DISRUPTING THE 21ST CENTURY UNIVERSITY

Imagining the University of Waterloo @2025

A discussion document by:

Feridun Hamdullahpur
President & Vice-Chancellor
University of Waterloo
Preface

Society depends on institutions of higher education because of the integrated platform of teaching and research that readies our citizens to compete on the world stage with new ideas and fresh perspectives. Universities create, inspire and move our society forward. Clearly, we want to be at the leading edge of this mission.

We also live in a fundamentally shifting world that is moving and evolving faster and faster. This shifting is putting constant stresses on every organization, and post-secondary institutions, like the University of Waterloo, are not immune to these pressures.

But, we love challenges! They cause growth and positive, meaningful change in an organization such as ours that welcomes such challenges.

I, thus decided to share my thoughts and observations on how our university has progressed over the past 60 years, how those experiences have shaped our current institution, and how I believe we will help to fundamentally shape the future through groundbreaking research and by educating the best students in the world.

When our university community decided six years ago that it was time to embark upon a strategic planning exercise to prepare us for the next phase of our evolution, we recognized that our past experiences, successes and unique culture was a solid, starting platform. Our proven differentiated impact in Canada and the world was the starting point.

Through our current strategic plan’s eight themes, we have achieved results through which our impact and stature in the world went to levels that we have never seen before: record levels of research funding and our student innovators and entrepreneurs are changing the face of business and creating positive impacts on our society and around the world. Not to mention continued advancements in experiential education. We have continued to grow in size and at the same time attract top undergraduate and graduate students, faculty and administrative talent.

As much as we are proud of who we are and what we have accomplished, we cannot rest on our successes. Complacency will only slow growth and diminish our ability to remain a catalyst for innovation.

We need a further evolution of our culture where creativity is encouraged across the institution, where risk is encouraged without fear of the future and the multiplication of these two elements produce innovation and provide opportunities for everyone.

As we embark on the next stage of our strategic planning journey, we must move forward with a shared vision. I believe that for any of our initiatives to be impactful, we must engage with our community to build a vision and strategy for them to be achieved. This document serves to demonstrate where I believe we can and should go. It is not possible for anyone to see into the future with 100 per cent certainty, but I have seen where we have been and the global community that we are a part of, and I feel confident in our ability as an open and diverse institution to meet the challenges the future holds.

Know that this document is but one step in our comprehensive and engaging process to develop a lasting and inclusive strategy that will propel Waterloo forward into 2025.

I look forward to an open, ongoing conversation on how we can ensure that our culture and models for teaching and research evolve as quickly and dynamically as the world around us.
1. The Challenges We Welcome and Must Meet

The world is speeding up. While change is a hallmark of modern life, the pace is exponential and its effects are far reaching, crossing borders, cultures, technologies and global markets.

Our society is facing revolutions on many fronts: water, food, energy, aging, disease, climate, and social and economic upheaval. Our role as a world-class research and higher education institution is two-pronged. We must provide the best possible platform for our researchers to analyze and seek out solutions to these pressing issues. We must also prepare the next generation of leaders through progressive teaching methods and a focus on cross-discipline knowledge development.

Society comes to us to find solutions to these challenges, but we must acknowledge and examine the challenges we will face in executing our solutions for the future. A future where we see a clear presence and a need for the University of Waterloo.

I often question myself as soon as I make this statement: why? What makes me so confident, excited and ambitious about our role in being a part of and building that future?

As we go through this document, we will find an ample amount of evidence that qualifies us to make that claim. However, it’s also important to recognize that as exciting and ambitious as our vision for the future is, we have further work to do. We see the need to continue building our institution inside-out. We must recognize that as innovative as we have been, we have further learning to do. And, while doing so, we must put our unique University of Waterloo stamp on it. Innovation is integral to everything and everywhere at Waterloo, not just in a few areas. We cannot take it for granted; it must be earned and practiced in all we do, every day.

In doing so, I invite you to ask the following question: are we content with being a really good university with the national recognition of “most innovative” or do we want to be recognized and respected as one of the best in the world?

I try to answer this by imagining Waterloo in the year 2025 when education is focused on exploration of ideas coupled with our world renowned co-operative/experiential education pedagogy in a lively campus environment. An environment that not only lives and breathes innovation but also promotes risk, where it becomes the norm, without which our impact will be limited. After all, our institution started out taking big risks: co-op and creator-own intellectual property policy. These are just two big risks that became synonymous with our culture.

Internal Challenges

Building on our Success: From Towers of Excellence to Networks of Excellence

Moving forward we see the value of staying united in our overarching goals. We are a community that must march together and avoid becoming entrenched in silos. Given the natural division of disciplines and operational departments, it can be easy to lose focus on our long-term, institutional goals. We must fight this conclusion.
Due to the speed with which change is taking place in the world, we should look beyond the current issues in front of us and anticipate the next shift to create the change. To do this, it is important to look at a problem from every angle and anticipate shifts in technology, politics, society, the environment and more to predict where change will occur and direct our resources to drive that change.

