**Canadian Association for Graduate Studies (CAGS)**
**Task Force on Excellence in Graduate Programs**
**Synthesis Report**

**Report to CAGS**
**January 23, 2022**

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**Foreword**

*In late December 2018, a Task Force was created by the Canadian Association for Graduate Studies (CAGS) to investigate and produce a report on Excellence in Graduate Programs. Members of the Task Force were assembled over Winter 2019. The Task Force sought to identify challenges and opportunities faced by Canadian universities aiming to ensure high quality and relevant programs – both research-based and professional - for students. To identify areas of particular interest to CAGS members, the Task Force hosted a panel discussion at the 2019 CAGS meeting in Winnipeg. In response to a question that asked the participants to rank areas of highest priority for task force recommendations, the highest rated option (at 59%) was to bring PhD curriculum into the 21$^{st}$ century by diversifying the required learning outcomes. Additional areas identified as of significant interest were defining excellence in doctoral interdisciplinary studies, and, excellence in quality assurance. With this mandate, the task force set out to make recommendations on incenting excellence in doctoral programs through deeper investigations.*

*As is expected in an undertaking of this magnitude several challenges were encountered including turnover of our membership and the distraction for many task force members in dealing with the issues of the day during the pandemic. Our resolve to persist endured given the importance of the task at hand and the genuine passion of the members to provide a set of unified recommendations to incent excellence for Canadian PhD graduate programs. Our resolve was sustained by support from various stakeholders, especially during these turbulent times in higher education. We committed to weaving consideration of equity, diversity, inclusion, and access into the concepts of excellence. We note the importance of Indigenization and Decolonization for excellence in the Canadian context; however, we have not addressed the issue in this report given the simultaneous work of the CAGS Task Force on Truth and Reconciliation Calls to Action and Graduate Education.*

*We sincerely hope that this report, that synthesizes and includes excerpts from three fulsome companion documents, will spark further conversation and lead to change efforts focused on future excellence in Canadian graduate education generally, and in particular PhD programs.*

**Members of the Task Force**

Together, members of the Task Force play multiple roles in the Canadian post-secondary education system including, Deans, Associate Deans, Professors, Directors of Graduate Programs, Professional Development, and a recent PhD student. Each member shares a passion for aspirational excellence in post-secondary education. The members of the Task Force are:

- ➢ Kenisha Blair-Walcott, Researcher and Former PhD student, University of Saskatchewan
- ➢ Debby Burshtyn (Chair), Dean, College of Graduate and Postdoctoral Studies; Professor, Department of Biochemistry, Microbiology and Immunology, University of Saskatchewan
- ➢ Eileen Denovan-Wright, Associate Dean, Faculty of Graduate Studies; Professor of Pharmacy, Department of Pharmacology, Dalhousie University
- ➢ Diane Dupont, Former Dean, College of Graduate Studies and Professor, Economics, Faculty of Social Sciences, Brock University
- ➢ Vina Goghari, Vice-Dean, Research and Program Innovation, School of Graduate Studies; Professor, Department of Psychology, University of Toronto
- ➢ Mabel Ho, Director of Professional Development & Student Engagement, Faculty of Graduate Studies, Dalhousie University

- ➢ Elizabeth Oddone Paolucci, Former Director, Community Health Sciences Graduate Program (MDCH); Professor, Cumming School of Medicine, University of Calgary
- ➢ Luc Simon, National Coordinator for the Canadian Graduate and Professional Student Survey (CGPSS, 2010-2020)
- ➢ Ian Wereley, Executive Director, Canadian Association for Graduate Studies (CAGS)
- ➢ Former Members:
  - o Fiona Black, Associate Dean Graduate Studies, Dalhousie University,
  - o Philippe-Edwin Bélanger, Directeur, Service des études supérieures et postdoctorales a l'Institut national de la recherche scientifique
  - o Gretchen Kerr, Former Vice-Dean, Programs and Innovation, School of Graduate Studies, University of Toronto

**Executive Summary**

The task force on Excellence in Graduate Programs was formed in late 2018 with an overarching goal to set out principles and recommendations for excellence in graduate programs. Recognizing the enormity of the undertaking, the task force elected to first focus on PhD programs.  The resulting report focuses on three major themes: (i) how to define and measure excellence and who gets to define it; (ii) exploring excellence in interdisciplinary programs and individualized interdisciplinary programs as a model to extract potential universal principles of an "excellent PhD program"; and (iii) the need to update the learning outcomes for doctoral programs.

We found defining excellence was not an easy task. Existing frameworks for excellence in academia are steeped in traditional viewpoints that serve to perpetuate the status quo with little room to expand definitions of excellence in research, scholarship, and creative practice.  To move away from insular definitions of excellence that are defined by one type of stakeholder, namely academics in the field, we need to solicit and incorporate many stakeholder viewpoints; thereby creating an inclusive and forward-looking definition of excellence.

Exploration of existing degree level standards, program approval processes, and quality assurance and assessment practices revealed gaps and opportunities in how programs and mentors could actively use program learning outcome frameworks to improve the student experience. The task force puts forward the idea that we need to better scaffold a student's learning and developmental journey. We can do this by explicitly incorporating the full suite of PhD learning outcomes in an individual development plan that maps the formal and informal elements of the program to the learning outcomes and embraces exploration and preparation for a broad range of careers.

