will enhance scholarly and community-based understandings of tourism landscapes.

Misener, Katie, Recreation and Leisure Studies, September 1, 2022 to August 31, 2023 at 85% salary

My research explores the management, capacity, and social impact of community sport organizations. My sabbatical plan includes completion of several manuscripts from my SSHRC-funded projects as well as the conceptual preparation and advancement of new scholarly endeavors including Publications & Research Funding, Data Collection and Analysis, Project Planning and Partnership Development, and Conference Presentations & Knowledge Mobilization.

Neufeld, Hannah, Public Health Sciences, September 1, 2022 to February 28, 2023 at 100% salary
As part of my CRC research program in the area of Indigenous health wellbeing and food environments, I am planning to spend the six months focused on COVID delayed plans for community engagement along with exploring future global research partnerships in Australia and Indonesia.

Faculty of Mathematics

Ben-David, Shalev, Computer Science, November 1, 2022 to April 30, 2023 at 100% salary
My research is on computational complexity and quantum computing. My plan is to go to Seattle, Washington, USA to collaborate with researchers. The expected outcomes include more research publications that further our understanding of quantum complexity theory and closer ties to researchers abroad.

Forrest, Brian, Pure Mathematics, September 1, 2022 to August 31, 2023 at 100% salary
My research area is Abstract Harmonic Analysis. I will investigate problems concerning the relationship between locally compact groups and various Banach algebra associated with these

groups. I plan to collaborate with colleagues at the University of Winnipeg and the University of Alberta.

Ghodsi, Ali, Statistics and Actuarial Science, July 1, 2022 to December 31, 2022 at 85% salary
My area of research is machine learning. I plan to visit a couple of researchers and collaborators at Vector Institute (Toronto) and Mila (Montreal) and the University of Alberta. I also plan to work on a book that I have already started. The theme of the book is exploration of recent techniques in Deep Learning.

Hewitt, Conrad, Centre for Education in Mathematics and Computing, September 1, 2022 to August 31, 2023 at 100% salary
I propose to continue with my investigations of the possible spatial structures of inhomogeneous cosmological models within the sphere of the Einstein field equations. In particular, I will further pursue my conjecture of chaotic cosmological inhomogeneity and aim to construct models which satisfy this conjecture by modifying models which have temporal oscillations into ones that have spatial oscillations instead.

Ingalls, Brian, Applied Mathematics, September 1, 2022 to August 31, 2023 at 100% salary
My research interests are in computational biology, specifically kinetic modelling of microbial genetics and microbial population dynamics. I plan to devote this leave to 1) preparation of a 2nd edition of a textbook I authored in 2012, and 2) acquiring expertise in novel laboratory methods.

Moraru, Ruxandra, Pure Mathematics, July 1, 2022 to December 31, 2022 at 85% salary
I will continue my research on moduli spaces of sheaves on Hermitian manifolds, I plan to visit Jacques Hurtubise, Brent Pym and Valentino Tosatti at McGill University as well as Vestislav Apostolov at UQAM from September to December 2022.

Munro, J. Ian, Computer Science, November 1, 2022 to April 30, 2023 at 85% salary
Research on space efficient data structures will be the primary focus. This will include text search and indexing among other applications. A secondary area of research will be the computational complexity of comparison based problems (e.g. sorting and selection).

Park, Doug, Pure Mathematics, July 1, 2022 to December 31, 2022 at 100% salary
My area of research is in geometric topology and symplectic geometry. I plan to visit my collaborators in the USA to revitalize my ongoing projects with them in person. I expect to make meaningful progress on the classification problem of exotic smooth structures on simply connected smooth 4-dimensional manifolds.

Salihoglu, Semih, Computer Science, January 1, 2023 to December 31, 2023 at 93.3% salary
I study software systems to manage and process graph-structured data and have expertise in query processing. I plan to remain in Waterloo to focus on: 1) writing a book on novel techniques for query processing in graph database management systems; and 2) develop the background to study a new component, called transaction management.

Saunders, David, Statistics and Actuarial Science, September 1, 2022 to August 31, 2023 at 85% salary
I will continue my research on the applications of probability and optimization to problems in finance and insurance. I will spend time interacting with collaborators at the University of Toronto, the University of Pittsburgh, and the Technical University of Munich. Particular focus will be given to developing my research program on robust methods in quantitative risk management.

Shallit, Jeffrey, Computer Science, September 1, 2022 to August 31, 2023 at 85% salary

My areas of research are combinatorics on words, automata theory, and formal languages. I plan to finish two book projects, continue to supervise my students, and finish a number of half-written papers.

Wan, Justin, Computer Science, September 1, 2022 to February 28, 2023 at 100% salary

I will be conducting research with my research team at UWaterloo on scientific computing and in particular, developing advanced computational methods for applications in finance, physical simulations, and medical imaging. Meanwhile, I plan to attend research conferences in these topics. I also plan to have short visits to colleagues in other research institutions.

Weng, Chengguo, Statistics and Actuarial Science, September 1, 2022 to August 31, 2023 at 85% salary

I will work on three research projects that apply machine learning methods for insurance policy design, investment management, and human mortality prediction, respectively. The expected outcomes are a couple of paper submissions from each project. I will stay at Waterloo most time except for few short trips for conferences and a short visit to collaborators.

Faculty of Science

Brookfield, Andrea, Earth and Environmental Sciences, January 1, 2023 to June 30, 2023 at 100% salary

My area of research is hydrology/hydrogeology and water management. I will travel to the University of Kansas and Oregon State University to complete ongoing grants and publications with collaborators and students. Expected outcomes include data collection, model development, at least five submitted manuscripts, and development of two proposals, including at least 1 multi-institutional proposal.

Craig, Paul, Biology, September 1, 2022 to August 31, 2023 at 100% salary

My area of research is comparative physiology with a specialization in fish energetics and epigenetic mechanism in response to environmental stressors. I will focus on establishing new research techniques and setting up the new WATER Facility associated with my recent CFI-Infrastructure 2020 grant. The outcomes will be to have an established WATER facility that will meet the needs of all end users and enhance the research capabilities of my lab.

Hall, Roland, Biology, September 1, 2022 to August 31, 2023 at 100% salary

I will undertake research assessing the effects of climate changes, industrial activities and contaminant deposition on hydrological and ecological conditions of lakes and ponds in Northern Canada of high conservation value.

Schiff, Sherry, Earth and Environmental Sciences, September 1, 2022 to August 31, 2023 at 86.4% salary

My research focus is the cycling of key elements within lakes, streams, rivers, forests and wetlands in pristine and agricultural watersheds to assess impacts of climate change and human activity on aquatic ecosystems. My time will largely be spent in Waterloo furthering research outcomes on several large funded projects along with field work in Ontario and the Northwest Territories, Canada.

Servos, Mark, Biology, September 1, 2022 to August 31, 2023 at 100% salary

I will focus research on the wastewater-based surveillance (WBE) of COVID-19. During the last two years, my group has led wastewater surveillance in support of Public Health and we now want to 1)

continue this work/research for wastewater detection of pathogens, and 2) publish the results to benefit future pandemic planning. In addition, I plan to initiate a synthesis of environmental impact research on wastewater remediation done in the Grand River over the last two decades.

Spafford, J. David, Biology, September 1, 2022 to August 31, 2023 at 100% salary

I am planning on staying in Waterloo over the next year to concentrate on conducting and publishing research near completion over the next year. My research field is in the study of the origins of nervous system like activity in the simplest known organisms to possess an electrical conducting system.

Yakymchuk, Chris, Earth and Environmental Sciences, January 1, 2023 to December 31, 2023 at 85% salary

I will continue working in the fields of metamorphic geology and tectonics by conducting fieldwork in Canada, developing several new analytical techniques in the Metal Isotope Geochemistry Laboratory at Waterloo, and preparing several manuscripts based on new and previously collected data.

Sabbatical Cancellations

Faculty of Engineering

Canizares, Claudio, Electrical and Computer Engineering, January 1, 2022 to June 30, 2022 at 100% salary

Administrative Leaves

Faculty of Arts

Carvalho, Emanuel, Economics, September 1, 2022 to December 31, 2022 at 100% salary

I will continue to work in the area of local development with a focus on 1) measuring the performance of sectors/industries at the local level; 2) assessing the development prospects of communities varying in size and economic structure according to various policy prescriptions; and 3) focus on the socioeconomic development issues of smaller rural and indigenous communities.

Faulkner, Andrew, Classical Studies, January 1, 2023 to April 30, 2023 at 100% salary

I will continue my SSHRC funded research on late antique Greek poetry. I will use my leave to complete the majority of research for a monograph on the poetic version of the martyrdom narrative of Saints Justina and Cyprian by the 5th-century empress Eudocia.

Ravenhill, John, Political Science, September 1, 2022 to August 31, 2023 at 100% salary

I will work primarily on a new research project on the rise and decline of economic nationalism in Australia. This will be part of a project conducted with a colleague that compares the experiences of Australia and Canada, which we anticipate will lead to a book manuscript.

FOR INFORMATION

ADMINISTRATIVE APPOINTMENTS

Report Summary

Administrative Appointments: 11
Administrative Appointment Changes: 2

Administrative Appointments

Faculty of Arts

[Kline, Scott](#), appointment as Chair, Religious Studies, Faculty of Arts, effective July 1, 2022 to June 30, 2026.

Faculty of Engineering

[Sivonthaman, Siva](#) appointment as Associate Dean, Graduate Studies and Postdoctoral Affairs, Faculty of Engineering, effective August 1, 2022 to July 31, 2025.

Faculty of Environment

[Craik, Neil](#), appointment as Interim Director, Environment, Enterprise and Development, Faculty of Environment, effective July 1, 2022 to December 31, 2023.

[Deadman, Peter](#), appointment as Associate Dean, Graduate Studies, Faculty of Environment, effective May 1, 2022 to April 30, 2025.

[Nayak, Prateep](#), appointment as Associate Dean, Equity, Diversity, Inclusion and Justice, Faculty of Environment, effective May 1, 2022 to April 30, 2025.

Faculty of Health

[McIlroy, William](#), appointment as Associate Dean, Research, Faculty of Health, effective July 1, 2022 to June 30, 2023.

[Mourtzakis, Marina](#), appointment as Associate Dean, Research, Faculty of Health, effective July 1, 2023 to June 30, 2026.

Faculty of Mathematics

[McKinnon, David](#), re-appointment as Chair, Pure Mathematics, Faculty of Mathematics, effective July 1, 2022 to June 30, 2026.

[Wu, Changbao](#), appointment as Chair, Statistics and Actuarial Science, Faculty of Mathematics, effective July 1, 2022 to June 30, 2026.

Faculty of Science

[Corrigan, John](#), appointment as Chair, Chemistry, Faculty of Science, effective July 1, 2022 to June 30, 2026.

[Idziak, Stefan](#), appointment as Associate Dean, Co-operative and Experiential Education and Computing, Faculty of Mathematics, effective September 1, 2022 to August 31, 2025.

Administrative Appointment Changes

Faculty of Environment

[Singh, Simron](#), appointment as Associate Dean, Graduate Studies, Faculty of Environment, from the current term of September 1, 2021 to December 31, 2022, changed to September 1, 2021 to April 30, 2022.

Faculty of Science

[Power, William](#), appointment as Chair, Chemistry, Faculty of Science, from the current term of September 1, 2018 to August 31, 2022, changed to September 1, 2018 to June 30, 2022.

BOARD OF GOVERNORS
Report of the Vice-President, Administration & Finance
7 June 2022

FOR APPROVAL

Waterloo Undergraduate Student Association (WUSA) Administered fees

Approved by WUSA Students' Council on May 14, 2022.

WUSA membership fees

Recommendation to approve the following increases to the WUSA membership full-time fees effective Fall 2022:

WUSA Operations – from **\$34.66 to \$35.91** per term, an increase of 3.6%

WUSA Student Life – from **\$35.00 to \$36.26** per term, an increase of 3.6%

WUSA Academic Support & Advocacy – from **\$15.39 to \$15.98** per term, an increase of 3.8%

- WUSA membership fees are compulsory and collected from all undergraduate students.
- Part-time rates are 30% of the full-time rates.

