Waterloo Bridge to 2020

Graduate Studies

May 2018

Executive Summary

This paper intends to summarize the work done by the Graduate Studies Issue Paper Advisory Group. The goal of this group was to identify and provide substantive background on issues facing graduate studies such that conversation can be facilitated among campus stakeholders. The summary provided here is informed by three primary sources: a wide-ranging literature review; consultation with peer universities through Education Advisory Board; and the knowledge of the Advisory Group members. Through our work, several overarching research questions evolved. Each is discussed in detail here.

How can Waterloo attract and retain the best graduate students, and facilitate the best support possible?

The concept of a "student funnel" is often discussed in higher education. Conceptually, the funnel reflects the narrowing of the pool from a large number of potential applicants, to those who do apply, to those who receive offers, and finally, to those who confirm and attend. Naturally, this process is strongly influenced by student experience; those who excel at a university are likely to both generate positive recognition for the university and become ambassadors for that university, broadening the initial applicant pool. This research question intends to explore the best practices in the initial stages – marketing, recruitment, and retention – of the graduate student funnel to understand where opportunities may exist to grow Waterloo's graduate enrollment, in both quantity and quality.

The literature review conducted for this research question suggests that most graduate students make their decisions on places to study based on the quality of the program, the potential career outcome, the affordability, and the relationship with their supervisors. Generally, digital media remains the strongest asset in marketing and recruitment (M&R); the literature is less conclusive on the use of social media. The literature also advocates for the use of data to manage the recruitment process – to identify target markets, to evaluate the success of initiatives, and to understand students' reactions to M&R efforts. Commonly identified elements of successful M&R are communication and relationship building between (potential) applicants, programs, and supervisors. More specifically, the use of Customer Relationship Management (CRM) software as both a data analysis and a relationship monitoring tool is widely recognized.

Attrition in graduate studies is less impactful than at the undergraduate level. Data from Waterloo suggest that in the past three years, 361 master's students and 136 PhD students have voluntarily withdrawn. Of those withdrawing, only 27 students cited financial reasons that motivated the withdrawal. The most common reasons were personal (192), work – found job (119), program – wrong fit (103), and medical (48). According to the 2016 Canadian Graduate and Professional Student Survey (CGPSS), more than half of respondents did not identify any obstacles to their academic progress, but 25% did identify work/financial commitments as a major obstacle to their academic progress. In addition, for both the 2014/15 and 2015/16 fiscal

years, Waterloo ranked first among the U15 Group of Canadian Research Universities in regards to financial support provided to both research Master's and doctoral students.

How can we build a distinctive approach to the graduate experience at Waterloo?

When selecting among graduate schools, potential applicants have a host of options. It is necessary for universities to be able to differentiate themselves from peers – particularly in the area of student experience. The goal of this research question was to understand how other universities create an environment that promotes positive student experiences which, in turn, can support the initial and final stages of the funnel.

The process of identifying the issues of most importance to graduate student experience included an analysis of the results of a recent survey conducted by the Graduate Student Association (GSA). Not surprisingly, the most important issues for graduate students are space, wellness, funding, and the quality of relationship with university administrators –faculty (including supervisors) and staff. For the first point, dedicated graduate student space and facilities are issues that have been identified in multiple forums. Best practices at peer universities include dedicated space for graduate and professional students. For example, Virginia Tech reported the creation of a Graduate Life Center, a hub providing "collaborative and study space, support services, housing and dedicated graduate programming."

On wellness, our work coincided with a report on graduate student mental health that suggested: "that graduate students are at greater risk for mental health issues than those in the general population. This is largely due to social isolation, the often abstract nature of the work and feelings of inadequacy, not to mention the slim tenure-track job market." (Evans et al. 2018) Our Advisory Group is eager to work with the other groups to articulate unique considerations and solutions for graduate students' mental and overall health.

The literature also identifies that current and future graduate students are eager to engage in extensive professional development (PD) opportunities. The Canadian Association for Graduate Studies' 2008 report argues that universities are responsible for providing graduate students with the best possible preparation for their future roles, and that this responsibility extends to the development of professional skills. The report highlights four skill areas (communications skills, management skills, teaching and knowledge transfer skills, and ethics) as having a higher likelihood of implementation success in universities. A 2016 study reported that the most popular workshop session themes were found to be the following: career planning, ethics and copyright, networking and job searching, presentations and public speaking, project management, software and online branding, teaching, and writing for grad school.