In expressing these views, I am keenly aware that there may be questions and concerns about the excellence of depth in many disciplines that we are very proud to consider ourselves as global leaders: from quantum to combinatorics, aging, geography, clinical psychology and nano-engineering, just to name a few.

I too am concerned and fully committed to building our excellence in these disciplines without which we cannot talk about interdisciplinary excellence. I, however, going forward, see the intersection of many diverse disciplines as a natural process to anticipate our response to growing needs and challenges we are or will be facing.

**Making Far-Reaching Impact**

We must also be mindful of the scale of our impact. It will not do to make small, incremental shifts. We must not feel limited by our disciplines, borders or traditional boundaries. In order to make impactful changes to our world and be recognized as one of the top innovation universities in the world, we must drive long-term, far-reaching change.

**Teaching and Research Balance**

Another challenge that came up recently at the President's Town Hall was how we balance our faculty’s teaching and research duties. Yes, I am dedicated to continuing our focus on building a dynamic research institution, but not at the cost of educating our students. We must support our faculty with the tools and consideration for them to be tremendous educators AND researchers who will change the face of their disciplines.

In order to meet these challenges, we must be bold, daring and avoid conformity at all costs. While we will learn from other institutions, we will not aspire to become just like them.

We must do what Waterloo has done for 60 years. We must stand out on our own and go beyond what we are used to doing as academics, researchers, educators, mentors and administrators.

I am conscious of the challenges my faculty colleagues are concerned about, such as, managing time pressures between research, graduate supervision, teaching and making time for family and friends.

Our view of the 21st century education and beyond requires continued interaction between research and education. Our students require being exposed to and inspired by research active/intensive professors. This is one of the key reasons why I will continue investing in hiring tenure-track faculty committed to research, teaching and service.
It is, however, imperative that the University will (and should) provide adequate resources to help optimize teaching and research management responsibilities. Increasing our number of graduate students can provide a portion of the required assistance in achieving this balance. This, however, would not be the main reason for an increase in graduate student numbers.

The challenges before us, both external and internal, are numerous and should be met with the same understanding and dedication that propelled the University of Waterloo onward from its inception to today. We do not shrink from challenges, but push forward with a determination and supportive principles at our core.
2. Our Non-Negotiable Principles

To be bold and push to foster new discoveries and meet the challenges our institution faces, we must try new things and push beyond our comfort zones. However, we cannot do that at the cost of the principles that are at the heart of our deep history, standards for what a university should be and have, in turn, helped the University of Waterloo develop into the world-class institution it is today.

These are the non-negotiable principles that must be adhered to:

- Institutional autonomy/faculty independence/academic freedom
- Strong and impartial public governance
- Decisive and engaged leadership in trend setting
- Commitment to diversity
- Dedication to acting as a hub for regional and national innovation clusters

In addition to these principles, I believe Waterloo must be balanced in its approach. For us, it does not have to be an “either/or” question. We need to be able to combine competing areas of importance. Here are some of them:

- Technologically sophisticated and rooted in our community
  - We will create and use technology for teaching, learning and other purposes. We will not do it to decrease our reliance and connection to our community. We will combine the power of both.
- Knowledge-(research) based and student and learning-focused
  - We will not move forward choosing one at the expense of the other. Research, student development and a dedication to learning will be equally important.
- Increasingly privately supported and publicly accountable and socially committed
  - We will continue our expansion of financial support for our institution through philanthropic and other private sources, while always remaining accountable to the public and dedicated to our responsibilities to society.
- Academically independent and constructively partnered
  - We will not sacrifice our academic independence for a moment, but will expand our strategic partnerships with industry and government institutions in order to develop and provide vibrant research and student opportunities.
- Deep campus/community roots and strong international presence and connections
  - In order to cross borders and make dynamic connections on a global scale we must also remain connected to our local community of supporters and foster an engaged campus.
- Disciplinary and interdisciplinary excellence
  - We are stronger when we work together. This means encouraging cross-discipline and program cooperation in order to produce innovations and solutions that will truly have far reaching impact.
These principles will help guide us forward on all fronts. We must be a community built on independence and inclusivity. We must be passionately entrepreneurial, global facing and balanced in our approach. By doing these things, we will foster a culture built to lead the world into the next decade.
3. Delivering Innovation through Interdisciplinary Collaboration, Talent and Internationalization

I've mentioned the challenges we face as a community and as an institution. To deliver on the societal expectation that a university should be at the forefront of finding solutions to our world’s challenges, innovation must be top of mind.

Innovation is a necessity for a society to move forward and grow. University-based innovation is unique in that it entails building a multi-dimensional cooperation that brings together government, private sector, academic, research and society-at-large to foster new developments that have far-reaching impact.