Exploration of excellence in individualized interdisciplinary doctoral programs, as a means to identify the universal elements of an excellent doctoral program, revealed the importance of the resources to support the program and the connection to a community of researchers, and the opportunity to train faculty to participate in the process that can be filled with ambiguity. Interdisciplinary research pushes hard on the norms of what constitutes a traditional dissertation and defence, and highlights flexibility as key to an excellent program. We acknowledge several Canadian universities that are leading the way in opening up these alternatives. Furthermore, increasing flexibility in what constitutes a dissertation and defence, may appeal to individuals doing different types of work, such as community-engaged work, as well as individuals entering PhD students from non-traditional pathways.
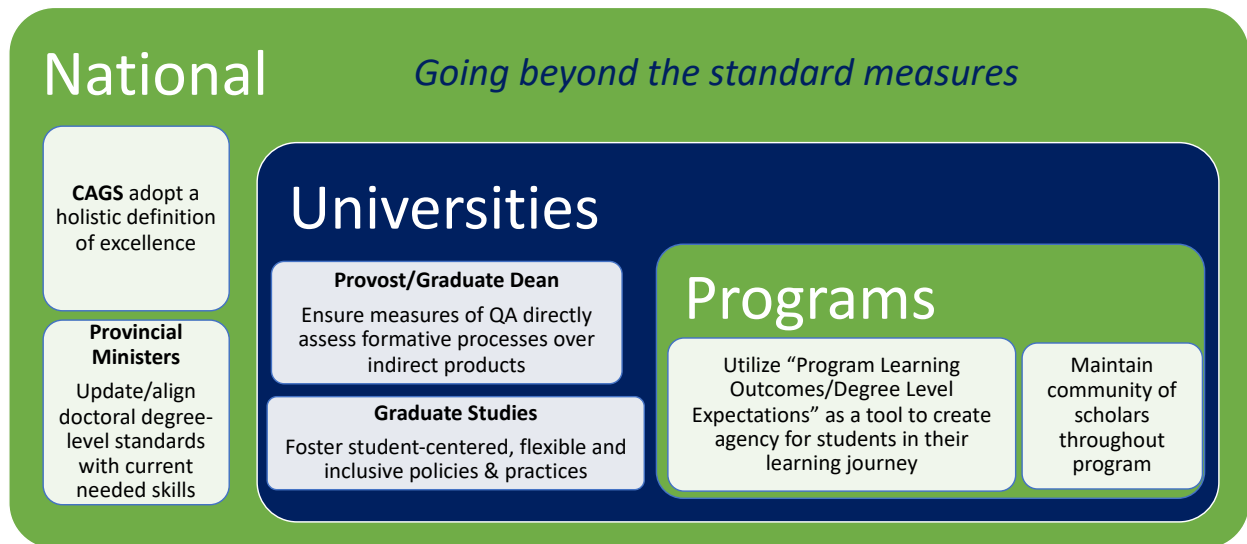
To share our findings and feedback on our recommendations that were gathered throughout the process, we have created three in-depth reports that complement this synthesis document, along with a full list of recommendations at the end of this report.  Here we list six overarching recommendations for change that are directed at policy makers and leadership in graduate education and programs.

➢ **Recommendation #1: CAGS** to adopt a student-centered holistic definition of inclusive excellence for doctoral graduate programs as one that trains students in all the skills needed for professional life.
➢ **Recommendation #2:** Update/align national/provincial/institutional doctoral degree-level standards to include a broader set of skills and attributes required for PhD graduates

➢ **Recommendation #3**: Ensure measures of quality assurance emphasize assessment of the effectiveness of program design and student development relative to proxies of quality and experience such as entrance grade point average and publications.

➢ **Recommendation #4**: Provide all students, at the outset, with the program learning outcomes. These program learning outcomes become a tool to develop a plan with their mentor to monitor mastery of each learning outcome as students progress through their program.

➢ **Recommendation #5**: Graduate Schools/Programs to allow and promote flexibility in the nature of the dissertation.

➢ **Recommendation #6**: Programs to create and maintain communities of scholars throughout the program (e.g. through seminars), especially as we include more flexible, remote, hybrid, and asynchronous modes of delivery. Resources are allocated for innovations in teaching and learning.

➢ **Recommendation #7:** CAGS create a new taskforce on building a more inclusive and just graduate education landscape.

Figure 1
National, Institutional, and Programmatic Recommendations for Excellence



National — *Going beyond the standard measures*

**CAGS** adopt a holistic definition of excellence

**Provincial Ministers**
Update/align doctoral degree-level standards with current needed skills

Universities

**Provost/Graduate Dean**
Ensure measures of QA directly assess formative processes over indirect products

**Graduate Studies**
Foster student-centered, flexible and inclusive policies & practices

Programs

Utilize "Program Learning Outcomes/Degree Level Expectations" as a tool to create agency for students in their learning journey

Maintain community of scholars throughout program

**Section 1 – Introduction: What constitutes an "excellent graduate program"?**

This task force follows the CAGS Dissertation Project with broader questions on design of graduate programs and how to measure excellence of the program design and outcomes. The work of the task force coincided with much ongoing discussion by the press and within the academy of the employment outcomes of graduate students, particularly PhD students and whether our way of training them has become obsolete. In 2019, the task force conducted a preliminary survey of existing reports primarily from organizations such as CAGS and other think tanks that revealed a great deal published on how graduate schools can best manage and support graduate students and programs, less focused on program design or redesign. Front and centre of much of the literature is the need to recognize and prepare doctoral students for careers outside of the academy and the limitations of traditional practice[1]. In the last decade, centrally provided co-curricular professional development has blossomed to meet the need for broader skills development, usually pitched as a requirement for non-academic careers and as soft skills or transferable skills. A great deal of attention also been paid to the quality of supervision for thesis students and there is a large and ever-growing list of books and guides about mentoring students aimed at faculty. It is worth noting here that the Canadian Graduate and Professional Student Survey (CGPSS) survey monitors national trends in student satisfaction with their university, graduate programs, and the mentorship they are receiving. However, national data on how graduates view their graduate programs once they have established themselves in their careers is not available.

As we progressed with the themes noted above, an approach to determining the design of an excellent graduate program crystalized and then much changed in our world with the outbreak of COVID-19 in March 2020. Many conversations were taking place about how many rules, once thought essential and sacred, could be modified or dropped without any compromise in standards – virtual defences being a prime example. It also brought the importance of research and creative works into the spotlight, as well as the value of interdisciplinary programs and research. It also showed us where inequities lay and the huge vulnerability of students to the economic and social outfall from the lockdown. With the pandemic as a backdrop, we narrowed the focus of our work to the PhD degree.

Doctoral programs follow conventional structures and have many similar attributes. The PhD, simply and traditionally defined, requires the PhD candidate to make an original (substantive) contribution to the field. Traditionally, the artifact of the original contribution is a dissertation – a long written document that presents the research findings of a sufficient quality to pass peer review for publication. The demonstration that the student is worthy of a PhD is established through the defense of the dissertation. This traditional view of the PhD was developed as the training required to assume the role as an academic. PhD programs often involve teaching experience and requirements for publishing and participating in academic forums such as conferences. There is a key relationship with the thesis supervisor being the primary mentor who invests greatly in all aspects of the student's training and is responsible for guiding the student to successful completion. In addition, provision of infrastructure and resources to perform research may also need to be accessed through the supervisor.

Governments, including our provincial governments, adopted degree level standards to promote mobility/transferability and to underpin quality assurance practices. However, the criteria for each degree were largely developed from traditional views of the purpose of the degree. The degree standards speak

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[1] Reference https://cca-reports.ca/reports/the-labour-market-transition-of-phd-graduates/

to what graduates of the program should be capable of but do not speak to the methodology to achieve the outcome. As will be developed in Sections 2 and 3, program curriculum, definition of learning outcomes, policies and practices are influenced by many external forces. Government or the university may set requirements for programs for initial approval and cyclical review. Institutional policies set (minimum) standards for many aspects of programs. Professional or Accreditation bodies influence program design. To a growing extent, funding agencies also set expectations for training environments by requiring descriptions of the training environment and mandating individual development plans for students.