In peer universities, several best practices have emerged around PD, including: introducing formal mentorship programs with influential alumni; hiring dedicated staff to concentrate exclusively on graduate student PD; creating a culture where graduate student PD is celebrated by all members of the university community; and embedding professional development opportunities in graduate students' curricula. Professional development goals can also be achieved through formal and informal experiential learning opportunities. One peer university convenes an external industry advisory board to oversee all external graduate student issues.

Waterloo data from the Canadian Graduate and Professional Student Survey (CPGSS) indicate that 51% of respondents perceive their quality of student experience as either very good or excellent. Interestingly, about nine in 10 Waterloo graduate students report good, very good or excellent interactions with staff; about eight in 10 chose the same categories for academic advising. To catalyze positive relationships between supervisors and students, several best

practices have been identified. First is the recurring training of supervisors, which is mandatory at multiple peer universities. Second is the use of "supervisory agreements" that establish common expectations at the onset of the student-supervisor relationship.

Despite substantive programming through Waterloo's GRADVenture program and the Centre for Career Action, only about half of CGPSS respondents overall felt prepared to "begin a new job tomorrow." Finally, 44% rated the quality of the support and training that they had received (advice/workshops) surrounding career options outside of academia to be either fair or poor.

How can we engage graduate students in impactful research?

The literature suggests that students pursuing graduate studies often do so to achieve impact; they wish to make substantive changes in their fields of study. The literature also indicates that students are in some cases seeking to customize their areas of inquiry to achieve their personal goals. These observations present several opportunities, and challenges.

When a supervisor considers a student as a vehicle to advance the supervisor's research agenda, they may devote insufficient attention to the student's academic, professional and personal goals. This practice may stem, at least in part, from the evaluation metrics that are in place in most research intensive universities. The literature reviewed did not address the assessment of research productivity and impact from the perspective of incorporating graduate students' goals and objectives into faculty members' evaluations. No best practices were identified from peer universities. More research is necessary here.

Our Advisory Group also spent considerable time talking about achieving meaningful interdisciplinarity in research. The Committee on Facilitating Interdisciplinary Research and Committee on Science, Engineering and Public Policy states: "Interdisciplinary research (IDR) is a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice." In a 2014 report for the Canadian Association for Graduate Studies, Hall outlines four types of interdisciplinary graduate programs (IDGPs) that exist in Canada: individually designed programs, direct entry programs, supplementary programs (which are called collaborative programs in Ontario, and interdisciplinary specializations in Alberta), and non-degree programs (such as certificates). Functional obstacles to interdisciplinarity include: difficulty establishing a common language among students of different backgrounds, budgetary impediments, resource allocation and funding hindrances, and program advocacy (whereby interdisciplinary programs are often seen as being in competition with the department).

One successful model is at the University of Alberta, where students have the option of completing an interdisciplinary or hybrid graduate degree. If students' research interests align with two or more academic departments, they may submit a two-page proposal to apply to work with administrators in designing a hybrid degree for themselves (students must also hold a superior academic record and significant experience in at least one of the proposed disciplines). The University of Waterloo also offers a [joint interdisciplinary program](#), though uptake is limited. Within the context of our institution, according to the Canadian Graduate and Professional Student Survey (CGPSS) conducted in 2016, slightly less than half of Waterloo respondents (48%) reported feeling supported to participate in interdisciplinary work.

Questions

- What is the appropriate size and composition of Waterloo's graduate program?
- How can Waterloo attract and retain the best graduate students, and facilitate the best support possible?
    - Does the University community see value in prioritizing and working collectively to coordinated marketing and recruitment for graduate students?
    - If so, what is the most effective way to engage faculty, staff and alumni in the M&R process?
    - What resources are necessary to implement data-driven tools to inform M&R decisions?

- How can we build a distinctive approach to the graduate experience at Waterloo?
    - Does the University see value in allocating resources to enhancing the graduate student experience on campus?
    - If so, are the strategic objectives of student wellness, access to enhanced space, professional development, and experiential learning the appropriate priorities?
    - How should responsibilities be prioritized and distributed to advance these goals?
    - What are ways in which we can ensure that our graduate students are receiving consistent and uniform interactions with supervisors, departments and Faculties as support systems?
    - Do existing faculty metrics recognize and reward those supervisors who facilitate or catalyze both traditional and non-traditional graduate student impacts?
    - If not, is there a willingness to explore the use of novel faculty evaluation metrics that incent and reward students' achievements?