The University of Waterloo has been at the heart of this unique cooperation and recognized for decades as one of the most innovative universities in the world. To take that even further, we must dedicate ourselves to implementing interdisciplinarity, fostering top talent and building our international reputation.

Shaping the Future through Interdisciplinary Impact

Our university is a highly decentralized institution. Our Faculties have developed a great deal of autonomy, which has allowed them to operate nimbly and independently at times.

While at some institutions decentralization can make it difficult to develop cross-discipline strategies, to plan and even to hire, at Waterloo we see the opposite. There is willingness to find ways to promote cross-disciplinary collaboration and it is important for us to explore the creation of mechanisms and incentives for faculty to participate in interdisciplinarity. I am confident that going forward our decentralized structure will provide a more fertile environment to further such collaboration that will create more multi-disciplinary academic programs and research initiatives.

We are already seeing great examples of this: our skilled researchers in Engineering are working with researchers in Applied Health Sciences to develop new technology that serves our aging population. Our artificial intelligence researchers will be working with our political science and ethicist researchers to provide a full-spectrum for the impact of artificial intelligence on society. There are countless opportunities for cross-discipline projects, and we must provide the environment and build bridges of communication and collaboration at the undergraduate, graduate and faculty levels.

Integrative action that harnesses the best of our core and emerging disciplines is essential. We are doing this now. When talking about Waterloo’s Water Institute, our own George Dixon said, “Transformational research that transcends traditional disciplinary boundaries has deep roots at Waterloo. The Water Institute serves as a catalyst for interdisciplinary collaboration in addressing grand challenges confronting the sustainable use and management of water.”
These collaborations are essential. To be successful, we must transition from disciplinary entrenchment to embracing complexity in order to spark innovation on a large, impactful scale. This requires the interweaving of research, teaching and community impact. But the outcomes can be huge: leveraging powerful intersections of innovation and technology with social priorities in health and well-being as well as environmental, business and economic sustainability.

Like many other innovative, disruptive initiatives, these will no doubt be initiated by our faculty members and strongly supported by our Deans. Our job is to provide them with the environment to establish dialogue and metrics to build their case.

Rethinking the way we integrate disciplines and research is hard work but we do not scare easily. We will engage our faculty, students, staff, alumni and broader communities in dialogue, debates, continuing education and conferences to explore the business, societal and policy ramifications of emerging technologies and workplace disruptions.

**Shaping Extraordinary Talent**

We will nurture talent on a whole new scale. During consultations and discussions with the campus community it has become clear that our biggest point of impact starts with people. Students, faculty, researchers, staff, decision-makers from all sectors and partners believe that deeper, richer, more empowering learning and leadership is where real change starts.

Our co-operative education program is a beacon for universities that strives to balance academic independence with constructive partnerships. It is also one of the key differentiators that sets our students and alumni apart. We are enabling our students to be leaders in their field before they even cross the stage at convocation.

Our graduates are inventors, investors, job creators and citizens as well as business, non-profit, government and academic leaders.

Walk around our campus and you’ll meet a Waterloo entrepreneur who is developing an artificial human kidney. You’ll meet researchers building hip joints with a 3D-printer. There are scientists at the forefront of quantum computing and others who are using artificial intelligence to help detect cancer and to build autonomous cars. Political scientists are uncovering the factors behind the radicalization of our youth. Health economists are identifying ways to save lives with small investments in the developing world.

We must focus on attracting top-performing creators, explorers and boundary-pushers from across Canada and around the globe. Our responsibility is to connect them, challenge them and nurture them in extraordinary ways.

To do this we must also prioritize hiring extraordinary talent. As I said many times, if we have an extra dollar in our budget, I am committed to using it to hire the best faculty members possible, because I firmly believe that top faculty attracts top graduate and undergraduate students. Exceptional talent comes here from every corner of the world.
Shaping the Future with International Strength

If we are going to unlock all the human potential here — and create a home for a diverse collection of one-of-a-kind talent — it is integral to build a community experience that’s welcoming, spirited, nurturing and supportive.

As we continue to transform our impact around the globe, our success will rely on our ability to build international bridges.

The challenges that come with new technologies range from ethical issues to economic upheavals, as well as privacy and cybersecurity issues that have implications for every part of the globe. We must offer our students and researchers the platform to look beyond our borders and build a global perspective. The future is increasingly a global one and the institutions, students, researchers and alumni who recognize this will shape the future.

The University of Waterloo will be the gateway to innovation through international collaborations with other leading institutions that share our willingness to dare and disrupt.