WUSA UG Capital Program Fund fee

Recommendation to approve an increase to the WUSA UG Student Capital Program full-time fee from **\$15.11 to \$15.62** (3.4%) per term effective Fall 2022.

- The fee is compulsory and assessed and collected from all undergraduate students.
- Part-time rate is 30% of the full-time rate.

WUSA Grand River Transit UPass fee

Recommendation to approve an increase to the WUSA Grand River Transit UPass fee from **\$110.78 to \$118.97** (7.4%) per term effective Fall 2022.

- The fee is assessed and collected from all full-time undergraduate students on a campus within the Region of Waterloo.
- The UPass fee pays for a universal transit pass with the Grand River Transit.
- The increase reflects a contractual increase of 3% plus a WUSA administration fee.
- The fee is compulsory; contract allows for approved exemptions based on documentation provided.

WUSA Student Refugee Program fee

Recommendation to approve an increase to the WUSA Student Refugee Program fee from **\$5.01 to \$5.18** (3.4%) per term effective Fall 2022.

- The fee is optional and is assessed and collected from all full-time and part-time undergraduate students.

WUSA Orientation fee

Recommendation to approve an increase to the WUSA Orientation fee from **\$117.17 to \$121.15** (3.4%) effective Fall 2022.

- The fee is optional and is assessed and collected from all full-time undergraduate students who are in their first term at University of Waterloo.
- The fee is only charged during Fall terms.

UW Student Publications fee

Recommendation to approve an increase to the UW Student Publications full-time fee from **\$5.79 to \$5.99** (3.4%) per term effective Fall 2022.

- The fee is optional
- Part-time rate is 30% of the full-time rate.

Undergraduate Student Society fees (WUSA-sponsored)

Engineering Student Society, Pharmacy Student Society and Mathematics Student Society fees

Recommendation to approve changing the fees for the Engineering Student Society, Pharmacy Student Society and Mathematics Student Society from optional to compulsory effective Fall 2022.

- The fees are assessed and collected from all full-time undergraduate students enrolled in programs in Engineering (including Architecture and Software Engineering), or Pharmacy, or Mathematics (including Software Engineering and Computing and Financial Management).
- Students can request a refund directly from the student society after the start of term.
- WUSA will monitor, report on, and ensure the integrity of each society's opt-out and refunding process.
- WUSA approved the student societies' request to individually determine the method of assessment (compulsory or optional) on March 29, 2022.

Engineering Student Society

Recommendation to approve an increase to the Engineering Society fee from **\$17.84 to \$18.44** (3.4%) per term effective Fall 2022.

- The fee is assessed and collected from all full-time undergraduate students enrolled in Engineering programs including Architecture and Software Engineering.
- The proposed change was approved at the Engineering Society's Joint General Meeting and ratified by WUSA.

Graduate Student Association (GSA) administered fees

GSA Grand River Transit UPass fee

Recommendation to approve an increase to the GSA Grand River Transit UPass fee from **\$105.50 to \$107.61** per term effective Fall 2022, a contractual increase of 2%.

- The fee is assessed and collected from all full-time graduate students on a campus within the Region of Waterloo.
- The UPass fee pays for a universal transit pass with the Grand River Transit.
- The fee is compulsory; the contract allows for approved exemptions based on documentation provided.
- The proposed fee change was approved by the GSA Board of Directors on March 23, 2022.

Undergraduate and Graduate Students fees

SLC/PAC Expansion fee

Recommendation to approve an increase to the SLC/PAC Expansion full-time fee from **\$18.00 to \$18.63** (3.5%) per term effective Fall 2022.

- The fee is compulsory and is assessed and collected from all graduate and undergraduate students in programs on campuses in Waterloo or Kitchener.
- The fee is outlined in an agreement between WUSA, GSA and University of Waterloo (February 2018) and supported by graduate and undergraduate referenda conducted in February 2016.
- The agreement specifies that the fee will begin following completion of the project and indexed thereafter. The fee was first charged Fall 2021.
- Part-time rate is 30% of the full-time rate.

Dennis Huber
Vice-President,
Administration & Finance

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University of Waterloo
Board of Governors
BUILDING & PROPERTIES COMMITTEE
Report to the Board of Governors
7 June 2022

This report is submitted following the committee's 18 May 2022 meeting. The agenda package of the open session is available here: [Building and Properties Committee - agenda and minutes | Secretariat | University of Waterloo \(uwaterloo.ca\)](#)

FOR INFORMATION

1. 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 annual statutory compliance report;
- the maintenance program and energy conservation efforts; and,
- the work plan of the committee.

/ar

Murray Gamble
Chair

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University of Waterloo
Board of Governors
FINANCE & INVESTMENT COMMITTEE
Report to the Board of Governors
7 June 2022

This report is submitted following the committee's meeting of 19 May 2022, for inclusion in the consent agenda.

FOR INFORMATION

1. General Oversight

Investment Fund Performance. The committee reviewed the performance of the registered pension plan, endowment fund, IQC trust fund, and payroll pension plan portfolios as at 31 March 2022. On a one-year basis the registered pension fund returned 5.0% net of fees, below the return target of 10.4% (CPI+3.5%). The endowment fund's performance exceeded the fund's policy benchmark on a one-year basis, whereas the IQC trust fund trailed its benchmark over the same period. The payroll pension plan, which is fully indexed, continues to track closely to the policy benchmark. The committee observed that the recent market downturn and trends toward higher interest rates will cause market volatility and mute returns. Over the most recent four-year period, returns for all funds continue to exceed established benchmarks.

2. Prospective Venture Fund Investment

The committee has considered a variety of different potential venture fund investments/vehicles in recent months and will continue its review and due diligence over the summer months into the fall.

3. Committee Retreat

The committee held a retreat event on 5 April 2022, with discussion focused on three main topics: venture capital investment, economic outlook and risks, and identifying key challenges going forward.

/mg

Michael Ashmore
Chair

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**University of Waterloo
GOVERNANCE COMMITTEE
Report to the Board of Governors
7 June 2022**

This report is submitted following the committee's meeting of 19 May 2022.

FOR INFORMATION

1. Governance Committee Retreat

The committee has organized a retreat event for 1 June, where members will discuss the strategic priorities of the Board of Governors and its various committees. The work of the Governance Review Committee will serve as a foundation for these discussions, toward the enunciation of a harmonized work plan for the Board and its committees.

2. Planning for Board of Governors Retreat

The committee heard preliminary plans for the upcoming Board retreat, tentatively scheduled for 28 September 2022. The retreat will be an opportunity to engage governors on key issues facing the University. The program and various modules for the event are under development, and more detail will be provided to governors closer to the event date.

30 May 2022
/mg

Cindy Forbes
Chair

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MEMORANDUM

To: Board of Governors

cc: Karen Jack, University Secretary

From: Charmaine B. Dean, Vice-President, Research and International

Date: 2022-05-31

Subject: Institute for Quantum Computing – Annual report and corporate plan

- For decision -

Please find attached the following documents for consideration:

1. The Institute for Quantum Computing's **Annual Report** (*April 1, 2021 – March 31, 2022*) to the Ministry of Innovation, Science and Economic Development (IQC Report to ISED 2021-2022)
2. The Institute for Quantum Computing's *Fiscal 2022-2023 IQC* **Corporate Plan** to the Ministry of Innovation, Science and Economic Development (IQC Corporate Plan 2022-2023)

As a condition of the funding agreement between the Ministry of Innovation, Science and Economic Development (ISED) and the University of Waterloo in respect of the Institute for Quantum computing, the Board of Governors is required to approve the annual report and the corporate plan prior to submission to ISED.

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2020-2025 Strategic Plan Thematic Spotlights on **Research**

In this Board governance cycle, we focus on the thematic area of Advancing Research for Global Impact within the institution's strategic plan. Last week, Governors attended the Strategic Plan Thematic Discussion linked to this theme. At the discussion, a brief overview of the institution's research strategy was followed by an in-depth presentation of the plans and activities under the newly established Office of Commercialization and Entrepreneurship. The Office is a key driver for realizing the second of three goals under the Research theme of our strategic plan: to propel Waterloo's global leadership in innovation, entrepreneurship and social impact. The briefing in this report on pages 3 to 6 provides an overview of the Office of Commercialization and Entrepreneurship including its mission statement, key pillars of activities, and desired impact.

I want to thank the Governors for the discussion last week which included several guiding questions and input for management to reflect upon as strategies and initiatives are enhanced for quality and continuous improvement.

At our BOG meeting next week, we take the opportunity to advance engagement with the Research theme through a panel presentation and discussion with UW students and alumni. The presenters will share their experiences in their unfolding journeys as innovators and entrepreneurs resulting from their time and investments in Waterloo programs and supports for innovation, entrepreneurship, and commercialization. Short bios of the presenters are shared in this report on page 7.

As noted in past cycles, it is not possible to feature all initiatives under our strategic plan's thematic areas. In the case of Research, those pertaining more directly to goals one and three as outlined below will be spotlighted in future cyclical engagements with the strategic plan as well as through our Fall BOG meeting and progress report on all the entire strategic plan.

Advancing Research for Global Impact

- R1** Waterloo will use its disciplinary and interdisciplinary strengths to solve increasingly complex, real-world problems.
- R2** Propel Waterloo's global leadership in innovation, entrepreneurship and social impact.
- R3** Achieve greater research impact by leveraging Waterloo's partnerships.

Below are questions for discussion, used primarily for our Thematic Discussion last week. In addition to engaging with our panelists next week on their experiences, you are encouraged to bring broader questions and comments on the work and plans at Waterloo to achieve our goals

for advancing research for global impact and the more specific initiatives in entrepreneurship and commercialization.

Discussion questions

1. Are there additional opportunities to focus on the needs of our ecosystem in developing this framework for support of entrepreneurship and commercialization?
2. Are there additional opportunities to focus on needs of our students?
3. Considering the importance of social impact of Waterloo's research and talent development, how should we engage with the UN Sustainable Development Goals?
4. Are there specific metrics (in addition to our commitments to federal and provincial governments) that we should consider?
5. How could alumni engage with and support the Waterloo Warrior Fund and broader activities supporting student entrepreneurship?
6. How can we drive excitement to inspire someone to become a philanthropist or investor?

>>>>

The Office of **Commercialization & Entrepreneurship**

1 Vision

The Office of Commercialization and Entrepreneurship is the focal point that makes Waterloo the acknowledged leader in all aspects of innovation, entrepreneurship, and commercialization in Canada and will enable innovators, founders, and others to thrive and succeed.

2 Mission

The Mission of the Office of Commercialization & Entrepreneurship is to build on Waterloo's existing foundation of innovation, entrepreneurship, commercialization – supporting and encouraging members of our community to innovate and build using their creativity.

3 Key Pillars

The Office of Commercialization and Entrepreneurship is a mechanism to better coordinate related units and initiatives on campus to broaden our support to the diverse needs of campus innovators.

There are three key pillars of activities in the Office of Commercialization and Entrepreneurship: (1) **WatCo** focuses on supporting innovation and the path to commercialization; (2) **Velocity** sets entrepreneurs up for success; and (3) through **Thought Leadership** the Office is advancing Waterloo as a leader and innovator. Each are expounded below. A cross-unit initiative is the Translation program, which is meant to be a cornerstone activity where WatCo

and Velocity have good overlapping supports to begin our collaboration efforts, with an initial focus on graduate student entrepreneurial activities.

3.1 WatCo

The Waterloo Commercialization Office (WatCo) provides commercialization support primarily to the UW research community. This includes management of intellectual priority portfolios, education on intellectual property, de-risking prototype development funding support, and executing licensing and startup strategies with innovators.

WatCo's priority areas include:

- Implementing Waterloo's obligations under the Provincial "IP Action Plan" Commercialization Mandate Agreement.
- Building an ecosystem that supports entrepreneurial communities through consideration of principles of equity, diversity, and inclusion.
- Engaging alumni in the ecosystem, through accessing their expertise and time, in trial discussions with Advancement on programmatic and communications approaches.
- Aligning the Warrior Fund and Cognition Fund (which is currently focusing on "deep tech" opportunities that arise from Waterloo's research community).