- How can we engage graduate students more meaningfully in impactful research?
    - What challenges exist that may preclude engagement in and advancement of interdisciplinary research on campus?
    - Are there curricular or other structural changes to academic programs that can motivate, incent and reward more impactful research practices?

Waterloo Bridge to 2020

Student Learning Environment

May 2018

Executive Summary

The purpose of this issue paper is to stimulate campus discussion around the University of Waterloo's learning environment.

Before Waterloo can address how to build a high quality learning environment, there needs to be a fundamental commitment to honouring students and their learning development. The Learning Environment Issue Paper Advisory Group strongly articulated their belief that Waterloo's student learning environment is a vital component of Waterloo's success as an institution, and that our institutional values need to reflect this position. The members proposed the following **value statement** to be put forward for discussion among the Waterloo community:

> *Achieving a positive learning experience requires a proactive community that demonstrates and encourages genuine care, concern, and respect for students and all members of the university community.*

The group ultimately determined that the proposed value statement be presented with **three outcome areas** that will serve to promote a 'call to action' for discussion, revision, and ultimately, for endorsement:

- Student support
- Student involvement on campus
- Learning culture

The next phase of the strategic plan should determine whether or not this value statement resonates with the larger community. If it does, the next question is whether the three categories are representative of the value statement, and whether anything else needs to be included. Examples of questions that could facilitate this discussion include:

- What changes do we want to see in the learning environment?
- What would ideal student relationships, support, and student involvement look like?
- What would assure us that the values of the institution are being applied?
- How could you, as an individual, contribute to ensuring that this value statement is enacted?

Based on feedback from the community, the new strategic plan should refine the value statement areas/outcomes to contain indicators against which change can be evaluated, so that these can guide the direction that Waterloo will go.

Current context for student learning at Waterloo – our take

Waterloo has a long-held reputation of excellence as an institution of higher learning. At the same time, the learning environment at Waterloo is perceived as suboptimal. Issue group members noted that there is a perception of significant competition among students that

negatively impacts student-to-student relationships, and that some members of Waterloo's faculty do not consistently act in a supportive manner towards students. Waterloo's co-operative education also provides a challenge for the student environment, as it means that a large proportion of students are frequently spending four months away from campus, which may create a fractured relationship with the university community.

Waterloo monitors the quality of the learning environment through several surveys including the National Survey on Student Engagement (NSSE), National College Health Assessment (NCHA), and Canada University Survey Consortium (CUSC). Internally, Waterloo also conducts the Canadian Graduate and Professional Students Survey (CGPSS) with graduate and professional students.

In many ways, students at Waterloo demonstrate excellent learning and achievement outcomes, compared to students at other institutions. For example:

- Fewer undergraduate students at Waterloo experienced interruptions to their studies and delays in completing their program;
- A higher proportion of Waterloo undergraduate students had a grade of A- or higher, received financing from co-op, internships, or other financing opportunities, and were employed full-time after graduating:
- The majority of undergraduate students were satisfied with their decision to attend Waterloo and recommend it to others; and
- Two thirds of Waterloo graduate students rated their relationships with the faculty as very good or excellent.

Altogether, these results suggest that students at Waterloo are more successful in certain areas than their counterparts in other universities across Canada, and are highly accomplished and relatively satisfied. However, other data provide further insight into the lives of students:

- Over half of first-year Waterloo survey respondents indicated that Waterloo places *quite a bit* to *very much* emphasis on overall well-being compared to less than half of graduating year respondents. Compared to Ontario peers and universities in the U15/U6, Waterloo's results are significantly lower, although the actual effect is very small for both first-year and graduating-year respondents.
- About three out of four first-year undergraduate survey respondents were satisfied (*satisfied* and *very satisfied*) with the concern shown to them by the university, compared to about half of graduating year respondents. The satisfaction with concern shown by the university among Waterloo's graduating year student respondents is significantly lower than that of other Ontario's graduating year students.
- Results from a 2016 survey demonstrate that Waterloo students and those at other institutions across Canada report nearly identical frequencies of physical, mental, and social health issues. At Waterloo, almost four out of ten students met recommendations for moderate-vigorous exercise; a quarter felt things were hopeless; one in six felt so depressed it was difficult to function; almost a third felt very lonely; over half felt exhausted for reasons other than physical activity; and more than a quarter felt overwhelming anxiety.
- Just over half of graduate students rated the advice on career options outside of academia as *good*, *very good* or *excellent*.