We also know the world needs a new kind of leadership, with talents that span a range of disciplines, skills and knowledge. Waterloo has emerged as a university committed to excellence in education, research and service. Looking forward, it’s clear that the global challenges of today will require even greater co-operation among people and disciplines. While we will always remain true to our local roots, we will expand globally and partner with those institutions that are complementary to the University of Waterloo, sharing similar strengths and vision, but together will open possibilities that we would not be able to do on our own.
4. Tackling Global Challenges

As the University of Waterloo moves forward, leveraging its many institutional strengths, we will shape the future by tackling global challenges that will impact our world for generations. I believe our institution is uniquely positioned to take the lead in meeting them with our fundamental principles, talent and resources.

We see ourselves as an institution that is charged with recognizing and discovering solutions to society’s current and future issues. While we recognize the future will hold many global challenges—and we are open to tackling them as they appear—here are five such issues the University of Waterloo is prepared to undertake now.

Disruptive Computing

The next generation of computing is here at Waterloo. Advancements are giving us access to vast amounts of data that improve lives, even as they pose serious challenges to privacy and security. From quantum computing to nanotechnology, artificial intelligence and cybersecurity, Waterloo will be at the forefront of this sector.

Human-Machine Interaction

We are creating technology that both improves our lives and poses risks to our well-being. As we enter a new age of machine intelligence, researchers are pushing the frontiers of human machine interaction and examining how these machines will affect our health and well-being, economy and relationships. The innovations that will be developed here at Waterloo will forever change the way we live our lives, interact with one another and develop the next generation of infrastructure.

Climate Resilience

We are living in the warmest period in the history of civilization, with humans being the dominant cause of this global temperature rise. As scientists push the frontiers of knowledge about the Earth, we grapple with mitigating the impact of global warming and preventing further environmental deterioration. This challenge will require a truly interdisciplinary approach to create new knowledge with far-reaching global impact.

Healthy Aging

The world’s older population continues to grow at an unprecedented rate. The percentage of people aged 65 and over will double to 1.6 billion by 2050. It does not, however, mean older adults will be living healthier. The shift will mean changes to everything from health care to employment and housing, and will require technological, scientific and policy innovations.
Prosperity and Scarcity

People want access to education, freedom from discrimination and economic growth that creates employment so everyone can participate in decision-making about their lives. Technology and policy innovation has an important role in increasing prosperity and decreasing poverty around the world. Waterloo is uniquely positioned to tackle the issues of prosperity and scarcity on a global scale.
5. Moving Forward with Purpose: Five Priorities for Waterloo

The ultimate purpose of a university is to serve, challenge and enrich society at a scale that impacts individual lives but also enables significant social and economic development.

I believe we can take a radical approach to foster positive change while respecting and valuing our institutional traditions. The two are not mutually exclusive.

In our seventh decade, we want to ensure the University of Waterloo anticipates and responds to the myriad of changes ahead. To become a model 21st-century university, I am suggesting five priorities that I believe are strategically important in developing the 2020-2025 Strategic Plan. These five priorities are not the only way forward, of course. In addition to six issue papers that are currently being crafted to inform the consultations for the next Strategic Plan (see Appendix), my five areas of focus are intended to prompt discussion, community input and greater elaboration in the strategic planning process that will begin in 2018.

The five areas of focus are:

- Building a rich student experience
- Acting as a front door to innovation
- Finding new ways to leverage our resources
- Empowering our people
- Growing the university’s influence and reputation through global level impact

Building a Rich Student Experience

Waterloo’s students are the heart and soul of our institution.

Our globally admired approach to education wraps the student experience in three enriching layers: entrepreneurship, research and experiential/co-operative education. These are all solidly connected to a foundation of academic excellence.

Waterloo alumni are globally oriented, collaborative, conscientious and savvy. This doesn’t just happen. We are deliberate in this talent formation and are setting the stage for greater experiences and new programs. This is essential in building a loyal and engaged alumni right from the first day they set foot on the University of Waterloo campus.

We will introduce more interdisciplinary programs, elevate current programs and develop a more integrated model of experiential education and learning experiences, such as the new EDGE certificate program. We are renewing co-
operative education through a Co-op 2.0 initiative designed to strengthen relationships with government and industry partners, and spur greater investment in research and innovation infrastructure.

Co-op 2.0 will usher in innovations like flexible work terms that allow students a wider range of work experiences, and a new co-op certificate that recognizes students who choose to work in research-focused positions on multiple work terms.

Students who are not part of the co-op program will now have the opportunity to develop workplace competencies through the EDGE certificate program. This program launched in Fall 2017 and will be integral in bringing experiential education to more of our undergraduate students on campus than ever before and will usher in increased opportunities for career development.

The world needs graduates who are ready for the challenges ahead. Our vast alumni community of entrepreneurs, innovators and business leaders are our unique resource to keep pace with rapidly changing trends, wrestle with big industry problems, and identify unique opportunities for blending discovery with commercial application. Through deeper alumni engagement and exchanges, new interdisciplinary programs will be developed at the graduate and undergraduate levels.