3.2 Velocity

Since its inception, Velocity has focused on supporting startups during the riskiest and earliest time of business building. Our 14 years of experience allowed us to learn from founders and discover the most effective ingredients for success: a fast and transparent fundraising process, supplying founders with connections, practical and authentic business expertise, a deeply supportive community, space to build a team and develop products, and risk-tolerant capital.

No. of current teams/start ups	% of teams targeting SDGs	Technologies commercialized since 2020	All-time no. of companies	Jobs created	Total capital raised
67	76%	25	>420	>5,000	\$4.2B

With our deep focus on founders and students, we are seeing shifts in why people are choosing to build a company and how they would like to do it. Entrepreneurs are changing:

- They care about positive and significant change in the world more than they care about building wealth for themselves.
- Their relationship with work is changing. Work is a tool to create positive change, not a thing that they must do for someone else.

- We are entering a time of great challenges, global conflict, and scarcity - entrepreneurs are more engaged than ever in these issues.
- Entrepreneurs seek to find ways for a more harmonious relationship between the advancement of technology and our humanity.
- Entrepreneurs build because they do not see their needs and the needs of their futures being met by the corporations and governments of the world.

In response to these changing needs, Velocity is:

- Now measuring ourselves not only by financial outcomes but by positive global impact
- Embracing the momentum toward work flexibility
- Increasing our scope beyond the Waterloo Region
- Instilling equality, diversity, inclusion, and anti-racism into the highest levels of our processes
- Building a team of experienced entrepreneurs who bring empathy to new founders
- Meeting the most significant needs of founders on their terms

More specifically, Velocity aims to amplify both local and global impact by helping our region's founders and innovators achieve global recognition and market share, and bringing global perspectives and a vetted, principled network of investors and other supports to Waterloo. Via the Velocity fund, Waterloo can create unique engagements with Waterloo founders locally and abroad, foreign ecosystems, and develop know-how on how to help founders build companies with global presence and influence.

3.3 Thought Leadership

Our objective is clear: Waterloo will become recognized worldwide as a pre-eminent thought leader in innovation, commercialization, and entrepreneurship.

Building on our foundation in the practical aspects of innovation, commercialization, and entrepreneurship, we will engage our community in more structured thinking and inquiry on the frameworks that inform these topics. We will engage in pure and applied research, communications and branding Waterloo, engaging with policy makers, and being participative and present in conversations on the topic of innovation, commercialization, and entrepreneurship across Canada and around the world.

In the short term, we will do this by:

1. Striking a council/task force to identify opportunities and chart the path forward
2. Implementing thought leadership initiatives
3. Iterate: evaluate initiatives, discontinue those that are not performant, and develop new ones in their stead

Some initial initiatives that we are considering include establishing or engaging:

- Council for Innovation Policy and Strategy
- Canadian Innovation Conference (scholars, practitioners, & policymakers)
- National Innovation Awards (invention, start-up, industry, policy)
- UW Innovation Lectures (like the [Massey lectures](#))
- Establish Chairs in innovation, commercialization, and entrepreneurship

To ensure sustainability of these initiatives, we are considering potential sources of funding for thought leadership programs.

4 Goals

Short Term:

- Establish Warrior Family of Funds Trust
- Establish Thought Leadership Council
- Revise and formalize current vehicles by which entrepreneurship units on campus outside the Office of Commercialization and Entrepreneurship coordinate activities
- Establish Social Impact Structure
- Innovation Arena – Phase 1 (physical upgrade and Velocity move into Innovation Arena)

Mid-term:

- Innovation Arena – Phase 2 (Establishment of partnerships within Innovation Arena)
- Establish External Advisory Council

Longer-term:

- Develop global leadership in defining measures of the impact of entrepreneurship
- Develop and expand the scholarly environment to support thought leadership in innovation, commercialization, and entrepreneurship

5 Impact & Value

- Enriched and differentiated entrepreneurial skill building opportunities for undergraduate and graduate students that enhances recruitment, employability, and entrepreneurial career path choices.
- Driving Region of Waterloo/Ontario's job and wealth creation from startups that are positioned and capitalized for success from Waterloo's Office of Commercialization and Entrepreneurship programs.
- Positioning Waterloo as a global leader in commercialization and entrepreneurship thought leadership that supports student recruitment and global rankings.

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Panelists for June 7 BOG Meeting **Short Bios**

1 Chee HaU Teoh (MAsc, '20): Co-founder, Nfinite Nanotechnology

Chee is the CEO and Co-founder of [Nfinite Nanotechnology](#), a venture-backed startup that makes smart nanocoating for sustainable packaging to eliminate plastic waste. He received his MAsc degree in Mechatronics Engineering from the University of Waterloo. He invented the first two industrial-scale nanocoating systems in Canada that can produce superior ultrathin-films at high speed and low cost. To fight the plastic crisis, he and his team are working with brand owners and packaging producers to rethink and redefine their packaging design for a circular economy. Mr. Teoh holds two BS degrees from Pennsylvania State University (Nuclear Engineering and Mechanical Engineering) and a Master of Applied Science Degree (Mechanical and Mechatronics Engineering) from the University of Waterloo.

2 Margaret Mutumba (PhD Candidate, Faculty of Health): Co-Founder, MedAtlas

Margaret Mutumba is trained in public health policy and has worked in specialized health care in her native Uganda, as well as Tanzania, Rwanda, and Zambia. Having overseen the operations of fertility clinics in this large region, she understands the difficulties patients face in accessing specialized health care, where there are too few specialists to meet the needs of patients. This led her to found MedAtlas, “an affordable telemedicine healthcare platform that connects patients to a specialist from anywhere in Africa.” ([Waterloo Global Impact Report story](#).) Ms. Mutumba credits Waterloo’s entrepreneurial ecosystem with giving her the expertise and support to build a startup. Ms. Mutumba holds a BSc in Pharmacology from King’s College London, and a Master of Public Health degree from Imperial College, London.

3 Rachel Bartholomew (MBET '14): Founder, Hyivy Health

Rachel Bartholomew was diagnosed with cervical cancer in 2019, and learned that her life-saving treatment would have a profound effect on her pelvic health. However, she also learned that post-treatment rehabilitation – whether following cancer, endometriosis, vaginoplasty (gender affirming surgery), childbirth, or other situations – can have a profound impact on a person’s pelvic health, but treatments were still limited to technologies from the 1930s. This drove her to found Hyivy Health, “a startup that is developing a rehabilitation system – a connected vaginal wand, a patient app and a portal for clinicians – to help women recover from everything from cervical cancer and gender-affirming surgery to childbirth.” ([Waterloo Magazine story](#).) Waterloo’s Biomedical Engineering program has been a key part of her company’s success, with skilled students who understand human-centred design as a differentiator. Ms. Bartholomew holds a BCom (Hons) degree from York university, and a Master’s Degree in Business, Entrepreneurship and Technology from the University of Waterloo.

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UNIVERSITY OF WATERLOO
BOARD OF GOVERNORS
Report of the Vice-President, Advancement
June 7, 2022

FOR INFORMATION

This report provides a summary of select Advancement activities and financial results for fiscal 2021-22. All financial data is May 1, 2021 – April 30, 2022.

The second year of the global pandemic saw a continuation of primarily virtual alumni events with strong participation and engagement with the content provided live and following via shared recordings. This continues to provide a good medium to engage with our global alumni community, and while we had anticipated a sooner return to in person events, we did see some select in person activity in the last quarter of the fiscal.

We also saw an improvement in overall fundraising performance with several Faculties, Schools, and Academic Support units achieving results on trend with past fiscal years despite a challenging and competitive fundraising environment in the second year of the global pandemic.

HIGHLIGHTS OF F22

Advancement Activity

- Successfully supported Presidential transition. Transition activities provided meaningful touchpoints for the outgoing President with many of the University's top donors and prospects, and opportunities for the incoming President to engage with most of the University's top Advancement relationships over the first 10 months of his presidency through bespoke outreach, 1:1 meetings and events.
- Return of some in-person events and limited travel, with a first brief Presidential trip to visit select donors and alumni in the San Francisco Bay Area (April '22).
- Alumni Event highlights:
 - Financial Literacy Event Series
 - Hosted by our four Canadian Alumni Chapters
 - Wide-ranging learning around financial literacy
 - Total attendance for the series was 522, highest chapter event registration to-date
 - Fantastic Alumni Day March 12th, 2022
 - Total Registered – 974 In-Person, 45 Online
 - Alumni Data Plus Events
 - Partnership with the Faculty of Mathematics
 - *Data + Climate* Virtual Event April 26 - 458 registered and 234 attended

- *Data + Health* Virtual/In-Person Event May 17 - 476 registered for online and 67 attended in person
- Convocation 2022
 - 2020 and 2021 alumni invited back to campus for six special in person ceremonies June 11-12
 - Overwhelming response with 4,080 alumni and 8,000+ guests registered
 - 14 additional ceremonies are being held for our 2022 graduates

Financial Performance

- Saw an improvement in year over year fundraising results; closer to the 5-year median
- FY2021-22 a record year for Athletics - more than \$1 million raised
- 30 new planned gift intents valued at \$6,062,500, increasing the planned giving pipeline to 837 confirmed planned gifts valued at an estimated \$132,693,600
- Annual Giving's *Giving Tuesday* campaign (all Faculty, College and ASU teams) raised \$597,655 from 1,386 donors, a 51% increase in revenue and 45% increase in donors over FY21
- FY23: strong roster of ask-ready prospects and current asks outstanding/verbal commitments with potential to close over next twelve months. Optimistic the health of our \$1M+ pipeline will lead to continued improvement in overall fundraising results.