What then are attributes of an excellent PhD program? The standard measures in self-study templates include:

- Reputation.
- Financial resources for students.
- Financial resources for unit delivering the program.
- Infrastructure for research and creative works.
- Quality of the faculty.
- Student satisfaction.
- Student achievements and outputs in terms of publications, scholarships and employment (as academics).

The following sections of this report present alternatives to measuring the quality/excellence of PhD programs through the established lens of creating another generation of PhD graduates.

**Section 2 – Reflections on Defining Excellence in Graduate Programs**

Instead of struggling with a nebulous definition of excellence, we propose that it is important to approach excellence differently. Individuals, programs, units, universities, the community of scholars and the "public" can aim for the highest level of creativity and rigour in the experiences, outputs, and ultimate career destinations of PhD candidates. Excellence can be defined relative to the goals and aspirations of the person and groups who are stakeholders in PhD level education. If asked to define excellence in graduate programs or the qualities of excellence in individual candidates, many academics will say they "know excellence when they see it", but they are hard pressed to define the components of excellence. This is most evident when students have not risen to a high level of achievement in their programs and examiners and supervisors are asked to justify their evaluation.

The definition of "excellence" in graduate programs is multi-faceted. This presents a challenge since excellence may mean different things to different stakeholders, and variability within stakeholder groups. These include graduate students, faculty members, administrators, and society, in a broad sense. For example, one definition of excellence is that graduating students are well positioned for successful and/or more diverse careers because they have developed skillsets (including communications, leadership, and community engagement) that are in demand. If we recognize that excellence can be defined in a number of ways, then we are embracing a notion of inclusive excellence (Williams, Berger, & McClendon, 2005). In their article, Williams and colleagues focus upon American affirmative action programs aimed at creating a more diverse student and faculty population at institutions of higher learning. They argue for a multilayered approach. Their definition has four primary elements:

- A focus on student intellectual and social development;
- A purposeful development and utilization of organizational resources to enhance student learning;
- Attention to the cultural differences that learners bring to the educational experience and that enhance the enterprise; and
- A welcoming community that engages all of its diversity in the service of student and organizational learning" (p. vi).

These components are largely student-focused; however, we note that they also support the other definitions that we have identified above. What then is excellence in graduate programs? Excellence in graduate programs could mean that upon completion of their education students are well positioned for successful careers. **As the task force reflected on what excellence in graduate programs looked like, the definition by Roy (2003) resonated: "the most important principle of an excellent graduate program is to train students in all the skills needed for professional life" (p.1).**

**RECOMMENDATION:** CAGS adopt a definition of inclusive excellence in doctoral programs as one that "trains students in *all* the skills needed for professional life."

### Section 3 – Measuring Excellence through Program Quality Assurance

The academy has always been viewed as doing more than training for a particular vocation or profession. In fact, the role of higher education has been linked to promoting economic and social development, advancing knowledge via research and teaching, influencing higher education policy and practice locally and globally, and helping graduates become "future generators of sustainable value for business and society at large … to work for an inclusive and sustainable global economy…" (Gurpur & Rautdesai, 2014 in Diver, 2019). However, over the last few years, scholars, as well as government officials and public members, have forced a re-visitation of the role of higher education in employability of its graduates, along with determining competency and performance benchmarks. The overarching aim of higher education is to help learners develop a critical mindset; for "*students to grow as flexible and independent individuals who would be able to embrace the challenges of a world in which the concepts of a single career and stable employment are increasingly seen as belonging in the past, and in which what counts is not so much the content of what they have studied – which in some areas is likely to become out of date almost by the time they leave university – but the skills they have acquired and their ability to continue to learn and develop as they move between different environments, different occupations, indeed different countries*" (Jedrzejewski, 2019).

The aim of this section is not to determine the diverse roles of the academy, nor offer evidence on its influence and whether these goals and roles have been met over time. Assessment is part of a deeper and broader scholarship, that we cannot comprehensively or exhaustively represent in this synthesis document. Rather, our goal is to situate the assessment of learning outcomes and evaluation of graduate education programs within the current Canadian context by briefly reviewing common practices while comparing it to the state of the published literature, and then concluding with some proposed recommendations of best practices that may push programs to extend their reach in future planning.

Unlike the United Kingdom's Quality Assurance Agency (QAA) in Higher Education, there is no such equivalent in Canada. The Universities Canada is not a national accreditation body, but it does unify the universities within our ten provinces and three territories in their shared commitment to and culture of quality and excellence. The application process to become a Universities Canada member is rigorous and

requires that institutions meet various criteria and principles. The [Qualifications Framework](#), nationally adopted in 2007, is part of the overarching *Ministerial Statement on Quality Assurance of Degree Education in Canada*, a statement that outlines guidelines on assessing the quality of new degree programs and new degree-granting institutions. The framework places individual qualifications within their respective education systems, describes the relationship between different qualifications, illustrates the continuum of learning expectations, offers a context for policies on credit transfer and qualification recognition, and enables the cross-comparison of educational system standards, which is most helpful when comparing qualifications of internationally trained individuals ([see CICIC](#).ca).

Given the steady growth in Canadian graduate studies enrolments since 2013, ethical concerns around admitting students who may be unable to successfully complete, and a shortage of 'seats' in popular graduate programs, quality assurance practices have become critical (Nie & Hossain, 2021). There are several national, provincial, and local quality standards academic programs must meet to be sustained. These multi-level *Quality Assurance* (QA) processes are "designed to help each faculty, department, institute, and program achieve and maintain standards of excellence in research and teaching" relative to comparable units nationally and internationally, as well as "to create an institutional culture of excellence, and meet public accountability expectations through a credible, transparent, and action-oriented review process" (University of Calgary, September 20, 2021; [https://www.ucalgary.ca/provost/strategic-initiatives/quality-assurance](https://www.ucalgary.ca/provost/strategic-initiatives/quality-assurance)). As defined by the Canadian Information Centre for International Credentials (as cited in Office of the Vice President (Academic) (University of New Brunswick, 2003), the term quality assurance "relates to the achievement of educational program standards established by institutions, professional organizations, government and/or standard-setting bodies established by government." Within higher education, *Quality Assurance (QA)* processes are central to achieving a university's mission, vision, and strategic plans, and include Academic Unit Reviews, Curriculum Reviews, and in some cases, external accreditation reviews.

**Recommendations:**
Are there changes to program approval and cyclical review necessary to achieve excellence in program design and delivery?