The increased demand for undergraduate research internships will lead to new opportunities for greater exposure to research, creating direct impact on the growth of talent needed for Canada’s innovation and discovery agenda.

Almost half of incoming students tell us they want to be part of a new venture. Our entrepreneurial support draws top talent to this institution, so we will develop new entrepreneurial experiences using our internal facilities and expertise while strengthening connections with our accomplished entrepreneurial alumni, mentors and ecosystem partners. We will strengthen our business-focused courses to encourage graduates to lead businesses through multiple phases of growth and change.

Although our students are uniquely curious and entrepreneurial, it is important to recognize that the student experience on campus is a complex one and some of our students and alumni have not had a fulfilling experience in regards to their time on campus.

The National Survey of Student Engagement (NSSE) and Maclean’s have found that our students do not have a deep sense of satisfaction about their time on campus. Improving the student experience must be paramount.

We need to know more about what our students value, how we can exceed their expectations and how we can follow through on delivering a positive university experience. We have a lot to learn directly from our students, and it is time to engage with them more than ever before.
Our ability to draw the best students also depends on offering a welcoming campus experience, including more supports in areas such as mental health, gender equity, indigenization, and improved spaces for social activities and study.

Although we are an active research institution, our students need to have a positive and productive learning experience. This means establishing new learning models that take into account our students’ expectations. As MIT President Rafael Reif said, “If we don’t know how we learn, how on Earth do we know how to teach?”

Our students’ expectations are changing as society and technology changes. During student roundtables, students told me they want flexibility in everything from their curriculum to their learning spaces. We cannot educate the same way that universities have for the past thousand years.

The classroom is no longer a lecture hall, a professor and a PowerPoint presentation. From the clubs they join to their co-op placements, student government, volunteer clubs, residence dons and every aspect of a student’s journey is their classroom. We must develop new teaching techniques that take this to heart when building a rich and fulfilling student experience.

Ultimately, in a competitive environment where every university is trying to draw the best and the brightest, we need to outperform our peers by growing our reputation for academic excellence, experience-focused education, innovation-friendly policies and programs, and full student engagement.

With this competitive environment it is important for Waterloo to continue its work on improving student mental health. This will mean working with the President’s Advisory Committee on Student Mental Health to turn their hard work and recommendations into actionable steps. This may mean providing training for staff and faculty to better recognize when a student is in need, better communicating our current support services to students, and providing additional peer support.

We need to look at the challenges our students face and the causes of undue stress and make imperative adjustments that are in our control such as exam schedules, course structures and co-op interviews.

**Outcome**

We want to be recognized as one of the top innovation universities in the world and to achieve this, students need to be the core of this. By dedicating our time and resources to building a rich student experience we will be able to strengthen and support our current community of students and foster a new generation of engaged alumni. With over 195,000 alumni around the world, Waterloo has a vast community of supporters and we want to ensure that our future students feel engaged and supported the moment they set foot on campus and throughout their entire post-university careers.
Acting as a Front Door to Innovation

To participate in thoughtful responses to future complexities, opportunities and challenges, we will foster our culture of innovation to drive economic growth in new and bold ways.

We will endeavour to be a nationally and globally recognized source for new talent, as well as a destination for ambitious leaders who want to make a difference. We will celebrate the accomplishments of our alumni and engage their insights, advice and mentorship, and promote them as our global ambassadors. We will strengthen student-alumni bonds by delivering programs of value that leverage the dynamic Waterloo network. We will continue to be a primary international source for innovative and relevant ideas and technologies.

From the start, this university’s unique intellectual property policy — that the creator owns the invention — has allowed us to attract top researchers, as well as develop highly entrepreneurial students and extraordinarily successful alumni.

We will look to expand our reputation to attract investment from those who value our model as one that will foster global economic prosperity. In the coming years, we will seek to garner support and investment in four critical areas:

- Broadening and strengthening Waterloo’s innovation capacity and capabilities;
- Better connecting Waterloo with our alumni and our communities, and increasing engagement with national and international innovation opportunities;
- Building additional transformative and innovative infrastructure;
- Contributing to the development of Canada’s national science and innovation public policy.

Waterloo can be the doorway through which the world finds solutions to the challenges that lie ahead. Our Global Entrepreneurship and Disruptive Innovation (GEDI) concept will create a link between universities, industry and disruptive startups in the Toronto-Waterloo Innovation Corridor and develop students into industry leaders. GEDI will create a “front door” for industry to access the innovation taking place on Ontario’s post-secondary campuses and to foster support for the growth of our startup ecosystem.

Huge challenges come with new technologies – from ethical to economic and security issues. The solutions will require a cross-pollination of ideas and disciplines and a stronger understanding of the changing drivers in industry, technology and society.

We will also take this dedication to innovation and look internally at how our faculty and staff can be leaders in their own fields. This means re-examining how we approach emerging projects such as the administration of new programs and internal and external communications.
One of our major purposes is to generate and mobilize research and technology to enhance quality of life and blaze new trails for industry and society. Our reach must go far beyond our region.