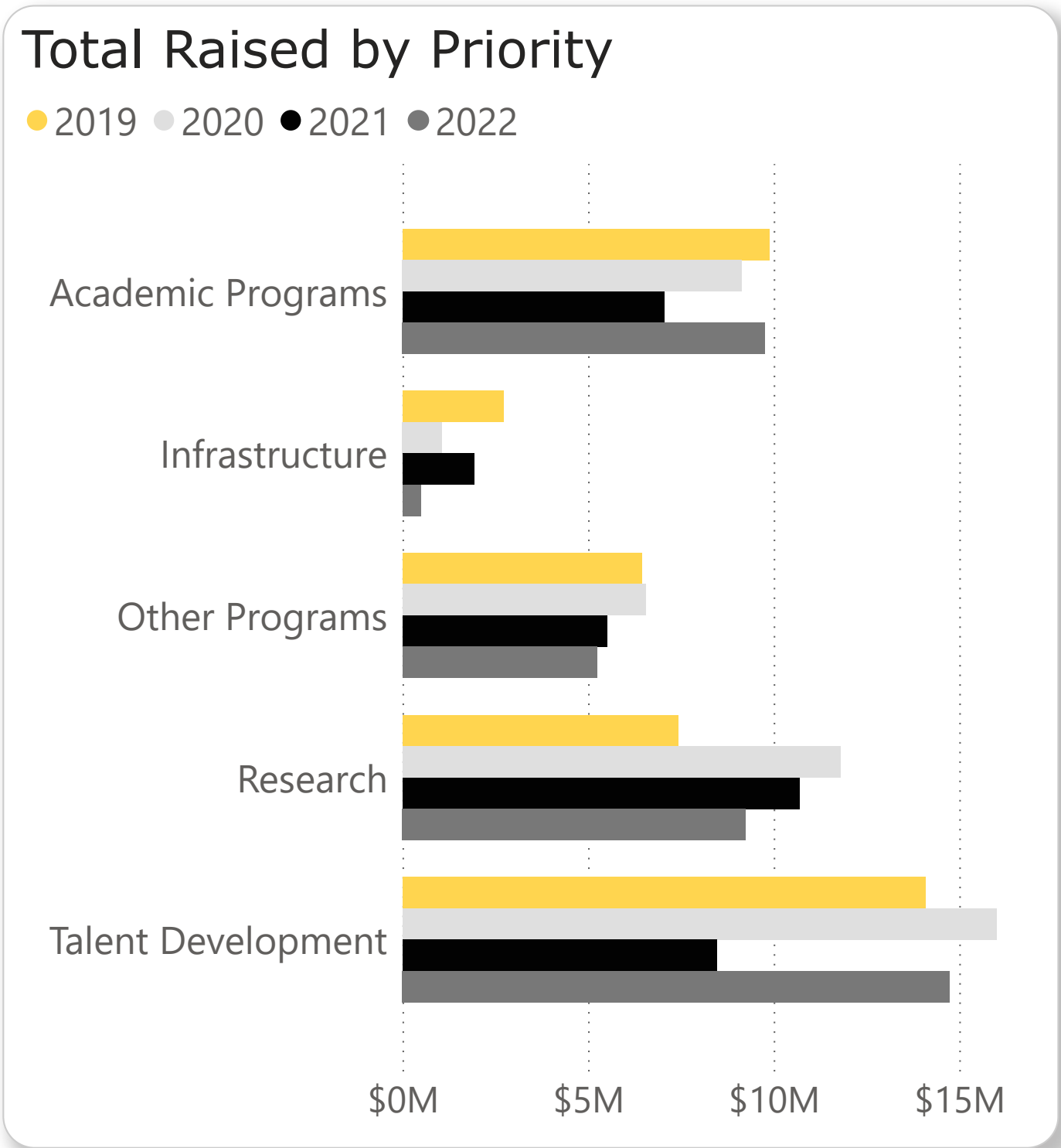
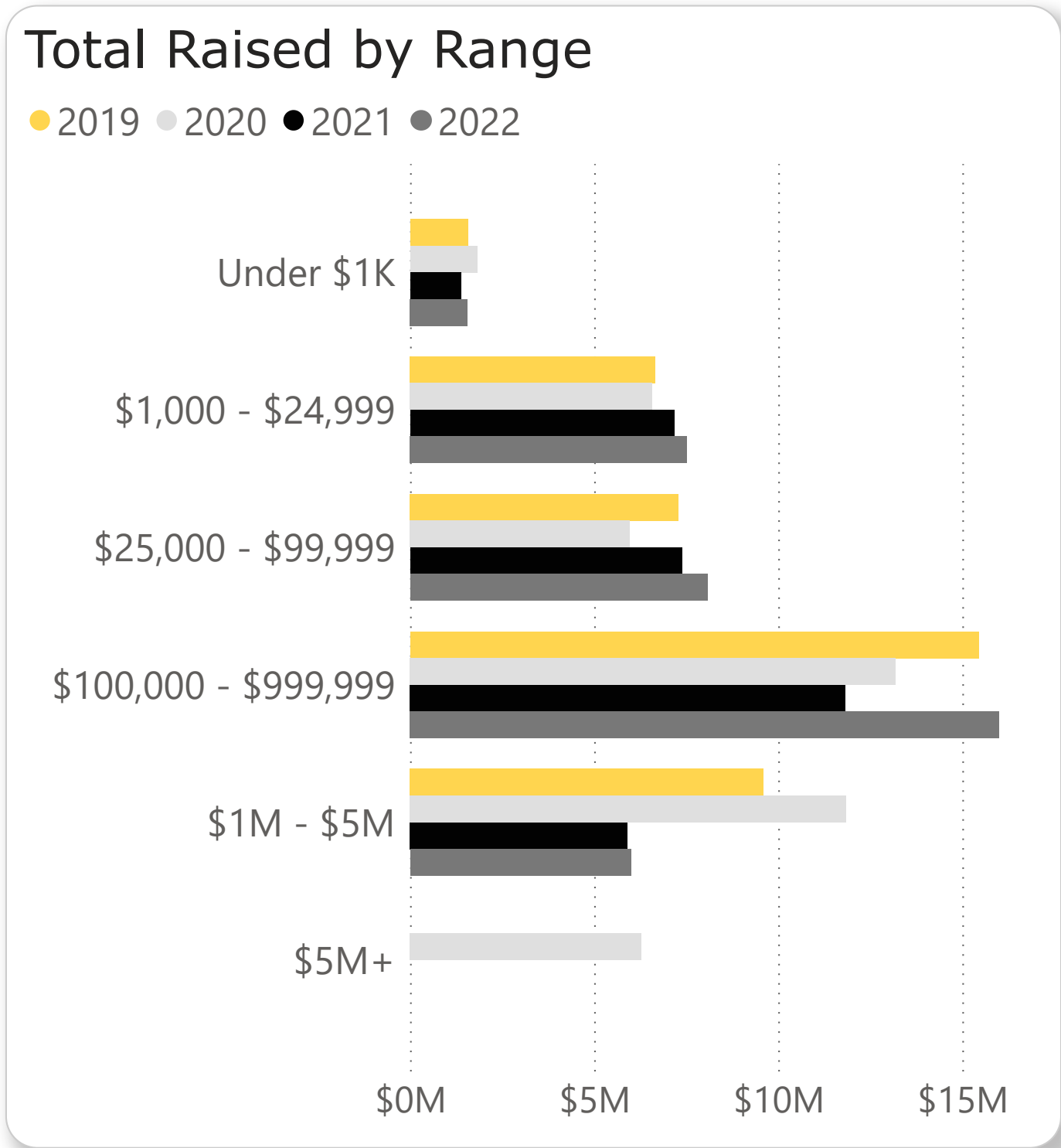
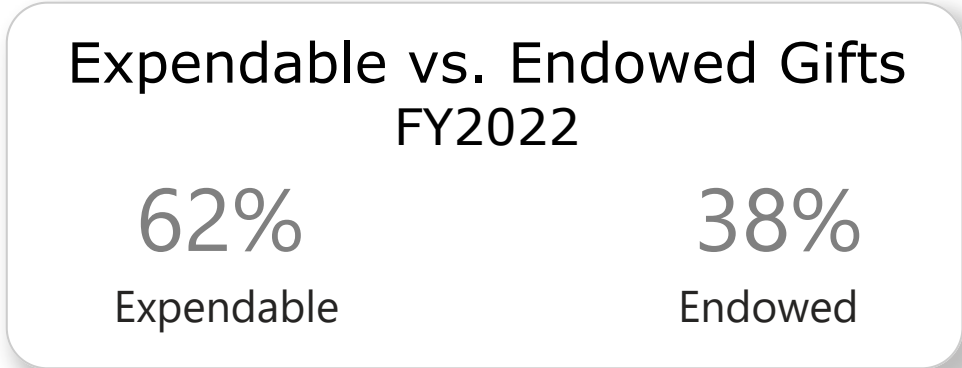
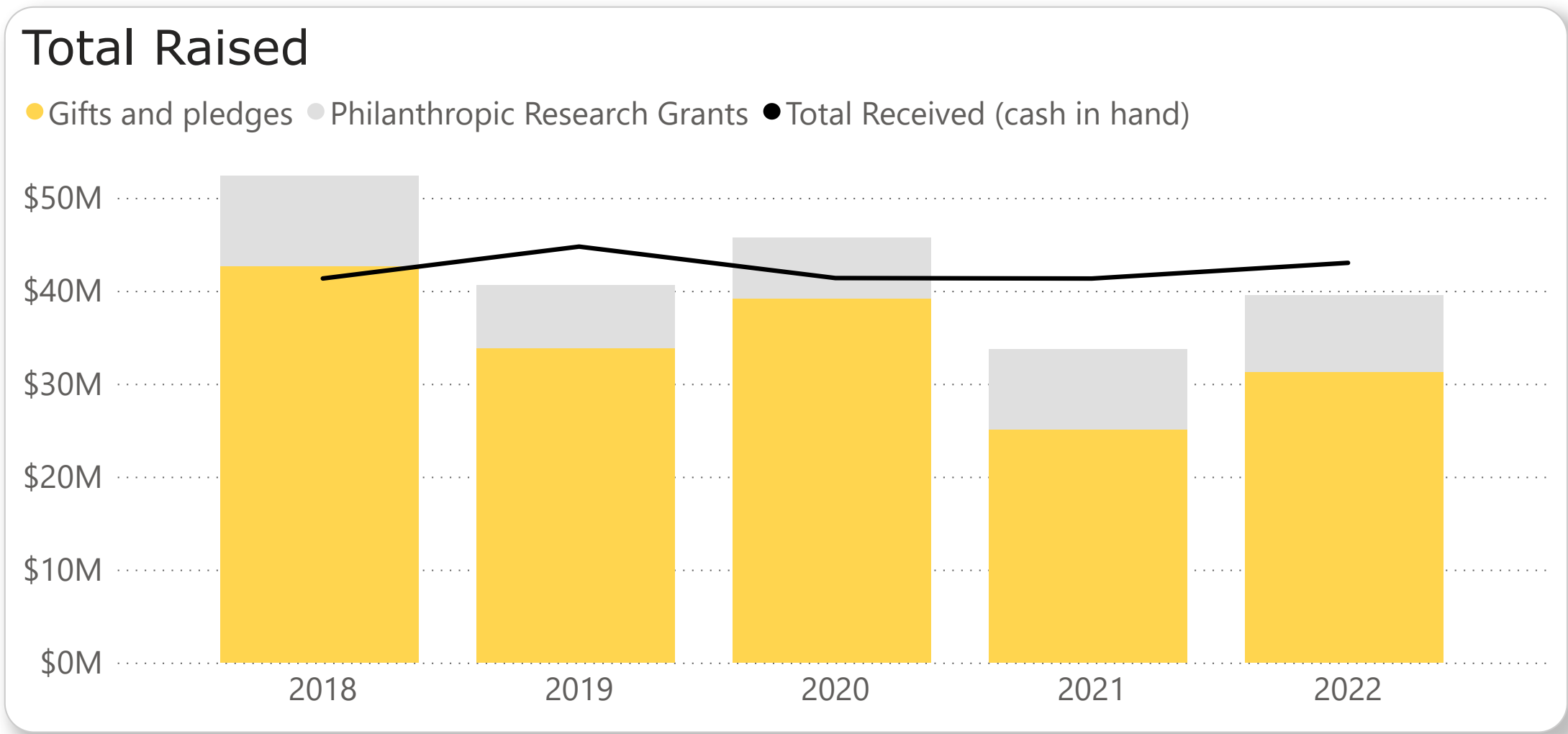
F2021/22 financial results dashboard as well as some benchmarks and trends follow:

Nenone Donaldson
Vice-President, Advancement

Financial Results

All years displayed are full fiscal years, May - April

In FY2022, the University of Waterloo raised **\$39,492,203** in gifts and philanthropic research grants from individuals, foundations, and corporations. These generous contributions from **8,237 donors** support big ideas and the people with the skills to implement them at our University.