1.  Start quality assurance and assessment processes with an understanding of what an institution (or an instructor, at the granular level) wants students to know and be able to do; a form of "backwards design" focused on "where do I want them to end up, and then how do I help them get there" (Lederman, 2019).
2.  Adopt Quality Assurance Frameworks, focused on producing quality enhancements to the program, to balance the need for program accountability with the need to encourage innovative curricular design (Ontario Universities Council on Quality Assurance, 2021).
3.  Engage and include various stakeholder voices, including employers, to determine program learning outcomes (Diver, 2019).
4.  Create clear and efficient quality assurance tools, practices, and processes, so as to support staff and students in engaging in effective ways of working (Diver, 2019).
5.  Develop and include more innovative quality assurance measures and methods to directly assess direct and indirect learning outcomes, formative processes, and the student's learning journey (Diver, 2019; Ewell & Cumming, 2017).
6.  Integrate the power of digital technology and data in quality assurance practices to improve the connections between our learners, programs, and external disciplinary experts, and to foster fluency in technology-use.

7. Involve learners in constructing culturally responsive, socially just, and equitable assessments to advance equity, diversity, inclusion, access, and Indigenous perspectives in the measurement of graduate education (Jankowski, 2020).
8. Develop and implement culturally responsive, socially just, and equitable assessments to advance equity, diversity, inclusion, access, and Indigenous perspectives in the measurement of graduate education (Jankowski, 2020).
9. Involve students in the measurement process to develop rubrics and other assurance tools, so they understand what other stakeholders want to assess and we understand what is of value to them to be assessed.

**Figure 2**
**Quality Assurance Processes to Incent Excellence**
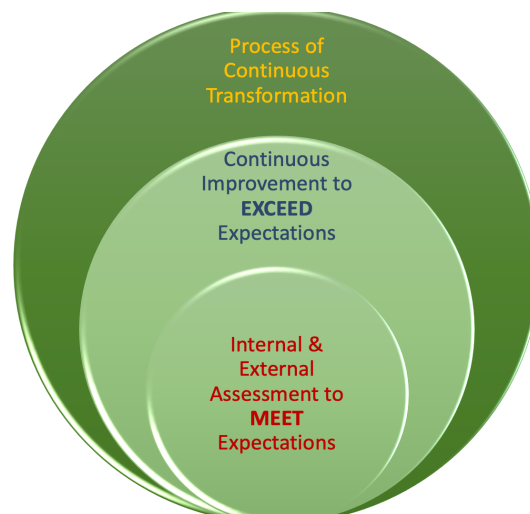


*For more details of the background see Measuring Excellence by Program Quality Assurance Report.*

**Section 4 – Exploring Interdisciplinary Programs to Identify the Universal Elements of An Excellent Graduate Program**

In reviewing the literature, one of the areas of focus identified by the members of the task force as worthy of further research, was excellence in Interdisciplinary Doctoral Programs. This section discusses relevant literature, develops a lifecycle methodological approach to analysis, and discusses findings arising from interviews with a cross-section of Vice-Provosts, Deans, Associate Deans and Administrators of Graduate Studies. Recommendations for practices and approaches that strive to create excellence in programs follow from the literature review, our conversations with colleagues who are involved with the administration of interdisciplinary programs, and our own observations. These recommendations touch upon all areas of the graduate student lifecycle from recruitment to convocation and, while focused specifically upon Interdisciplinary Doctoral Programs, we find that many apply equally to disciplinary Doctoral programs.

Finally, from the perspective of broader society, Woolf (2017) noted the need for countries to pursue interdisciplinary research to tackle questions that require knowledge from science, social sciences and

humanities for successful resolutions to challenging world problems. Combining these disciplines and using them in novel ways might achieve another of society's notions of excellence in interdisciplinary doctoral programs. Namely, by encouraging students who might not normally pursue disciplinary research programs to embrace a more holistic approach to their research, ID programs may support equity, diversity, and inclusion (EDI) initiatives.

During one of our interviews, we were asked how we defined excellence. In turn, we posed this question to the interviewee.  Since we were focused upon interdisciplinary programs, this was the context in which the interviewee answered. Namely, the interviewee noted that the program does not focus explicitly upon excellence per se. Rather, it tries to highlight the significant contribution that interdisciplinary research can make in solving urgent societal problems.

Our rationale for choosing to focus on interdisciplinary programs is three-fold. There has been an increasing interest since the mid-1950's from every type of stakeholder. They face the same challenges to be excellent as disciplinary programs, but have additional challenges in their pursuit of excellence. They offer additional benefits to every stakeholder beyond traditional disciplinary programs. Therefore, by investigating interdisciplinary programs in depth, we hope to learn lessons that can be applied to examine excellence for all types of doctoral programs.

**Key recommendations from the 'Excellence in Individualized ID Programs' Study**

Fuller descriptions and rationale for these recommendations presented and a more detailed report are found in the companion report [Excellence in Interdisciplinary Doctoral Programs](). In that report we present a brief history of the development of ID Programs, both in Canada and other countries and a review of the literature highlighting themes, characteristics, challenges, and opportunities that other researchers have noted about Interdisciplinary Doctoral programs. We discussed the lifecycle approach we developed to guide us in our examination of excellence in Interdisciplinary Doctoral Programs. This study was largely centred on individualized interdisciplinary programs for which the program of study is unique to the learner, direct entry, and supplementary programs or models. The ultimate findings of the study were summarized and synthesized. The following recommendations were the result of the study:

**Recommendations:**

1. Provide prospective interdisciplinary students with support such as webinars/workshops/access to graduates or current students, as well as faculty, to assist in both the preparation of an application and the skills needed to secure supervisors.
2. Employ a central unit that has responsibility for both admissions and post-admissions administration.
3. Introduce and/or maintain regular outreach with students in the program.
4. Require students and (encourage) faculty to participate in interdisciplinary seminars throughout the program.
5. In less structured programs, conduct a review of the course requirements for students over the past 5-6 years to ensure overall requirements are consistent with university norms and quality assurance standards.
6. Allow flexibility in the nature of the dissertation.
7. Award dissertation fellowships.
8. The Dean or Vice-Provost of Graduate Studies should be the university champion for interdisciplinary programs.

9. Develop supports that are unique or tailor-made to fit interdisciplinary programs and ensure that current students are made aware of the full range of support available to them.
10. Develop a mentorship model to encourage participation of new faculty (either junior or from different faculties) in interdisciplinary supervisions.
11. Clearly articulate competencies and skills obtained from participating in an interdisciplinary program.
12. Construct and maintain an online database of Canada's interdisciplinary doctoral program offerings.
13. Create a network of faculty and administrators of interdisciplinary programs for the purposes of sharing strategies, practices and challenges.

*Rationale for this approach was that if we can define what constitutes an excellent individualized interdisciplinary program, it would translate to most programs because it is free of the discipline-specific needs. From this approach, the following 'Universal Excellence in PhD Program' recommendations were gleaned from the 'Excellence in ID' study that are universal:*

➢ Introduce and/or maintain regular outreach with students in the program.

➢ Require students (and encourage faculty) to participate in seminars throughout the program.

➢ Allow flexibility in the nature of the dissertation.

➢ Award dissertation fellowships.