Outcome

Waterloo has remained the beacon of innovation in Canada. Through our core differentiators, such as cooperative education, and our dedication to research, we have developed enviable results. By focusing on collaboration and meaningful partnerships, we will make gains in our goal of becoming a global leader in innovation without losing sight of our core, institutional strengths that have supported us over the past 60 years.

Finding New Ways to Leverage our Resources

Although it is less visible, finding new ways to operate and do business is as important and transformative as our other initiatives. As an institution that draws on funding from students, government and industry, Waterloo must serve our students, Faculties and the institution conscientiously, creatively and at a level of best practice.

A great strength of the University of Waterloo is its commitment to financial sustainability. Our new resource allocation model will ensure university funds are managed and invested with maximum impact, reflecting campus-wide needs and priorities. Our overarching purpose is better budget planning and increased transparency that will inform strategic decisions regarding institutional revenues and expenses.

Fully implemented over the next five years, the resource allocation model addresses shifts in demographics and government funding by increasing efficiencies and looking for ways to fund new initiatives through the allocation of existing resources.

Strategic growth in engagement of the University’s accomplished, successful and skilled alumni base, industry partners and business leaders will open up new ideas, volunteer resources, advisory councils and resources to expand our human resources, gain greater financial sustainability and enable faster achievement of our goals and objectives. With a stronger, more involved community of engaged alumni, donors and volunteers, we will create a common mission that is relevant, comprehensive and game-changing.

At the same time, we will continue to engage with our staff on the front line to help us determine where improvements can be found. This is where regular roundtables with staff, faculty and students are so important. We have been able to hear firsthand if a new study space, program or service is actually being used or how it could be improved.

We will build agile evaluation models that take into account qualitative and quantitative metrics to ensure that new and existing programs are assessed fairly and consistently improved upon. Our goal is to keep the dynamic qualities that have made our university successful, especially while it grows in size and global reputation. These qualities have
also allowed Waterloo to develop unique programs that have the potential to find impactful outcomes for students, faculty and society.

We are evolving our enrolment management strategy so that we can continue to attract and retain the best students from around the world. This strategy takes a holistic, informed and collaborative approach by spanning the full student-alumni journey through recruitment, admissions, registration, programming, retention and learning outcomes to a successful post-graduate experience that retains the passion, skills and expertise of our alumni.

**Outcome**

Constant improvement does not mean removing our institutional elements that have made us successful in the past. By dedicating ourselves to developing new ways of leveraging our resources we can become more agile as an organization and prepared for the future. To evolve and grow we must try new systems and technologies, and dedicate our resources to those projects that we believe will enable positive developments. We cannot be afraid to find new ways of doing things. Without it we will miss opportunities that will allow our students, faculty and staff to grow and improve.

**Empowering our People**

Defining our values as an institution is imperative if we are to shape the future as a dynamic community. We need to commit to empowering our people through the expansion of institutional literacy, articulating what Waterloo is trying to achieve, what are the needs of our stakeholders, what’s going on in the post-secondary education sector, what are our competitors doing, providing the opportunities to understand how we fit into the educational landscape and how we all can be meaningfully involved in achieving institutional success.

Our University will also be a more innovative and productive institution if we remain dedicated to building an inclusive environment where our people can reach their full potential.

To that end, we have established an Equity Office with priorities that include gender and visible minority equity, increased supports for Indigenous peoples of Canada, improved mental health initiatives and outreach for students, and more accessible facilities.

In 2015, I accepted an invitation to have the University of Waterloo participate in the UN Women’s HeForShe campaign. As part of this framework, Waterloo has committed to comprehensive, sustainable gender equity with innovative programming that supports everyone from young girls in science, technology, engineering and math (STEM) to women in the University’s senior leadership. Although we have almost met our goal of 30% female full-time regular faculty representation, we will continue to focus on initiatives that attract and retain outstanding faculty, including the development of a positive environment that aims to eradicate discrimination and harassment.
We also want to increase the enrolment and participation of Indigenous peoples in Canada. They have not been well served by Canadian post-secondary institutions, and this is a gross historical inequity. We have created an Indigenization Strategic Committee to address how we can open our doors more fully.

Building exceptional talent requires a positive learning environment that leads to personal and professional success. One of our major priorities will be strengthening and improving student mental health initiatives and outreach.

With input from our local community, other institutions and external experts, the President's Advisory Committee on Student Mental Health is providing exceptionally supportive and candid advice on a coordinated approach to support those students who are in need of assistance. We are not alone among universities in Canada in confronting mental illness, but we want to tackle it head-on and develop a coordinated approach to support our campus community.