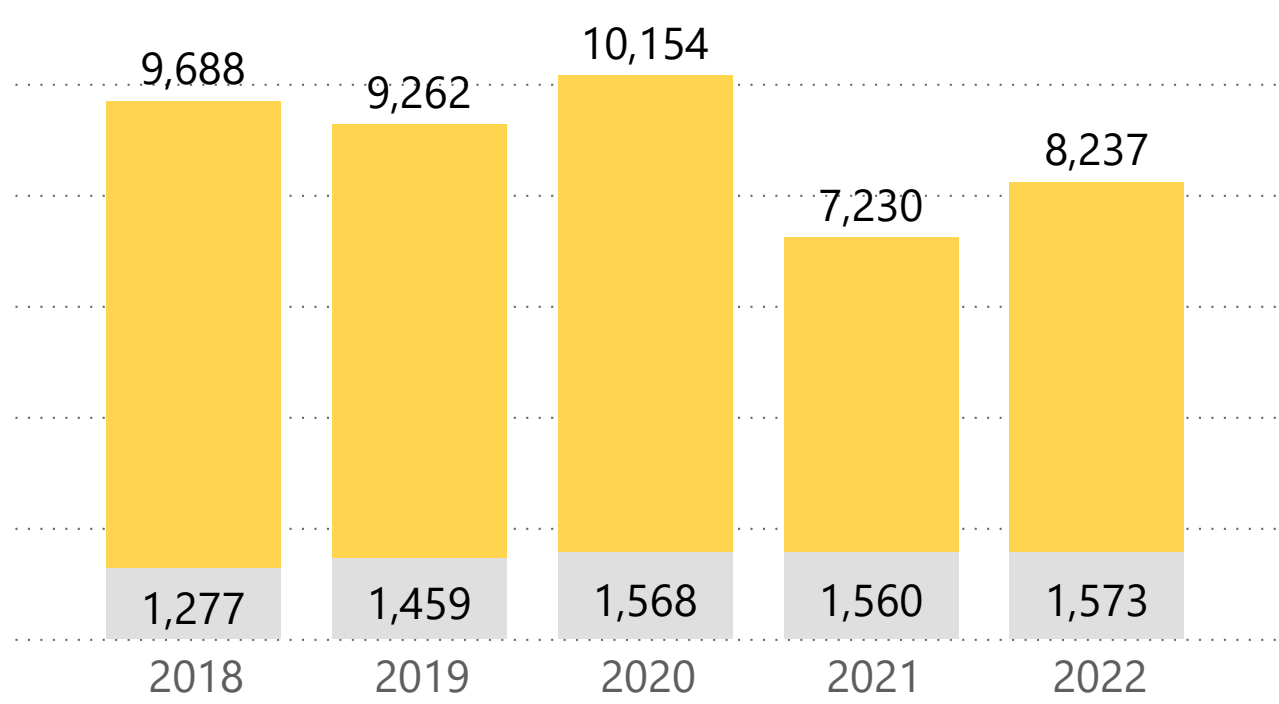
Constituent Analysis

All years displayed are full fiscal years, May - April

The number of monthly recurring donors has increased since FY2018. These are some of the University's most loyal supporters, with some giving consecutively for five years or more.

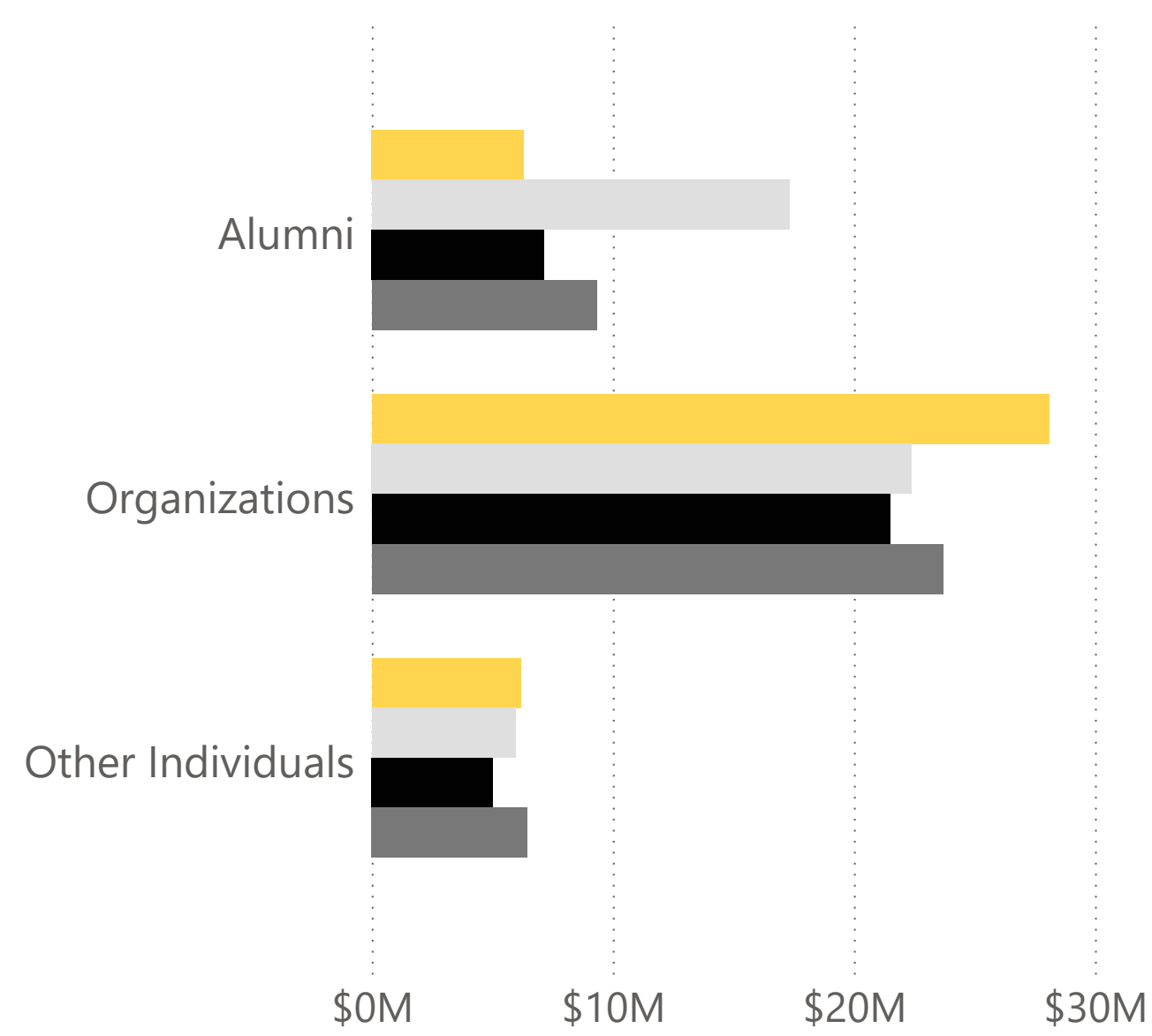
Donors

● Monthly Recurring Donors ● Other Donors



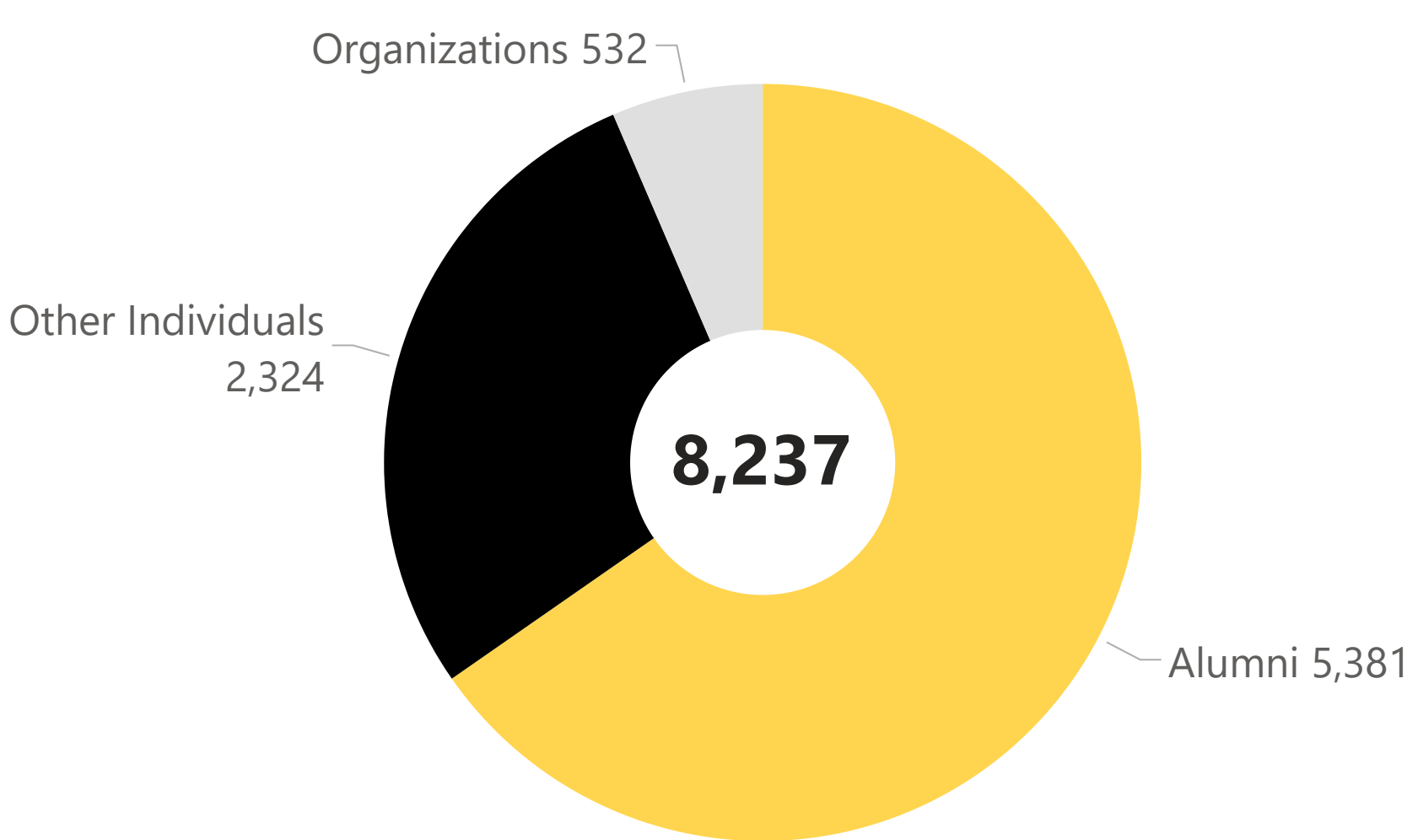
Total Raised by Constituency

● 2019 ● 2020 ● 2021 ● 2022



Alumni and organizations are the strongest supporters of the University of Waterloo, but “Other Individuals”—faculty, staff, retirees, parents, students, and other supporters—contribute generously every year as well and represent a strong growth constituent.

FY2022 Donors by Constituency



Future Revenue

All years displayed are full fiscal years, May - April

Planned Gifts

From FY2018 through FY2022, the University of Waterloo has been notified of **\$36,617,500** in planned gift intentions from **218** alumni and friends—a demonstration of deep commitment and connection to the University.

Planned Gift Commitments		Realized Estate Gifts	
Year	Total	Year	Total
2018	\$7,000,000	2018	\$508,288
2019	\$11,180,000	2019	\$497,223
2020	\$8,560,000	2020	\$501,690
2021	\$4,240,000	2021	\$397,246
2022	\$5,637,500	2022	\$402,612