➢ Develop a mentorship model to encourage participation of new faculty (either junior or from different faculties) in interdisciplinary PhD programs.

➢ Clearly articulate competencies and skills obtained from participating in a PhD program.

*For more details of the background and consultation process see full report* Excellence in Interdisciplinary Doctoral Programs*.*

**Section 5 – Value of Actively Using Degree Level and Program Specific Learning Outcomes**

In PhD programs, the majority of skill development happens outside of a formal coursework. Knowledge is built through self-directed learning, skills in research design, technical know-how and project management are built through experience in performing the act of research, knowledge and skills are built through exercises such as applying for scholarships, writing manuscripts, conference papers and presentations, outreach activities, teaching, mentoring junior research trainees and so on. These activities occur under the mentorship of a supervisor or mentor. Forward thinking mentors also promote students to engage in activities that complement the experiences most directly related to the degree. As such, the perspective of the faculty supervisor/mentor inordinately shapes training of PhD students.

What is generally missing is awareness on the part of the student, the faculty mentor, and those that designed the program of the national or provincial degree level standards and learning outcomes of the program. Often the articulation of learning outcomes happened only when the program was first approved and never reconsidered for individuals. Students have to glean from the experiences and

formal evaluations what is expected and how to develop or improve in one area or another to fully meet the expectations for an "excellent" PhD program.

We suggest the development and adoption of a tool designed to foster students and faculty mentors discussing and reflecting on the program learning outcomes as a means to empower students to drive their own development, to provide them with the language to describe the skills and attributes needed to successfully complete their program. This tool typically referred to as an individual developmental plan (IDP) has been adopted by some institutions and is a task force best practise recommendation. The IDP could also be developed with a digital interface given the current digital learning environment/space of most post-secondary institutions during the pandemic. Additionally, the task force recommends that institutions provide students with the respective frameworks, so that they are better able to track and monitor their progress and mastery throughout the life of their programs.

**RECOMMENDATION:** Provide all students, at the outset, with the program learning outcomes. These program learning outcomes become a tool to develop a plan with their mentor to monitor mastery of each learning outcome as students progress through their program.

### Section 6 – Updating PhD Learning Outcomes

Over the past several decades, we have seen a drifting and shifting of the skills needed to become a successful academic researcher. In the United Kingdom, frameworks have been developed to realize the spectrum of skills needed by scholars and researchers to enhance performance over careers (www.vitae.ac.uk/). The Declaration on Research Assessment (DORA) (https://sfdora.org/) and similar initiatives are working to refine and quantify the impact of scholarship. The shift is illustrated in the growing expectations placed on researchers by funding agencies with emphasis on collaboration and networks, international partnerships and interdisciplinary methods, community-engaged research, public scholars and outreach, Indigenization of research and equity, diversity, inclusion, and accessibility (EDIA). Being able to address EDIA has become integral to being competitive with major funding agencies having explicit requirements to develop a robust EDIA section for all major Tri Agency [such as Canadian Institute of Health Research (CIHR), New Frontiers in Research Fund (NFRF), and Social Sciences and Humanities Research Council (SSRHC)] sponsored initiatives. Moreover, expectation for outreach means that academics need to be comfortable outside the traditional domains of the ivory tower and able to relate the changing needs of society and the multiple stakeholders that interface with PhD graduates during and after their training (grant funding agencies, employers, and other publics). Many if not all universities in Canada currently support co-curricular development for many of skills in professional development programs that cover skills common to all PhD programs. Despite the effort from universities and uptake from trainees, few PhD programs require students to complete a development plan for co-curricular training. Univeristy of Alberta is an exception with having a PD Requirement.

Based on a scan of existing PD programs and a review of the Ministerial Statement on Quality Assurance of Degree Education in Canada (2007), a list of additional skills and attributes was developed in alignment with the professional skills needed for all PhD graduate careers (corporate, non-profit, academic, government) to recommend as core skills in a PhD program. The recommended skills also reflect the expectations of employers and stakeholders such as grant funding agencies.

The taskforce built upon existing degree level standards contained in the **Ministerial Statement on Quality Assurance of Degree Education in Canada** (2007) to ensure that the skills required of PhD graduates are adequately captured in Canadian graduate programs.

The taskforce solicited feedback from CAGS members in spring 2021 through a consultation toolkit. Deans, Associate Deans, Vice Presidents, and Associate Provosts from our member institutions were invited to review the document and conduct internal consultations within their institutions with other faculty members, administrators, and students. They were then asked to provide feedback and recommendations. Additionally, members from the Graduate Professional Development Network (GPDN) were also invited to host consultations and provide their feedback and recommendations from their discussions.

Overall, most participants saw significant value in the document and appreciated how it is re-phrasing for the changing environment. They also appreciated its breadth and scope. There was clear support for the expansion of the PhD Skills statement. Typically, the responses from most institutions suggest that all the skills presented in the expanded skills statement resonated as core to an excellent doctoral program:

- Professional communication and knowledge transfer
- Project Management
- Leadership and mentoring
- Collaboration & Interpersonal Skills
- Intercultural & EDI competencies

Other suggestions for skill inclusion were entrepreneurship & innovation (intrapreneurship), interdisciplinary research & networking skills, emotional intelligence & empathy, digital communication skills, career management, and wellness & well-being. Program developers and administrators sought the provision of guidance on how best to implement recommendations from the expanded skills statement further cementing their support. A study by Loleen Berdhal (2021) at the University of Saskatchewan also indicated that most students would prefer to see development of these types of skills embedded within doctoral programs; however, the recommendation of the taskforce does not specify whether the additional skills be delivered within a program or through leveraging of centralized offerings. Overall, the task force recommends the expansion of the Ministerial statement to include skills needed in a 21st century PhD program.

**RECOMMENDATION:** To achieve excellence in PhD programs, the degree level standards and program learning outcomes must be expanded to explicitly include skills for 21st century researchers in areas such as project management, collaboration, leadership and interpersonal skills, and intercultural competencies.

*For more details of the background and consultation process see Expanded PhD Skills Statement.*

**Section 7 – Ways the COVID-19 Pandemic Changes How We Define and Measure Excellence**

As our work progressed as a taskforce, the pandemic unfolded, and the need for flexibility, access, and mental health issues were amplified for graduate programs to adapt to the circumstances. Moreover, the effects on graduate student trajectories were uneven, with some disciplines, cohorts, and individuals being affected more than others. Inequities in disruptions were influenced by a student's social location, with Indigenous and racialized groups evidencing greater rates of COVID-19 and more severe outcomes. Additionally, students with caregiving responsibilities were impacted profoundly in their ability to balance academic, work, and life demands.

Much has been written elsewhere on the changes to higher education in general precipitated by the pandemic and the acceleration of technological changes that enable change in how we operate at an institutional level and how we deliver programs. From the perspective of the taskforce, the revelations of the pandemic did not alter our key recommendations.  In fact, they underscored the need to be student-centered, flexible, to update the competencies, and, especially to redefine academic excellence in a way that is truly inclusive.