Our alumni, of course, are one of the most valuable resources of the University of Waterloo. We are developing a myriad of ways to engage them through knowledge-sharing, networking, reputation-building, mentoring and advisory roles, building on the exceptional successes they have had in business, service industries, politics, academia, and entrepreneurial ventures.

The University’s tremendous staff must also find their work challenging and fulfilling. Our university is situated in one of the most competitive hiring markets in Canada, putting a premium on attracting and retaining talented staff members.

I’ve been told at regular roundtables that staff are eager to develop new skills and opportunities to expand their responsibilities. An engaged and stimulated staff vastly improves retention and productivity levels. Therefore, creating a culture of improvement and cooperation is imperative. Instilling the mantra of “How can we do this better?” is essential in building a community of innovators inside our offices and classrooms.

This culture shift means creating a framework for regularly bringing staff together from different departments to share skills and innovations. Just as our Faculties should work together in an interdisciplinary fashion to foster increased levels of innovation, our administrative and leadership teams should be doing the same — and we will develop programs to do just that.

The university’s faculty must also be supported at every step through their journey. This means providing an environment and facilities that enable them to be teach, be creative and produce leading research.

We all own the challenge of ensuring the success of OUR institution. We need to provide opportunities for everyone to influence decisions and exercise the responsibility to solve challenges. This also involves having a leadership team that is open and actively seeking these insights across our campus and stressing to our teams that we are all accountable to one another, not simply to our boss. We are a community, not a hierarchy.
These are just a few thoughts on how we can empower our people. A more detailed vision will come to life in the 2020-2025 Strategic Plan, which will be developed with the input of our campus community and partners.

**Outcome**

With an empowered staff and faculty we will have their creativity brought forward enabling us to achieve anything we set our minds to and have an outstanding and engaging work environment. Our success is ultimately dependent on a team of exceptional individuals coming together and working toward a shared goal. If we create the atmosphere for our people to succeed, our institution will grow with their shared hopes and aspirations, but we must make that a priority.

**Growing the University’s Influence and Reputation**

The impact and influence of the University of Waterloo has been felt around the world since the mid-1960s, when the university was not yet 10 years old. When a team of computer science students wrote a compiler called WATFOR, it put us on the international map as a top-notch, highly sought-after technology talent engine.

Since those early days, our reputation has expanded with the growth and impact of our students, faculty and researchers. For the past quarter century, this institution has been consistently ranked as the most innovative university in Canada and we’ve made our mark in many global rankings as well.

The international QS World University group has ranked Waterloo in the top 25 in the world for graduate employability rankings, and first in Canada for both partnerships with employers and employer/student connections. The annual Pitchbook University's report ranks Waterloo first in Canada for venture capital-backed entrepreneurs, while Waterloo is also the top university nationally for unicorns — entrepreneurs who have founded companies that are valued privately at $1 billion or more. Our faculty garner reams of prestigious awards and honours from Royal Society Fellowships to Killam Prizes. Those speak to the range and quality of Waterloo’s research and scholarship.

These rankings are a fantastic way to inform us on our place in the global higher education landscape. We have a lot to be proud of, but we can always look for improvements. It has been discussed in a roundtable that while we are strong in innovation, research and entrepreneurship, we must also make Waterloo a more welcoming and inclusive community. Our reputation is not strengthened when our alumni and current students do not feel they are having a fulfilling experience during their time on campus. We must make an enriching student experience, in addition to an engaging staff and faculty environment, an ongoing priority or our reputation to attract talent and students may suffer accordingly.

Our goal in the coming years is to continue to grow our impact and influence around the world by strengthening our research prominence, global reputation and internationalization efforts in the following ways:
• Creating opportunities for visible thought leadership, advocacy and expert opinion at national and international tables;
• Engaging our alumni as active, informed, passionate ambassadors, advisers and supporters;
• Engaging our ecosystem and community in the life of the university;
• Strengthening and creating national and international volunteer advisory bodies to provide relevant and timely insights, advise on strategy, advocate on behalf of the university and help secure funding for vital projects and growth initiatives.

*Outcome*

If we are dedicated to finding new ways of leveraging our resources, enhancing the student experience and being home to the best faculty and staff in the world, our international rankings will be strengthened in due course. When our rankings improve we will be better positioned to attract top talent across the board and continue to build our university into a global innovation power.
6. A Springboard for Momentum

This discussion paper on Waterloo’s future is built on the foundation of our distinguished past but also on the tremendous momentum we have gained in our collective push to be recognized as one of the world’s top innovation universities.

We are a community like no other. We are unique, bold and fearless. But this is our institution and it is our duty to not rest on the laurels of our past, but to plan for the future. We must train our students for the future, support and equip our researchers to create the future and help shape the future of our society.

This vision is a starting point, and we want to engage our community in a broad consultative process to define our objectives and set the targets and milestones we will use to measure our progress as we drive toward the year 2025.