Major Gift Asks

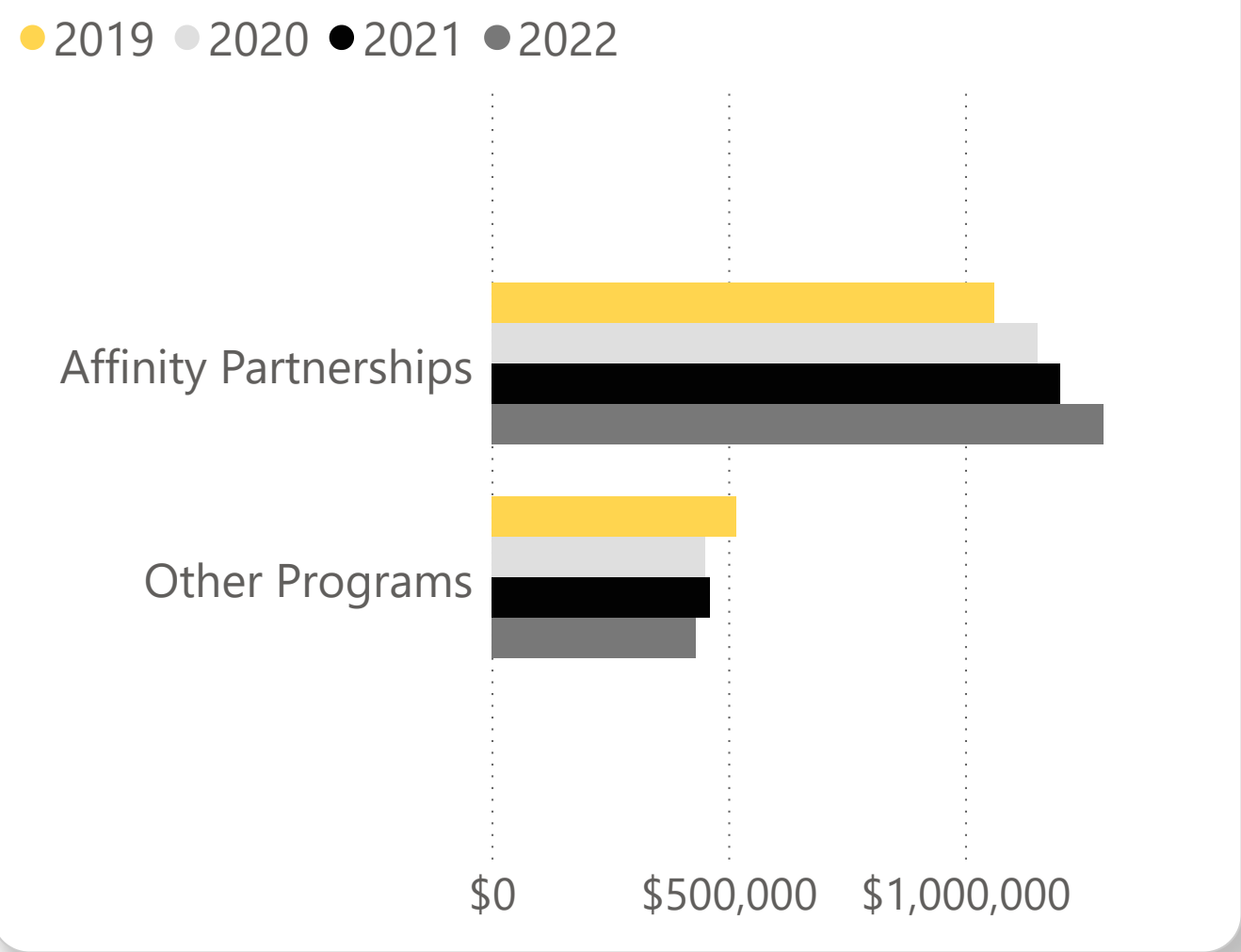
While strong cultivation and stewardship continued across the University during the pandemic, the lingering uncertainty has lead some donors to refrain from larger commitments. The recovering value of asks in FY2022 is a promising indicator for FY2023. This reflects the dedicated and ongoing multi-year cultivation and strategy work with top prospects across the institution.

Year	Asks Made (#)	Asks Made (\$)	Asks Funded (#)	Asks Funded (\$)
2019	231	\$100,246,537	162	\$27,685,411
2020	177	\$24,771,430	128	\$20,096,463
2021	215	\$22,109,000	158	\$10,130,712
2022	223	\$62,047,903	124	\$12,077,610

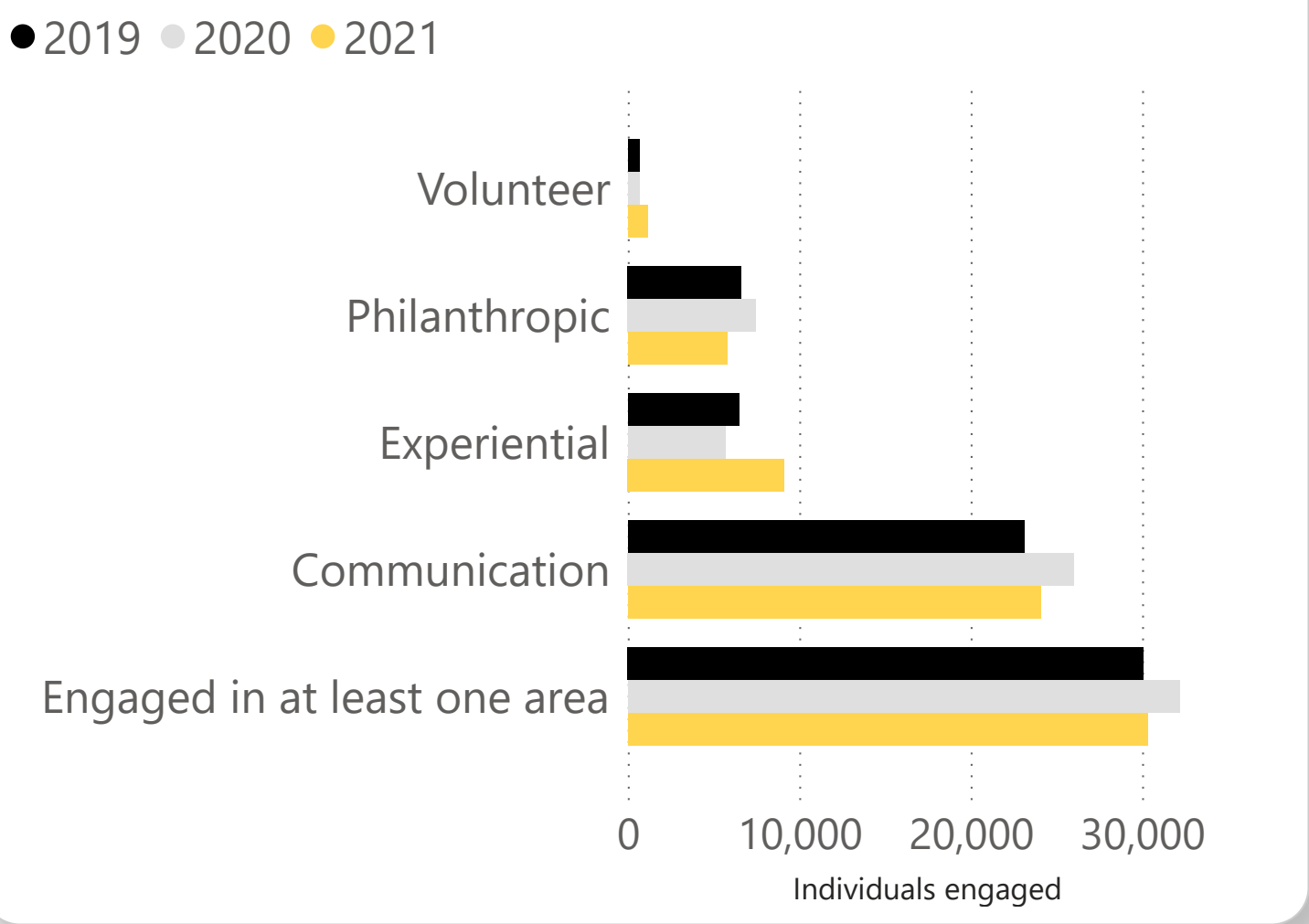
Alumni Relations

With a network of more than 220,000 Waterloo ambassadors creating a lasting impact on the world, the University engages annually with thousands of alumni directly through events, donations, communications, and volunteer roles. Alumni Relations began measuring engagement in 2019 to count—and grow—the number of individuals who connect with us from year to year.

Non-Philanthropic Revenue



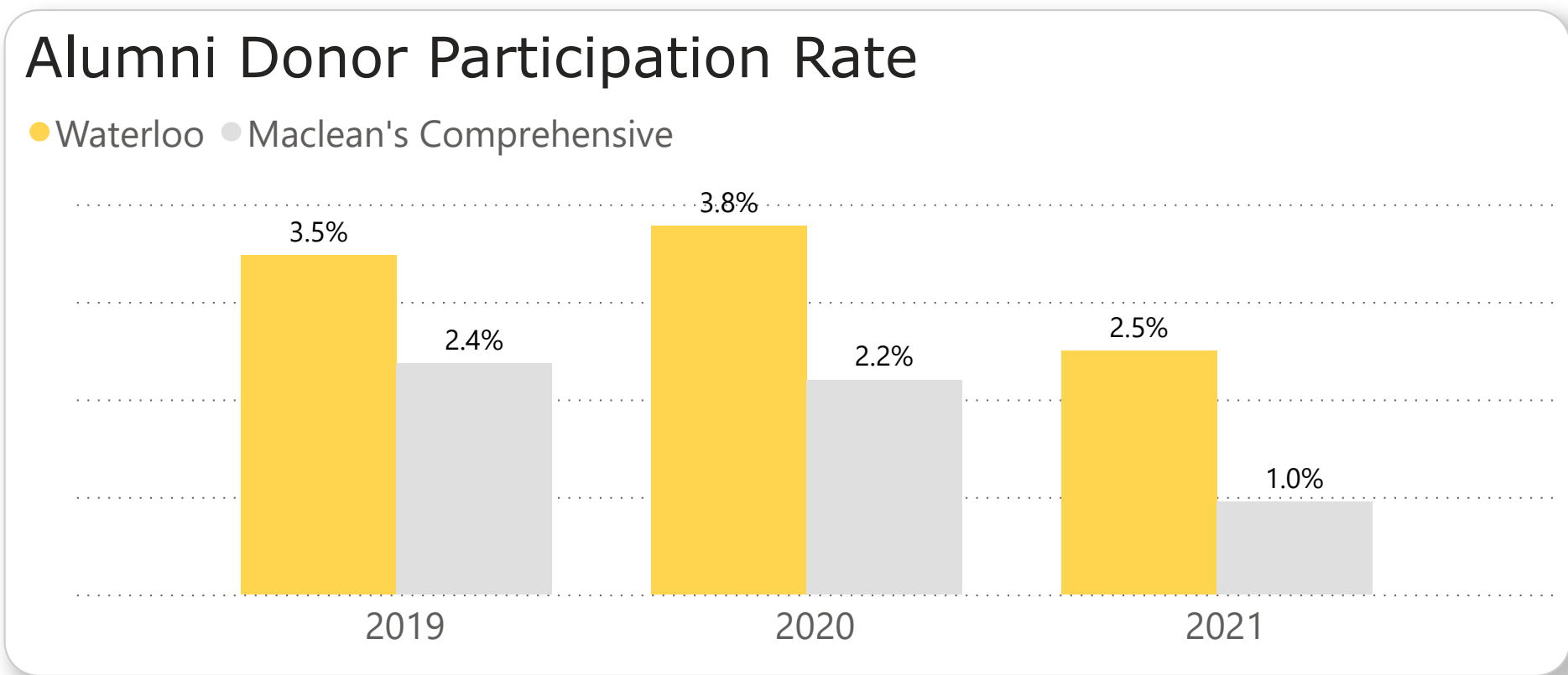
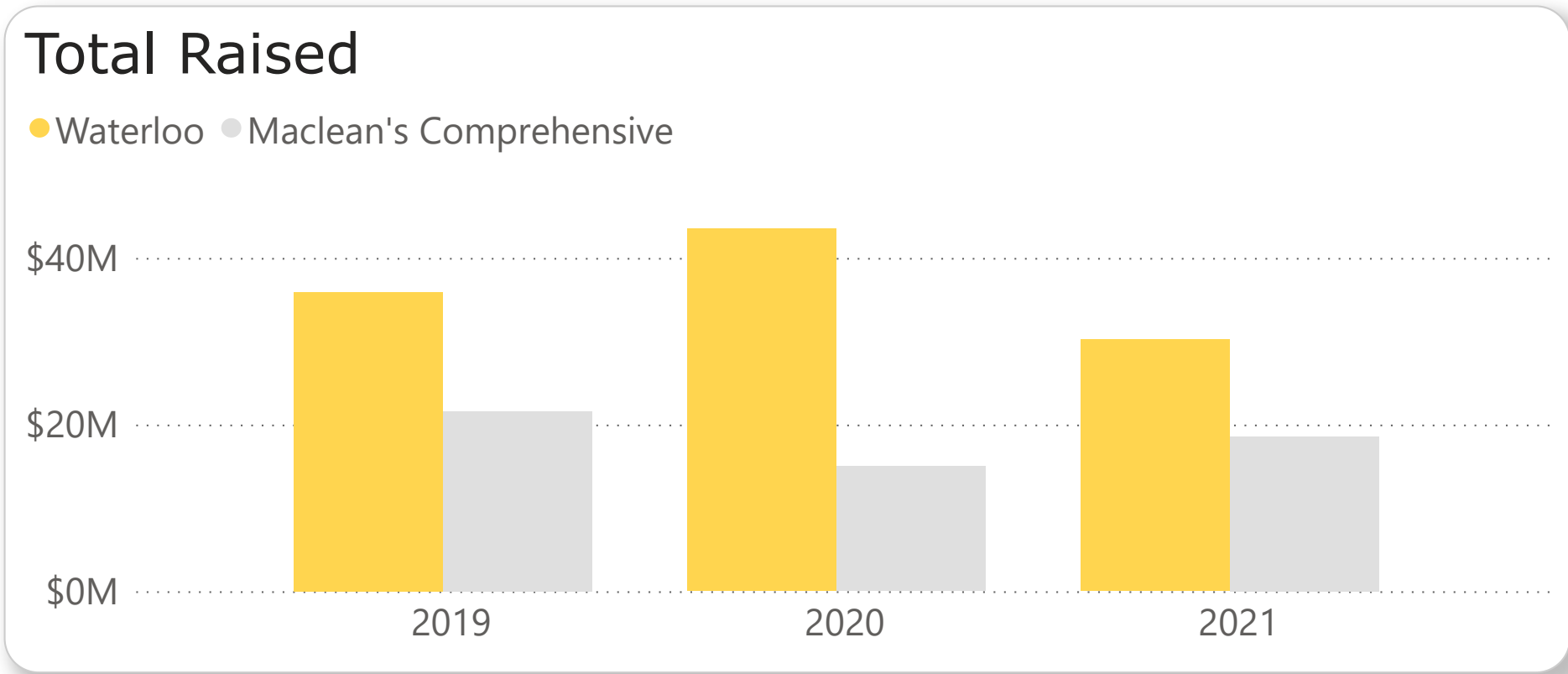
Alumni Engagement