As a task force, we offer these additional thoughts and questions in response to the pandemic context.

**INSTITUITONAL NORMS**

- At an institutional level, beliefs about processes that were needed to ensure rigor were shattered. For example, virtual advisory committee meetings and thesis defences work well and have many benefits: Students can "study in place", collaborative supervision and advisory committees across distances are made easier by broad familiarity with new and improving platforms; involving external examiners virtually reduces carbon footprints by preventing the need for travel and may allow for more participation from faculty for whom travel is a barrier.
- In assessing program outcomes, we will need to be aware of the uneven impact the pandemic has had on time to completion and recognize the great efforts of many of our students, especially in the health professions, as they were deployed and redeployed to provide services during the pandemic.
- Best practices in admissions and scholarship adjudications must address the disproportionate impact of the pandemic on women, Indigenous and racialized communities, and primary care-givers.
- Collaboration and collaborative programs between institutions benefitted from advances in platforms to deliver courses and networking activities. Transfer and access agreements will likely need to evolve to accommodate the traffic in students accessing courses in other institutions.
- The university-wide and beyond networks we have formed as administrators, and in disciplinary areas, to trouble shoot issues could be helpful to continue, to deal with other issues facing programs.

**POSITIVE CHANGE FOR PROGRAMS**

- Local seminar series have gone virtual, collaborative, and national, creating rich environments for students to be exposed to and connect with a wider range of high caliber experts in the field.
- More programs may adopt remote delivery and do away with physical residency requirements. How much do we accept that online degrees and in person degrees differ in offering advantages and disadvantages that balance out?
- *Or,* should programs have to ensure students do not become too disconnected. Care must be taken to replace the informal relationship building and ease that proximity lends to collaboration in a way that limits privilege to those that are able to be part of a physical campus community.
- In her 2021 letter to the community, Dr. Deb Adair, Quality Matters (QM) Executive Director, reflects on the lessons we learned in 2020 and how we should use and implement them to shape the future of education in the digital environment. Dr. Adair looks ahead and calls on the community to recommit to an agenda of quality, saying: "We all need to move forward with a clear mandate for quality that includes heightened attention to equity and inclusion. The challenge for us is that we must do this work on a bigger scale and broader scope with tighter resources. This mandate requires us to be scalable, flexible, and relevant for learning in all

modalities and for all learners. It's no longer about online education; it's about designing and delivering quality digital learning opportunities for all." "To begin with, we need to draw attention to the differences between emergency remote instruction and well-planned, appropriately designed online courses and programs for digital learning. We all knew that this distinction was critical in any evaluation of educational outcomes in 2020 as well as for the continued acceptance and growth of quality online education that facilitates student success post-pandemic." https://mailchi.mp/inqaahe.org/inqaahe-newsletter-q1-2021

- How will in-person programs, students, staffing, and resource allocation be impacted, positively or negatively, if faculty, administrators in departments and central service providers continue as hybrid or fully remote?
- Will the quality of pedagogy and supportive learning environments be impacted if faculty, administrators in departments and central service providers continue as hybrid or fully remote?
- Certain types of empirical research, scholarly and creative endeavors will remain tied to physical infrastructure – laboratories, studios, collections etc. That said, there are opportunities for programs based in these types of discipline to change as well. Even for these types of programs, there are examples where a program was restructured to allow international students to begin their course-work/initial term(s) remotely, reducing costs associated with living abroad, and the overall cost to the student for the program.
- Building professional networks and disseminating research will remain highly important for students and conferences will remain a critical venue for students. In person conferences are already returning in 2021/22, although it is expected that online conferences will continue beyond the pandemic. These are meant provide exquisite access with lower costs to participants and reduce the carbon footprint. However, it is easy to imagine vast inequities remaining for blended conferences, where those with means to travel have a different experience than remote attendees. Students and faculty will need specific training and support to gain the benefits from various forms of conferences.

**WELLNESS**
- The need to support the wellness of students is even more pressing because of the pandemic. During the pandemic, many students began remotely in programs designed to be person – how will these students fair and what if they must finish those degrees remotely? There are surely lessons to be learned in how to create connection and community for programs that might continue to offer remote options. Especially for post-candidacy PhD students, isolation and loneliness are stresses that are exacerbated by remote study. What good would come if expectations for PhD research became less focused in individual achievement and more focused on collaborative work?  We might also ask ourselves why North American PhDs are so long? Who is that length serving most?
- Leaves are good for students; leaves remain hard for international students again pointing to inequities in our systems. How can we lobby for better provisions within study permits for medical/parental leaves?  Can we find ways to provide financial support to students that need leaves and catch-up with funding agencies that already do?

What the pandemic taught us is that we can change, change a lot more and change a lot faster than we ever imagined. By leaning into the resiliency of faculty, staff, and students we can take these lessons forward into making changes in pursuit of excellence in graduate programs.

**Section 8 – Building Socially Responsive PhD Programs**

Concurrently, with the COVID-19 pandemic, racial inequities were underscored as a fundamental societal issue requiring immediate intervention. Graduate leaders will have to grapple with not only how to build inclusive pathways for historically-excluded and under-represented students, but also building inclusive programs, as one part of the pathway (e.g., faculty complement, inclusive of diverse cultural perspectives). Programs will need to continue to work towards incorporating the recommendations of the Truth and Reconciliation Commission (TRC) as they pertain to education. In this regard, the work of the *CAGS Task Force on Truth and Reconciliation Calls to Action and Graduate Education* will provide insights and guidance. Programs will also need to work towards incorporating the recommendations of the [Scarborough National Charter on Anti-Black Racism and Black Inclusion in Canadian Higher Education: Principles, Actions, and Accountabilities.](#)

A renewed commitment to equity, diversity, inclusion and access (EDIA) have been called for in graduate education. It is necessary to expand EDIA to include justice. At the very least, programs need to ensure there is equal access to preferred opportunities (e.g., graduate admissions, awards, employment), if not opportunities for social and restorative justice (e.g., over-selection of individuals from historically-excluded groups for preferred outcomes; a true commitment to working with different groups to build a more inclusive and just educational landscape).