With that in mind, at the end of this strategic plan in 2025 what I would like to see is:

1. Academic programs, at all levels, that provide students with the highest levels of competence, knowledge, confidence and personal growth. These programs will further encourage depth, curiosity and creativity through conventional, technological and any other means we are able to/should develop. Flipped classrooms, online learning and learning tools and research exposure/experience are a few things that come to mind.

More flexibility and freedom of program choices across various disciplines. Maintaining and increasing the level of quality, but, at the same time, removing any barriers that limit this flexibility would be desirable and essential.

Of course, right at the heart of this lies our very fundamental differentiator of cooperative education. I want to ensure that this unique, global strength at Waterloo will further penetrate into everything we offer to our students and further drive our mission forward.

2. New networks of integrated research/knowledge: university research centres and initiatives that bring excellence in various areas together to make long term and significant impacts on the world.

3. A more stable financial structure that will enable our university to take advantage of future opportunities, while safeguarding against unknown challenges down the road.

4. An increasingly intellectual, collegial and social environment that draws the best minds from across Canada and around the world to our campus and create enthusiastic alumni.
5. Significant growth in the number of University of Waterloo originated entrepreneurship activities, including startups. This means encouraging the growth of these individual activities to accelerate our trajectory as an innovation hub for Canada.

6. A strengthened connection between the University of Waterloo and its historical cooperation and valued relationship with the affiliated and federated institutions, Conrad Grebel University College, Renison University College, St. Jerome’s University and St. Paul’s University College, and local institutions such as the Perimeter Institute and the Centre for International Governance Innovation.

The University of Waterloo will emerge as a premier model of a 21st-century university — an institution that brings together world-class academic strength, leading-edge research, experience-rich learning and a highly networked entrepreneurial culture that ignites curiosity and enables bold ventures. I hope that my thoughts, observations and aspirations that have been detailed in this document can be a primer to bring others into the conversations to build a powerful, collective vision for our institution as we move forward to shape the future.

Together, we will find new opportunities and possibilities that transcend entrenched boundaries and silos. Together, we can go further than we ever imagined possible.
Appendix: University of Waterloo Strategic Plan 2020-2025
Issue Papers

Advancing Undergraduate Learning

The community is invited to engage in brainstorming ways of building on current student learning initiatives, as well as re-imagining undergraduate learning. Initiatives related to undergraduate learning may include building on current teaching successes, exploring different approaches to student assessment and program requirements, emphasizing individual needs and flexibility, thoughtful ways of exposing students to multiple disciplines, exploring the use of technology in teaching and new teaching methods (e.g., flipped classrooms, problem-based learning, module-format and others), and identifying learning outcomes that reflect Waterloo's undergraduate excellence and meet the needs and expectations of students.

Developing a High Quality Learning Environment for Waterloo Students

A high quality learning environment is fundamental to Waterloo's mission. Topics may include creating an overall sense of community on campus, comprehensive engagement of our students from first year through graduation, and at different levels of their academic careers, and facilitating a desire for students to achieve their own long-term life objectives. Other topics may relate to existing strategic initiatives that include: creating a learning environment that enables students to achieve their potential while promoting their health and well-being, identifying the components of a high quality learning environment, how to implement supports and promote access to students, and aligning strong academic processes with effective supports (for example, early risk identification, etc.). There may be an opportunity to coordinate research efforts and support the work of the President’s Advisory Committee on Student Mental Health.

Re-imagining Graduate Studies

Graduate studies are vital to Waterloo’s research mission. Issues to explore may include building a brand around the graduate experience, enhancing research through graduate studies, balancing undergraduate and graduate student experiences, non-academic pathways for graduate students and graduate outcomes, co-op and other non-academic experiences for graduate students, and developing a distinctive Waterloo post-doc.

Research Excellence and Crossing Disciplinary and Institutional Boundaries

Research excellence drives Waterloo to be a world leader and exists in both disciplinary and cross-disciplinary ways. Waterloo's future development lies at the intersections of disciplinary and institutional boundaries, collaborative approaches and idea generation that crosses academic boundaries. Research excellence is visible both through traditional outputs and championing meaningful interactions between researchers exchanging ideas. An issue paper may explore models for stimulating multi/cross/inter disciplinary work in teaching and research, the role and contributions of institutes, and integrated scholarship and science.
Advancing Internationalization

Waterloo is committed to internationalization. Developing/confirming a working definition and overarching goals for Waterloo may be a good starting point. It would be important to place strong emphasis on the relevant research context. An issue paper may also explore opportunities for campus members (students, faculty, staff, alumni) to participate in international experiences, and how Waterloo may support and facilitate internationalization at home, abroad, and through research partnerships.

New Ways of Doing Business

Finding new ways of doing business will allow Waterloo to operate more efficiently and effectively in serving our students, faculty and staff. This issue paper will explore the opportunities available to our institution in building an inclusive, equitable and optimal organization.