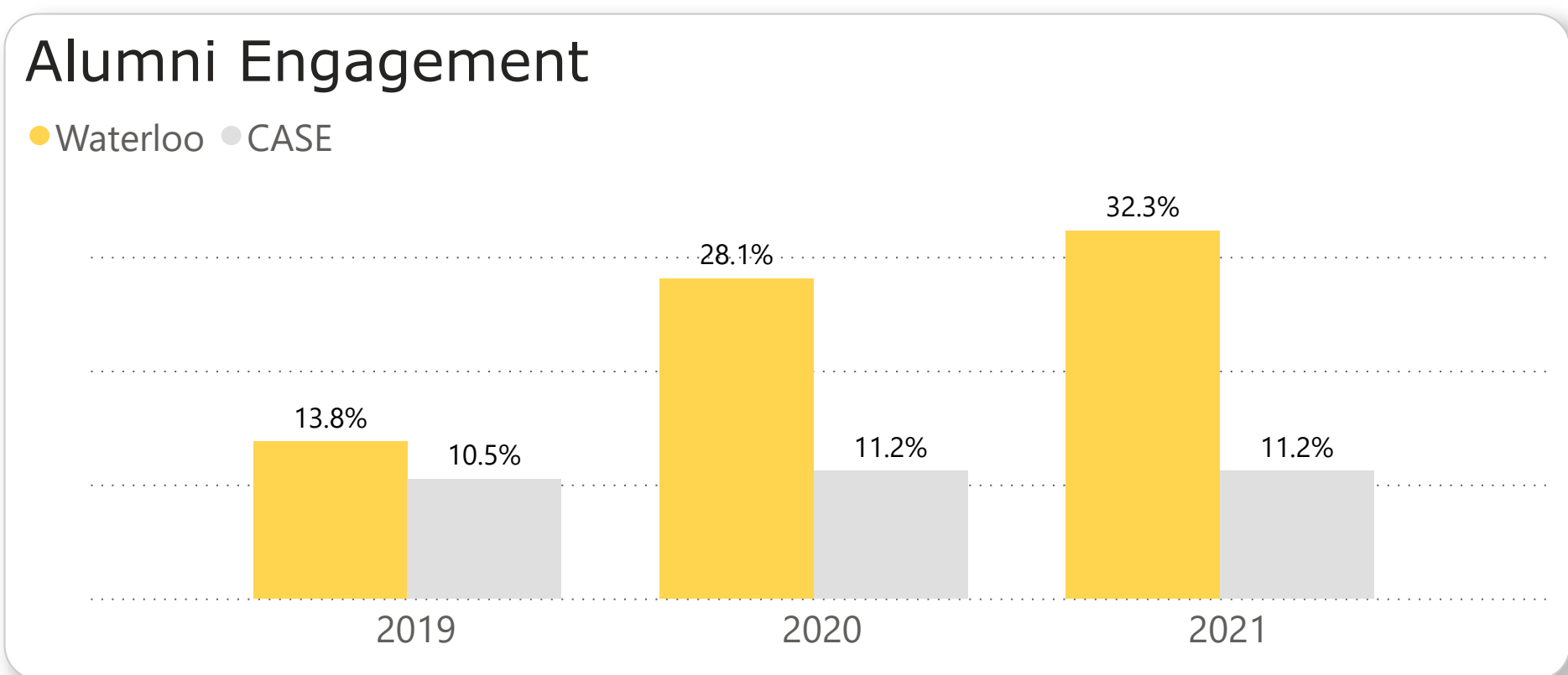
Peer Benchmarks

All years displayed are full fiscal years, May - April

The financial peer group below includes institutions categorized by *Maclean's* magazine as belonging to the Comprehensive University category who completed the Annual CASE-CCAIE Support of Education Survey, which began in the 2018 fiscal year.



The engagement peer group below includes 13 (FY2019), 16 (FY2020), and 22 (FY2021) institutions in Canada who completed the Annual CASE Alumni Engagement Metrics Survey, which began in the 2019 fiscal year.



Canadian University Endowments

Founded 1818-1852

University	Founding Year	2020 Total Market Value	2020 FTE Enrolment
Dalhousie	1818	\$785,847,000	18,614
McGill	1821	\$1,832,385,000	35,552
Toronto	1827	\$3,668,903,000	89,617
Queens	1841	\$1,290,662,000	28,239
Ottawa	1848	\$981,875,000	40,353
Laval	1852	\$219,593,000	35,170

Founded 1877-1908

University	Founding Year	2020 Total Market Value	2020 FTE Enrolment
Manitoba	1877	\$883,487,000	27,624
Montreal	1878	\$374,435,000	57,240
Western	1878	\$1,592,366,000	32,768
McMaster	1887	\$1,346,800,000	35,507
Saskatchewan	1907	\$727,141,000	21,350
Alberta	1908	\$1,889,052,000	39,970
UBC	1908	\$1,856,258,000	57,479

Founded 1948-1966

University	Founding Year	2020 Total Market Value	2020 FTE Enrolment
Toronto Metropolitan University	1948	\$156,439,000	39,028
Waterloo	1957	\$484,377,000	40,143
York University	1959	\$594,333,000	50,243
University of Guelph	1964	\$489,323,000	28,024
Simon Fraser University	1965	\$590,201,000	27,344
Calgary	1966	\$1,057,763,000	33,449

Published, CAUBO Survey of Investments December 2020.

U15 Fact Book: For most of the U15 this would be associated with a November or December 2020 count date. FTE includes both full and part-time students weighted accordingly; TMU, York, and Guelph calculated by applying U15DE FTE calculation to full- and part-time headcounts in CUPA enrolment database. SFU is annual FTE figure from website (<https://www.sfu.ca/content/dam/sfu/irp/documents/fingertip.pdf>)

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University of Waterloo
Board of Governors
FINANCE & INVESTMENT COMMITTEE
and
PENSION & BENEFITS COMMITTEE
Report to the Board of Governors
7 June 2022

This report is submitted following the committee's meetings of 19 and 20 May 2022, for inclusion in the regular agenda.

FOR INFORMATION

1. Investments Carbon Analysis & Disclosures

At its June 2021 meeting the Board of Governors adopted the report and recommendations of the Responsible Investment Advisory Group, and further directed that such actions as outlined in the report be prepared and brought forward on the timelines described in the report.

The exhibit included as Attachment #1 delivers on the action to “prepare base year disclosure and monitor measurement and standards developments” and is the first iteration of carbon analysis and reporting for the pension and endowment investment funds; it is expected that as metrics develop and are anticipated to improve with time, the substance of this report will similarly mature and evolve.

/mg

Michael Ashmore
Chair, Finance & Investment
Committee

Peter Barr
Chair, Pension & Benefits
Committee

INVESTMENTS CARBON ANALYSIS & DISCLOSURES

As at December 31, 2021



Attachment #1 (Regular) - Joint Report
Finance & Investment Committee, and
Pension & Benefits Committee



Responsible Investing Advisory Group

In June 2021, the Board of Governors endorsed recommendations from the Responsible Investing Advisory Group related to the Pension and Endowment investments. These recommendations included:

- Adopt a scorecard approach to carbon measurement including: Total Carbon Emissions, Carbon Footprint, and Weighted Average Carbon Intensity
 - Equity measurements for 2021
 - Fixed income and real assets for 2023
- Carbon footprint reduction targets, for scope 1 & 2 emissions
 - 50% by 2030, relative to 2018
 - Carbon Neutral by 2040
- Recommendations formalized in Responsible Investment Policy, approved by Board in April 2022

Carbon Measurement Process

The University has contracted with MSCI to provide the following services:

- MSCI index data (used for benchmarking)
- Access to ESG Manager portal and carbon data^{*}
- Analysis and calculation of carbon metrics for 2018

^{*}MSCI carbon data is based on reported carbon from individual companies, or is estimated using a proprietary carbon emissions estimation model. MSCI carbon assessments and estimates are generated semi-annually; however due to timing differences and fiscal year cycles, carbon data could lag up to two years.

Carbon Measurements

- Total Carbon Emissions
 - The absolute greenhouse gas emissions associated with a portfolio, expressed in tons CO₂e
- Carbon Footprint
 - Total carbon emissions for a portfolio, normalized by the market value of the portfolio, expressed in tons CO₂e / \$M USD invested
- Weighted Average Carbon Intensity
 - The portfolio’s exposure to carbon-intensive companies, expressed in tons CO₂e / \$M USD revenue

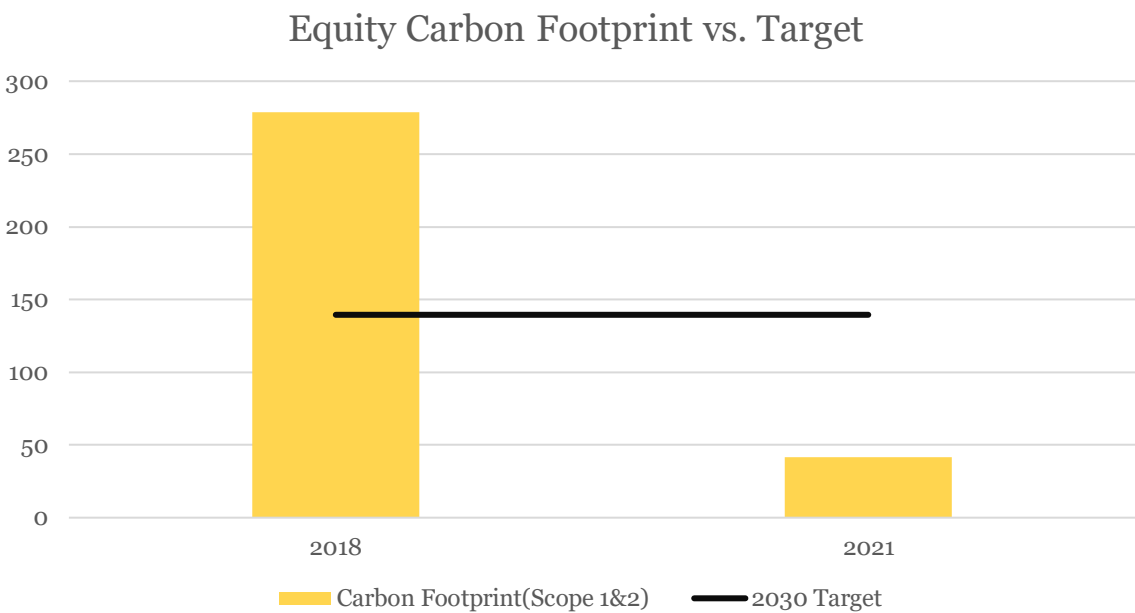
Formula	$\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{issuer's market capitalization}_i} * \text{issuer's Scope 1 and Scope 2 GHG emissions}_i \right)$
---------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------