In contrast to the results of academic excellence and satisfaction, answers to survey items related to physical, mental, and social health expose conditions of unhappiness and distress. The Issue Paper Advisory Group did not believe that Waterloo should be content with having our students report satisfaction with a learning experience that is "as good as" other universities in Canada, and that Waterloo should seek to offer a student experience that is of higher quality. A review of the literature on best practices of the learning environment reveals that students can be empowered by their surroundings in multiple ways, and that these initiatives can further improve academic success.

A further look at the outcome areas

To support the value statement, the Issue Paper Advisory Group worked to identify key, visible outcomes that would demonstrate that the value had been achieved. These outcomes could eventually serve as benchmarks for institutional change. The values statement is operationalized by action in three areas:

Student support

For students to benefit from the learning environment, there needs to be widespread awareness and accessibility of services offered on and off-campus. Service support and awareness should also extend to faculty and staff members, who can work together to enhance student services and reduce individual work burden. Ideally, students should want to stay on campus for subsequent degrees, after class, as alumni, and/or to work.

> Best practices for consideration: access to person-centered counselling/advisory services can promote success; service delivery models that are proactive, preventative, and easy to navigate improve accessibility

Student campus involvement

The way students engage in and experience the learning environment is an essential representation of the learning environment. The group declared that student voices should be heard across the community of Waterloo, and they should feel that their involvement on campus is worth their time. Students should feel comfortable in approaching faculty and staff with their needs, embodied by an "open door" policy that directs students to the services they need no matter where they access them. This would also be reflected by increased participation by students and faculty in student-focused initiatives such as on-campus lectures, Faculty/program activities, student leadership, and community engagement activities.

> Best practices for consideration: in general, enthusiastic, compassionate, and respectful attitudes have been identified by students as important characteristics of faculty members; discussions with faculty/staff about career plans and content from outside readings, working with professors on research projects or activities outside of class

Learning culture

The group contended that Waterloo should celebrate learning in small ways, while also acknowledging that the process of learning is inherently difficult. A challenge that has been identified at Waterloo specifically is a "culture of competition," wherein students are encouraged to compete and succeed over others. Maintaining a balance between co-operation and achievement and celebrating the success of others would strengthen the community at Waterloo and reduce unnecessary stressors among students.

Best practices for consideration: academic skill-building interventions that build on motivation and emotional regulation, such as workshops for study habits, learning strategies, and test-taking strategies; first-year seminars, hosting events on intellectual discourse, celebrating diversity, and providing opportunities for research can increase student engagement

Overall, the Issue Paper Advisory Group hopes to consult with campus on the value statement and supporting outcome areas. By initiating a conversation on institutional values within the campus community, Waterloo has an opportunity to innovate its approach to student learning and build a stronger community in the process.

Waterloo Bridge to 2020

Undergraduate Learning

May 2018

Executive Summary

Our environmental scan of best practices in teaching and learning at the post-secondary level confirms that Waterloo is doing well on a number of fronts. Many ongoing practices that promote deep learning for our students emerge from individual Faculties through a host of initiatives, for example, senior capstone projects, problem-based learning, incubators, implementation of a large variety of technologies to support teaching and learning, and so on. Centrally, the work of our Centre for Teaching Excellence (CTE) has been instrumental in awareness building and special programming for instructors in course design, assessments and high impact practices (HIPs), etc.

Our co-operative education program is widely recognized as being our most impactful HIP. At Waterloo, co-op adds value to the learning experience at a scale that no other institution can match. There is promise that the fledgling EDGE certificate will also provide additional value to the learning experience for students who do not participate in co-op. However, experiential education is more than simply co-op and EDGE on this campus, and the broader spectrum of experiential education is an integral part of many of our academic programs (e.g., internships, labs, clinics, capstone courses, etc.). In select programs, experiential education is built into the curriculum design and intentionally scaffolded throughout a student's degree program. In other instances, individual faculty members include experiential learning activities in their courses as part of their pedagogy to enhance student learning and motivation.