It is imperative to understand that more general EDIA initiatives need not be our only focus in the area of social responsiveness. In thinking of reconciliation with individuals from under-represented groups, programs must focus on equity for intersectional identities; and also that certain under-represented groups have been particularly marginalized and need tailored outreach (e.g., Indigenous and Black communities). Indeed, specific initiatives focused on Decolonization, Indigenization, anti-racism and anti-oppression are also necessary, and have different foci in addressing systemic inequities. All of this work will be important if graduate education is to remain of relevance to the societal need for a diverse work force with all the necessary professional skills. However, this work will be both time consuming and emotionally intense; and graduate leaders will need to model their commitment to this work. Of importance, the burden of this work should not primarily rest on the few historically-excluded or under-represented faculty, staff and students that are currently part of these programs. As a first step, much of the flexibility that PhD programs will gain due to changes driven by the COVID-19 pandemic, will also benefit students from non-traditional backgrounds, and will set the stage for programs to build on these strategies. Ultimately, all individuals involved in the graduate landscape, will need to self-reflect on their own social location, including power and privilege, as well as the systems, they are embedded in, uphold, and benefit from.

**RECOMMENDATION:** Given the fundamental importance of this topic and the depth it deserves, **we recommend CAGS create a new taskforce on building a more inclusive and just graduate education landscape**, and that the current taskforce's recommendations sets the stage for this work by promoting a more student-centred inclusive definition of excellence.


**Section 9 – Overarching Recommendations**

To quote the former University of Alberta Graduate Dean Heather Zwicker (circa 2016): "The PhD has never been just one thing". From DPhil to PhD to Doctorates – doctoral degrees represent the highest degrees awarded by universities. From its roots as rite of passage that could take decades in a medieval

university to the present, PhD programs are predominantly designed with the single goal to develop the next generation of academics. Excellent PhD programs will redefine their goals from exclusively producing new professors to developing the next generation of leaders for within and beyond the academy and broaden the skills deemed essential to fulfill that promise.

### Summary of Recommendations to Achieve an Excellent PhD Program:

- Adopt a definition of inclusive excellence in graduate programs as one that "trains students in *all* the skills needed for professional life."
- Improve quality assurance practices to focus on skills developed by students, not simply the indirect measure of outputs (papers, conferences, scholarships, etc.).
- Create individual development plan tool for use by graduate students to track their progress and monitor mastery. There is also an external resource detailing how this strategy is aligned with funding (https://www.mcgill.ca/mypath/tools)
- Embed continuous professional development into the curriculum and programs for both students, staff, and faculty.
- Define the purpose(s) of the program and clearly communicate to potential students, current students and faculty involved in program.
    - o Actively recruit and admit for a diverse student body.
    - o Be intentional about where to market and don't leave it up to the reputations of the faculty to draw in students.
    - o Educate admissions committees to put biases in check.
    - o Be critical - measures such as GRE or admission GPA may not be the best indicator of learner potential.
    - o Develop an admissions process that supports and tracks success; ensure criteria and process remain current.
- Provide access - funding packages, flexible timelines.
- Actively use learning outcomes of the program and relate them to degree level standards to empower students to chart their learning and developmental journey
    - o Be explicit about formative processes through structured and unstructured aspects.
    - o Indicate what and how skills and attributes are developed through program elements such as courses, seminars, comprehensive, and candidacy examinations.
    - o Eliminate hoop jumping and focus on value-add activities.
- Train faculty as mentors and evaluators.
- Create an inclusive community.
- Think broadly on what infrastructure is important beyond the specific field.
    - o Use technology to enable participation in activities.
    - o Leverage national and international networks.
    - o Encourage/embrace mobility.
    - o Value and foster diverse experiences.
    - o Leverage central supports for expanding training in diverse skills.
- Flexibility for the form of the dissertation.
- Support broad career exploration and define success beyond academic jobs by first tracking PhD graduate students' career progression post completion.
    - o Build Alumni Networks.
    - o Facilitate internship and mentorship opportunities.

- Assess whether learning outcomes are achieved through external independent measures beyond employment outcomes.
- Continue the EDIA, justice, decolonization, anti-racism, and anti-oppression initiatives within our programs, fields, and society

**Figure 3**
**Excellence and the PhD Program Lifecycle**
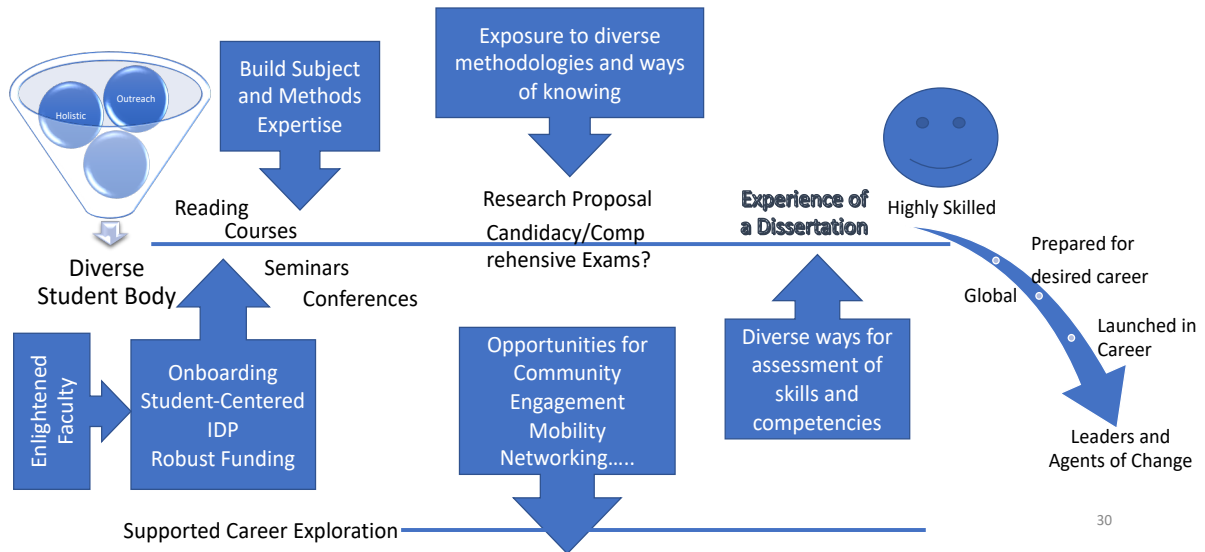


## Concluding Remarks:

Updating the definition of excellence for graduate programs is an action CAGS can promote, but it is not sufficient. The challenge remains to collectively adapt our concept of a PhD, such that we can encourage our graduates to make significant and original contributions, embrace the many ways students will demonstrate and communicate their contributions, and implement innovative ways to promote and assess the diversity of our scholars and programs.