Formula	$\frac{\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{issuer's market capitalization}_i} * \text{issuer's Scope 1 and Scope 2 GHG emissions}_i \right)}{\text{current portfolio value (\$M)}}$
---------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Formula	$\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} * \frac{\text{issuer's Scope 1 and Scope 2 GHG emissions}_i}{\text{issuer's \$M revenue}_i} \right)$
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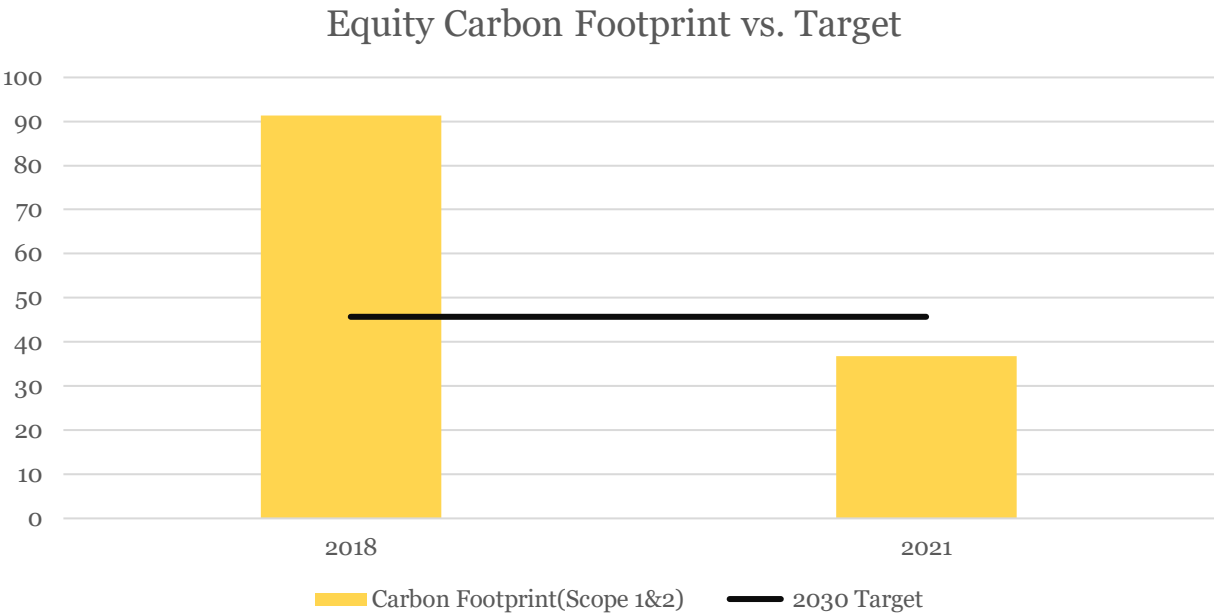
Pension Equity – Scorecard

Carbon Measure	Total Carbon Emissions	Carbon Footprint	Weighted Average Carbon Intensity	Coverage	Equity Market Value (CAD)
2018 Equity Portfolio	123,798	278.8	239.8	96.1%	678,893,000
2018 Benchmark	69,878	146.2	255.8	93.5%	
2021 Equity Portfolio	51,698	41.5	115.6	99.4%	\$1,364,899,000
2021 Benchmark	89,036	71.5	174.1	96.9%	



Endowment Equity – Scorecard

Carbon Measure	Total Carbon Emissions	Carbon Footprint	Weighted Average Carbon Intensity	Coverage	Equity Market Value (CAD)
2018 Equity Portfolio	12,830	91.3	215.8	91.4%	\$205,463,000
2018 Benchmark	22,745	158.7	307.3	93.6%	
2021 Equity Portfolio	10,942	36.8	108.1	97.2%	\$385,758,000
2021 Benchmark	24,754	83.2	171.5	98.2%	



Scorecard Takeaways

Carbon Footprint for equity investments has achieved the 2030 target, 50% reduction

- Please note that:
 - Carbon footprint measurement does not yet include Fixed Income or Real Asset investments
 - Global carbon emissions were suppressed in 2020 and 2021 due to pandemic shutdowns and restrictions
 - There is currently no generally accepted standard for measuring/reporting/estimating carbon emissions

It will be appropriate to revisit the carbon reduction target after the carbon scorecard includes all asset categories and further trending in the carbon metrics are available.

UNIVERSITY OF WATERLOO



YOU+WATERLOO

Our greatest impact happens together.

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University of Waterloo
PENSION & BENEFITS COMMITTEE
Report to the Board of Governors
7 June 2022

This report is submitted following the committee's meeting of 20 May 2022, for inclusion in the regular agenda.

FOR APPROVAL

1. Actuarial Valuation of the Pension Plan, 31 December 2021

Motion: To approve the filing of the actuarial valuation report as at 31 December 2021 with the Financial Services Regulatory Authority of Ontario (FSRA) and the Canada Revenue Agency (CRA).

Background: The University of Waterloo pension plan is an inflation-linked defined-benefit plan. The plan is funded by contributions from the employees and the University, and by investment returns. The total annual contribution is determined by applying actuarial methods with assumptions about investment returns, mortality, inflation and salaries. An actuarial valuation report is required to be filed at least every three years; notwithstanding this, in practice the committee commissions a report on an annual basis for its planning and the University's budgeting purposes.

The 31 December 2021 report shows that the registered pension plan (the "Registered Plan") is in a surplus position on both going concern and solvency bases. The going concern position was in deficit for the 1 January 2021 valuation and with the change to a surplus it would be considered prudent to file this valuation with the regulator.

The University continues to make additional contributions to the plan. Filing of this valuation will also be favourable from a regulatory standpoint and provide a renewed three-year window. See Attachment #1 for a detailed summary of the actuarial valuation results for the Registered Plan. A complete copy of the report can be requested through the committee's secretary.

2. Technical Plan Amendment to the University of Waterloo Pension Plan for Faculty and Staff

Motion: That the Board of Governors approve Amendment No. 8 to the University of Waterloo Pension Plan for Faculty and Staff, as described in Attachment #2 to this report and effective January 1, 2023.

Background: The recommended amendment to the pension plan text raises the nominal pension cap from \$3400 per year of service to \$4000; the pension cap under the plan grows by one-third (1/3) of the percentage increase in the Average Industry Wage, calculated on an annual basis, and with the increases in the *Income Tax Act* limit in recent years the \$3400 cap was reached in 2022. This amendment will allow pensions to be earned up to the *Income Tax Act* limit, or \$4000 plus indexation.

/mg

Peter Barr
Chair

Attachment #1 - Summary of the Actuarial Valuation Results, 31 December 2021

1. Financial Position of the Registered Plan

- a. **Going Concern Basis.** A valuation conducted on a going-concern basis is to determine the relationship between the respective values of the Registered Plan's assets and accumulated liabilities, assuming the Registered Plan will be maintained indefinitely.

	01.01.2021 ¹	31.12.2021 ²
Actuarial (Market) value of assets	\$2,105,435,000	\$2,380,310,000
Actuarial liability ³	\$(2,036,523,000)	\$(2,140,625,000)
Going Concern Position	\$68,912,000	\$239,685,000
Adjustment, Provision for Adverse Deviation	\$(158,269,000)	\$(164,656,000)
Funding excess (unfunded liability)	\$(89,357,000)	\$75,029,000
Market value of assets	\$2,105,435,000	\$2,380,310,000

- b. **Solvency Basis.** A valuation conducted on a solvency basis is used to determine the relationship between the respective values of the Registered Plan's assets and its liabilities assuming the Registered Plan was wound up and settled on the valuation date by the purchase of annuities or the payment of lump-sum values. In accordance with the *Pension Benefits Act*, solvency liabilities exclude certain contractual benefits (e.g., indexing) in order to limit the magnitude of additional funding requirements for solvency purposes. Ignoring these obligations for solvency funding purposes does not alter the contractual obligation with respect to indexing in place under the terms of the Registered Plan (the liability for indexation benefits is reflected in the going concern valuation position and funding requirements).

	01.01.2021	31.12.2021
Solvency assets ⁴	\$2,104,935,000	\$2,379,810,000
Solvency liability	\$(2,423,689,000)	\$(2,363,546,000)
Financial position	\$(318,754,000)	\$16,264,000
Adjustments	\$59,453,000	0
Surplus / (unfunded Deficit)	\$(259,301,000)	\$16,264,000

The additional wind-up liability for indexation benefits is approximately \$818 million at 31 December 2021, resulting in a hypothetical wind-up deficit of approximately \$801.8 million at 31 December 2021 (including indexation). The solvency ratio increased from 0.87 to 1.01 from the previous years' valuation.

2. **Funding Requirements.** Member contributions for 2022 are approximately \$46.4 million, or 8.8% of pensionable earnings. The University's normal cost is approximately \$51.6 million or 9.8% of pensionable earnings. The University will make additional contributions of \$13.8 million in 2022 to maintain its three-year commitment to contribute 12.45% of pensionable earnings. This brings the University's total contribution for 2022 to \$65.4 million.

¹ January 2021 figures reflect discount rate of 5.30% (CPI + 3.30%), and provision for adverse deviation equaling 9.00% of non-indexed liabilities and normal cost

² December 2021 figures reflect discount rate of 5.50% (CPI + 3.50%), and provision for adverse deviation equaling 9.00% of non-indexed liabilities and normal cost

³ The liability figures reflect the adoption of the 2014 Canadian Pensioners' Public Sector Mortality Table (CPM2014Publ)

⁴ Solvency assets are net of \$500,000 in estimated wind-up expenses

3. Asset Mix

Asset Mix (% of Total Market Value) ⁵	01.01.2020	01.01.2021	31.12.2021
Real Return Bonds	0%	0%	0%
Fixed Income, Cash	46%	39%	33%
Equities	45%	52%	58%
Infrastructure	6%	6%	6%
Real Estate	3%	3%	3%
Total	100%	100%	100%

4. Membership Data

Membership Data	01.01.2020	01.01.2021	31.12.2021
Active Members	4891	4905	4851
LTD Members	90	104	102
Suspended Members	2	1	1
Current Pensioners	2092	2176	2315
Deferred Pensioners	584	632	641
Total	7659	7818	7910

⁵ Asset mix is based on the underlying assets excluding in-transit contributions and payments.

UNIVERSITY OF WATERLOO
PENSION PLAN FOR FACULTY AND STAFF

Amendment No. 8

The Board of Governors of the University of Waterloo resolves that the University of Waterloo Pension Plan for Faculty and Staff (amended and restated effective January 1, 2011), Registration Number 0310565 (the “Plan”), is amended to as follows:

1. Effective January 1, 2023, the definition of “Pension Cap” in Section 2.22.1 shall be deleted and replaced with the following:

“2.22.1 **“Pension Cap”** means \$3,400 effective January 1, 2021, increased effective January 1, 2022 by one-third (1/3) of the percentage increase in the Average Industrial Wage, calculated on an annual basis.

Effective January 1, 2023, “Pension Cap” means \$4,000, increased thereafter each calendar year commencing January 1, 2024 by one-third (1/3) of the percentage increase in the Average Industry Wage, calculated on an annual basis.

For purposes of this Section, “Average Industrial Wage” means the average industrial wage as published by Statistics Canada under the authority of the *Statistics Act* (Canada) for purposes of increasing the Year’s Maximum Pensionable Earnings and the maximum pension pursuant to the Income Tax Act.”

CERTIFICATION

I _____, Secretary to the Board of Governors of the University of Waterloo, do hereby certify under the seal of the University that the foregoing resolution was duly approved by the Board of Governors at a meeting held on the ____ day of _____, 2022.

Signature

Date