The competitive landscape for the best undergraduate students means that Waterloo cannot afford to rest on its laurels. Within higher education, the dominant paradigm continues to focus on teaching while there is an ongoing and increasing push to focus on learning. As an institution, Waterloo appears ready to make a transition from operating within a *teaching paradigm*, where the focus is on what teachers do, to the *learning paradigm*, where the focus is on what learners do. This is where we need to go as an institution. While some of our individual faculty members have already made this transition, for widespread adoption to happen so that we can call this the norm at Waterloo, many more changes in individual practice and institutional support need to occur. Moreover, as more post-secondary institutions seek to provide experiential learning opportunities (especially the set of experiences referred to as Work Integrated Learning or "WIL"), Waterloo will need to determine how to maintain its world leadership in co-operative education and how to effectively educate policy makers on the important quality indicators associated with work-integrated learning.

We propose an **institutional vision statement for learning**… *Waterloo as a university where learning is powered by curiosity, informed by research, and transformative in practice.*

Adopting five evidence-based principles of effective teaching that are particularly relevant to Waterloo's context will enable us to achieve the learning process as characterized in the vision statement. At Waterloo, effective teaching (1) uses alignment in course and curriculum design;

(2) fosters motivation; (3) embodies inclusivity; (4) encourages deep learning; and (5) enables lifelong learning.

A sampling of Waterloo's strengths and challenges is provided to help understand the current institutional context before we share ideas for specific initiatives that would allow us to achieve the aspirations of the vision statement for learning. These initiatives can be distilled into five strategic priority areas: (1) teaching and curricular innovations to encourage creativity; (2) student-led initiatives to empower our students; (3) assessment of learning to provide positive and productive learning experiences; (4) institutional infrastructure, policy, and practice to promote quality and remove barriers to flexibility; and (5) advancing experiential education as an integral part of the Waterloo experience. This issue paper concludes with a selected list of proposed initiatives as a starting point for a more in-depth discussion of each of the five strategic priority areas.

Waterloo Bridge to 2020

Internationalization

May 2018

Executive summary

In an increasingly interconnected and complex world, infusing global perspectives into decision-making and catalyzing collaboration across borders are vital to societal well-being. However, recent global trends – such as the rise in nationalism, xenophobia, and sectarianism – have served to encourage narrow-mindedness and insularity. Thus, the gap between what is required and what exists is large and widening.

Given this, the need for universities to make a contribution is perhaps more important now than ever. It is critical that universities commit – wholeheartedly – to the ways in which internationalization can serve to advance their core mission of teaching, research, and service for the public good. Not only does the world need the graduates, discoveries, and contributions that would result from these activities, but the world also needs this example of global engagement and leadership, so that others can be inspired.

Evolution of internationalization in higher education

Globally, early internationalization efforts of governments and universities were narrowly focused on education abroad and mobility of students and faculty. Individual faculty members pursued the bulk of international engagement with limited institutional support, resulting in an ad-hoc, organic internationalization strategy at a very modest scale. More recently, some national governments have "ramped up" their levels of interest in internationalization – focusing upon the attraction of talent from abroad, and offering resources for global research collaboration.

In Canada, the main international education policies of federal and provincial governments emphasize the development of a "Canadian brand" for the recruitment of students and the acquisition of skilled labour. These efforts have been quite successful and, combined with recent geopolitical events, have made Canada one of the top four destinations in the world for international education; the number of Canadians heading abroad, by contrast, remains relatively low.

The value proposition of internationalization in higher education

Increasingly, a number of world-class universities are recognizing the ways in which internationalization – through international and intercultural experiences on the part of their students, staff, and faculty – can advance their goals.

- Learning: Internationalization better prepares the student for a globalized world, as well as providing the individual with skills like effective communication, flexibility and resilience, and cognitive dexterity and depth.

- Research: Diverse perspectives and insights, as well as a larger pool of financial, infrastructural, and educational resources, provide a strong foundation from which to pursue research.
- Service: Public universities are obliged to contribute to issues of significance to their stakeholders, many of which are largely inseparable from global challenges.
- Strategic: To help a university advance its strategic goals, internationalization can be a stimulus to innovation, and it can be a gateway to resources. Moreover, in an increasingly competitive global market for education, top-tier universities recognize internationalization as a key strategy to distinguish themselves amongst their peers, through formally enhancing their rank, and informally broadening their reputation.