**Acknowledgments**

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**Environmental Scan Resources**

**Federal Funding Bodies**

SSHRC
- "Strategic Plan" (2016)
- "Graduate Student Professional Development: A Survey with Recommendations" (2012)

NSERC
- "Creating Canada's Future: Investing in Research for Impact Today and Tomorrow" (2010)
- "Women in Science and Engineering in Canada" (2017)

CIHR
- "CIHR's Strategic Action Plan on Training" (2018)
- "Health Research Training Tools/Career Hub" (2019)
- "Individual Career Development Plans Portal" (2019)

**Associations and Councils**
- Association des doyennes et des doyens des études supérieures au Québec
- "Targeted Competencies in Graduate Programs" (2015)
- "Rapport déposé par le comité ADESAQ sur la nature, la structure et les activités associées à la maîtrise au Québec"
- Partie I (2007)
- Partie II (2009)
- British Columbia Degree Quality Assessment Board
- Responsibilities and Reporting
- Bureau de coopération interuniversitaire (BCI)
- Publications
- Campus Alberta Quality Council (CAQC)
- Handbook (2018)
- Canadian Association for Graduate Studies (CAGS)
- Rethinking the PhD
- Graduate Professional Development Program Survey: Towards a National Strategy
- Award for Excellence and Innovation in Enhancing the Graduate Student Experience (GSE)
- Award for Outstanding Graduate Mentorship
- "Investing in the Next Generation of Canadian Researchers" (2018)
- "Canadian Graduate and Professional Student Survey" (2007-2016)
- "Interdisciplinary Graduate Programs in Canada: Practice and Potential" (2014)
- "PhD Program Structures in Canada" (2012)
- Canadian Association of Postdoctoral Scholars (CAPS)
- "Canadian National Postdoctoral Survey" (2016)
- Canadian Association of University Teachers (CAUT)

- Education and Training
- Consortium of Canadian Graduate Student Professional Development Administrators (Consortium/CCGSPDA)
- Purpose and Objectives
- Council of Ontario Universities (COU)
- Graduate Studies Portal
- "Principles for Graduate Study at Ontario's Universities" (2017)
- "Faculty at Work: The Composition and Activities of Ontario Universities' Academic Workforce" (2018)

**Maritime Provinces Higher Education Commission (MPHEC)**
- Program Assessment Prior to Implementation Documents (Extensive)
- Ongoing Quality Assurance Documents
- Related Publications (Extensive)
  Ontario Universities Council on Quality Assurance (Quality Council)
- Quality Assurance Framework and Guide (2018)
- Educating for the Future: Learning Outcomes and Experiential Learning Symposium" (2018)
- Annual Reports
  Pierre Elliott Trudeau Foundation
- Programs
  Postsecondary Education Quality Assessment Board (PEQAB)
- Publications (Extensive)
  Saskatchewan Higher Education Quality Assurance Board (SHEQAB)
- Standards for Graduate Programs
  U15
- Publications
- Pre-Budget Submissions
  Universities Canada
- Priorities
- Publications (Extensive)
- Univation Report (2018)
- "Investing in Skills and Talent" (2018)
  University Affairs
- Graduate Matters Portal (Extensive)

**Private Sector Activities**
  Adoc Talent Management
- Professional Development Training and Courses
  BioTalent Canada
- Career Tools Portal
- Employer Tools Portal
  Conference Board of Canada (CBoC)

- Employability Skills
- Centre for Skills and Post-Secondary Education
- Platforms for the Future of Education and Skills in Canada
- "Getting to Work: Career Skills Development for Social Sciences and Humanities Graduates" (2018)
- "Gender Equity, Diversity, and Inclusion: Business and Higher Education Perspectives" (2018)
- "Are Canada's Business Schools Teaching Social and Emotional Skills?" (2018)
- "Inside and Outside the Academy: Valuing and Preparing PhDs for Careers" (2015)
  Higher Education Strategy Associates
- Articles on Academia (Extensive)
- "The State of Post-Secondary Education in Canada" (2018)
- "Producing Indicators of Institutional Quality in Ontario Universities and Colleges: Options for Producing, Managing and Displaying Comparative Data" (2008)
  Inside Higher Ed
- "Innovation in Higher Ed" (2018)
- "Smart, Succinct and Agile: Strategic Planning in an Age of Uncertainty" (2018)
- "Agile Teaching" (2018)
- "Graduate and Professional Education: An Ever-Changing Environment" (2018)
- "The Next Generation of Students" (2018)
- "Promoting Student Success" (2018)
- "The 2017 Survey of Admissions Directors: Pressure All Around" (2017)
- "New Challenges in Graduate and Professional Education" (2017)
- "Adaptive Learning, Transformational Education & Next-Generation Assessment" (2017)
- "The Evolving Quest for Student Success" (2017)
  Mitacs
- Strategic Plan (2016)
- Annual Reports (2012-2018)
- Publications (Extensive)
  PhDetectives
- "PhDetectives Skills and Careers Survey" (2019)
- "Understanding and Promoting PhD Competencies" (2019)

**International Activities**
  United States
  Council of Graduate Schools (CGS)
- Publications (Extensive)
- "Articulating Learning Outcomes in Doctoral Education" (2017)
- "Understanding PhD Career Pathways for Program Improvement" (2015)
  Future of Research
- Future of Research Website (2019)
- "Putting Mentoring at the Heart of Academia" (2019)

Institute for Academic Innovation (IAI)
- [Current Projects](#)
- [Forward Thinking](#)

PhDs.org
- [Resources](#)
- ["Succeeding in Graduate School" (2019)](#)

United Kingdom
Higher Education Policy Institute (HEPI)
- [Publications (Extensive)](#)

Russell Group
- [Leiden Statement (2014)](#)

Society for Research into Higher Education (SRHE)
- [Publications (Extensive)](#)

UK Council for Graduate Education
- [Publications (extensive)](#)
- [4th International Conference on Developments in Doctoral Education & Training](#)

Universities UK
- [Innovation, Growth and Skills Initiative](#)
- [Inclusion, Equality and Diversity Initiative](#)

Vitae
- [Non-profit professional development organization.](#)

Europe
European University Association (EUA)
- [Publications (Extensive)](#)
- [EUA Council for Doctoral Education](#)

League of European Research Universities (LERU)
- [Higher Education Portal](#)
- ["Excellent Education in Research-Rich Universities" (2017)](#)
- [Shanghai Statement on the Critical Role of Research-Intensive Universities in Global Innovation Ecosystems" (2016)](#)
- [Tokyo Statement on the Need for Long and Substantial Investment in Frontier Research at Research Intensive Universities" (2016)](#)
- [Hefei Statement on the Ten Characteristics of Contemporary Research Universities (2013)](#)

Australia
Australian Council of Graduate Research (ACGR)
- ["Strategic Plan 2020"](#)
- [Reports](#)
- [Practice Sharing](#)
- [Award for Excellence in Graduate Research Supervision](#)
- ["Research Training Implementation Plan" (2017)](#)
- [Indigenous Graduate Research Strategy](#)

Universities Australia
- [Very little information available.](#)
  Transnational
  Council for Highest Education Accreditation (CHEA)
- [Website](#)
  CHEA International Quality Group (CIQG)
- [Website](#)
  International Network for Quality Assurance Agencies in Higher Education (INQAAHE)
- [Mission and Values](#)