Contemporary components of internationalization

There are three key components to the contemporary landscape of internationalization in institutions of higher education. These are referred to as: Internationalization on Campus (IoC), Internationalization Abroad (IA), and International Partnerships (IP). The term IoC is offered to capture the multiple international dimensions on the home campus, with focus on incoming international students and internationalizing all students' experiences. Current challenges to a successful IoC program include determining and securing the ideal ratio of international to domestic students, avoiding over-reliance on one key market for incoming international students, identifying and allocating appropriate resource supports for international students, and integrating diverse communities on campus so as to reap the benefits of a global population. Successful strategies to address these challenges include country-of-origin diversity in international student recruitment, anticipating – and funding – support requirements for international students, and intentionally designing, resourcing, and evaluating intercultural initiatives, both curricular and co-curricular, on campus.

IA is a term used to refer to the mobility of the university population across international borders. With respect to student mobility, the term encompasses a broad range of initiatives: short and long-term semesters abroad, research internships, service-learning, work, joint academic programs, and dual and cotutelle degrees. It is still unclear as to whether particular types of experiences – with particular durations and locations – are more valuable than others; or whether some minimum criteria across these characteristics should be in place in order to define "an international experience". In any case, the safety and well-being of those abroad continue to rise up institutional and public agendas, with recent geopolitical events serving as ever-present catalysts in this regard. Additionally, international experiences are often prohibitively expensive, or come at the cost of other paid opportunities for students (or are difficult to arrange, for academic reasons). Many institutions in Canada and around the world are looking to increase the number of students participating in IA initiatives, seeking to understand "best practice" and experimenting with new strategies.

IP refers to cross-border linkages with institutions, alumni, industry, governments, and other stakeholders. Many of these linkages are primarily concerned with collaborative research activity. Currently, highly-regarded strategies for IP emphasize the development of fewer, strong strategic partnerships, networks, and alliances to meet institutional goals for internationalization and grow the global impact of research. Factors to consider when prioritizing partnerships include value added for the particular university's faculty and students, relative ranking of the prospective partner, existing linkages, location, and type of partnership (research and/or educational). Additionally, significant financial and time resources must be devoted to outreach, partnership maintenance, and evaluation of outcomes over time. International alumni can play a crucial role in advancing an institution's internationalization

goals, as ambassadors, champions, and facilitators for partnerships, as well as talent recruiters, and providers of market intelligence more generally.

Integration

"Comprehensive Internationalization" has increasingly been adopted as a framework for internationalization at universities, seeking to align and integrate policies, programs, and initiatives to position universities as more globally-oriented and internationally-connected institutions. This strategy considers all the IoC, IA, and IP dimensions of internationalization through a combination of top-down and bottom-up collaborative approaches. Moreover, emphasis is placed on developing more qualitative measures of internationalization in addition to current quantitative metrics, and building fewer, deeper relationships with other global institutions.

Internationalization and Waterloo

A strong international outlook and vibrant international engagement are vital to Waterloo's global excellence. Well-known for its transformative research, innovation and entrepreneurship, and co-operative education program, these qualities, as part of the University's overall brand, can be leveraged and considered for strategic planning of international initiatives.

Moving forward, Waterloo must look inward: reflecting on internationalization in its overarching ethos, and considering both the amount and quality of intercultural opportunity available to students, staff, and faculty. However, the University must also look outward: finding synergies with other institutions, and developing strategic outreach priorities. A series of questions is presented in the paper to stimulate campus-wide discussion.

The world is indeed complex and interdependent. Given this context, risks are inevitable, and the University must be vigilant and continue to adhere to and promote the values of academic freedom, reciprocity, quality, and access. In its international engagement, it will have to address challenges concerning academic integrity and freedom, quality assurance, institutional autonomy, ethics, brain drain and exchange, developing sustainable partnerships, improving international student experience, and engaging in regions and countries with diverging value systems. Means to evaluate and to act upon such risks will have to be in place.

Although internationalization brings such challenges, there are also a great many opportunities, such as use of technology and online platforms for collaboration and participation, access to talent, research funding, and other resources, and the opportunity to address complex problems through innovative and interdisciplinary approaches utilizing diverse perspectives. The world needs its top universities to internationalize thoughtfully, meaningfully, and forcefully.