UOIT Integrated Academic Plan

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Provost & Vice-President, Academic (Interim)

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Table of Acronyms

FBIT	Faculty of Business and Information Technology
FEAS	Faculty of Engineering and Applied Science
FEd	Faculty of Education
FESNS	Faculty of Energy and Nuclear Science
FHSc	Faculty of Health Sciences
FSci	Faculty of Science
FSSH	Faculty of Social Sciences and Humanities
SMA	Strategic Mandate Agreement

Foreword

I am very pleased to share with you our 2018 Integrated Academic Plan for the University of Ontario Institute of Technology (UOIT). At most universities in Canada and around the world, perhaps the only thing as common as academic and strategic planning is the disdain and cynicism that often greets their announcement. Most of us engaged in the development of our Integrated Academic Plan have experienced good, bad, and mediocre planning exercises in the past. We have tried to use lessons from those experiences in developing this plan, underlain by a few simple principles:

- Academic planning should be rooted in the academy, with Deans leading planning within their Faculties that is then shared and discussed across the university
- Academic planning should directly inform support unit planning and university-wide allocation of human, operating and space resources
- Academic planning should be regular and accountable such that the data informing planning are also used to evaluate the effectiveness of actions resulting from the plan

Although I feel that this plan embodies the first principle above, the proof of its usefulness and integrity will be in fulfillment of the second and third principles. If you are reading this document, I urge you to share your perspective with me at the email address you see below. I may not agree with your perspective, but I will certainly listen to it carefully and with an open mind. Your comments *will* influence the next edition of our plan.

I thank all of our Faculty Deans for their hard work on this document, and I particularly acknowledge the incredible dedication of Brad MacIsaac, Dana Reeson, and Krista Hester in completing UOIT's 2018 Integrated Academic Plan.

Dr. Robert Bailey
Provost & Vice-President, Academic (Interim)
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Introduction

This year is one of significant change and transition for our university, including but not limited to significant transformation of our academic leadership. Dr. Akira Tokihuro started as Dean of Energy Systems & Nuclear Science in February, and Ms. Catherine Davidson became our University Librarian in June. In July, Dr. Peter Stoett joined us as Dean of Social Sciences & Humanities, Dr. Tarlochan Sidhu began his second term as Dean of Engineering & Applied Science, and our former Provost, Dr. Deborah Saucier, became President of MacEwan University. Later in the summer, our former Dean of Education, Dr. Michael Owen, moved into the same role at Brock and Dr. Maurice DiGiuseppe was appointed as Interim Dean of the Faculty of Education. In the fall, we completed our search for a new Dean of Business & Information Technology, and Dr. Michael Bliemel will start in that role on 1 July 2018. Finally, the Committee to Recommend a President completed its work with the confirmation by our Board of Governors of Dr. Steven Murphy as UOIT's next President. Steven will begin his presidency on 1 March 2018.

In addition to changing leadership, the university infrastructure continues to grow. We officially opened the Software Informatics Research Centre (SIRC) in November, which is now home to wonderful teaching and research space, the Registrar's Office, student study space, and Shop SIRC. Our campus is growing, but limited space remains an issue, and we are already planning a new building to provide an operational home for Student Life and our newly created Student Union, among other priority uses.

Along with leadership and infrastructure transformation at UOIT, we have significantly refined and integrated our approach to university planning. Oversight of strategic planning is one of the core responsibilities of our Board of Governors, but their ability to execute this responsibility efficiently and effectively relies on our university leadership team engaging all faculty and staff in the planning process. In the past year, we have completed both a renewal of our Strategic Plan (2017-2022; Appendix 1) and development of our second Strategic Mandate Agreement (SMA2 2017-2020; Appendix 2) with the Province of Ontario. A key reason for the success of both of these processes was genuine engagement of the entire university community. Collegial discussion in meetings of the Board of Governors and Academic Council, town halls, and other contexts cannot be either *pro forma* or "planning by referendum". What *is* necessary is informed, respectful, sometimes difficult conversations about the current state of the university, where we need to go, and how we might get there.

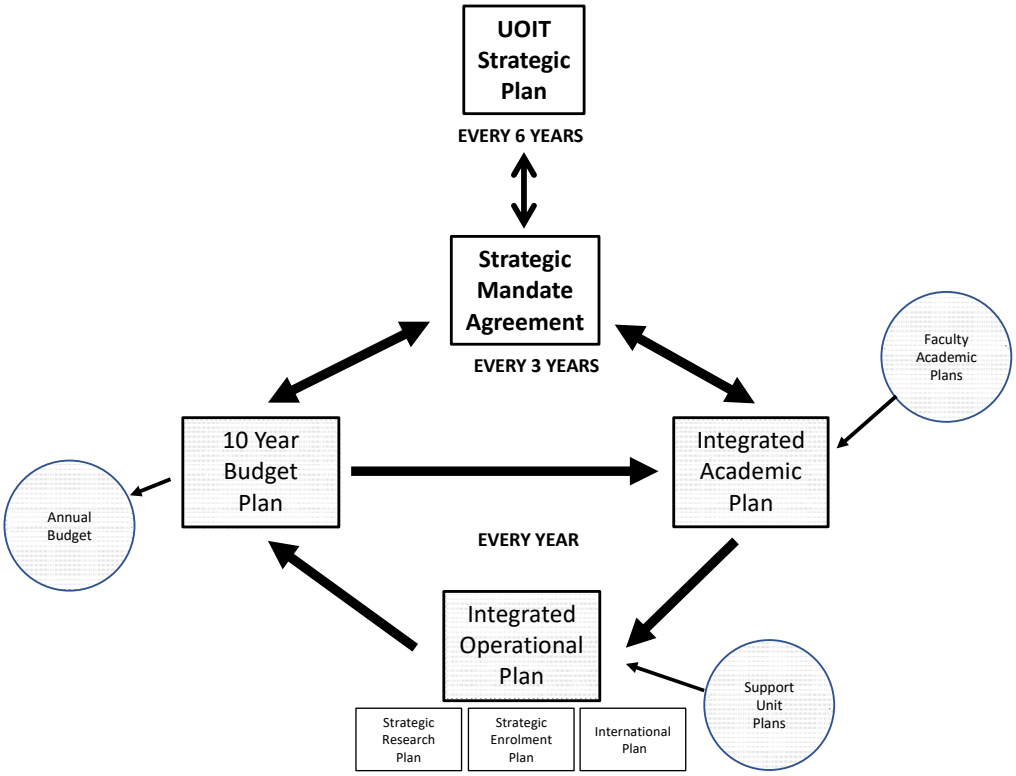
In future years, UOIT's Integrated Academic Plan will be revised annually and then used to inform annually updated support unit plans that will be incorporated into a university-wide Integrated Operational Plan. This in turn will directly inform both 10 year budget planning and the development of a budget for the coming fiscal year, and ultimately inform development of our next Strategic Plan and Strategic Mandate Agreement (Figure 1).

The main challenge in development of this year's Integrated Academic Plan was establishing a template and appropriate datasets, and then asking each of the Faculty Deans to engage their Faculty in the difficult but necessary work required for the development of a Faculty Academic Plan. Metrics describing where we are and we would like to go are always a work in progress. For example, we continue to work with our Office of Research Services and Library on the best ways to fully describe research activity and dissemination. Each Faculty's chapter in the Integrated Plan is derived from their planning process and focuses on their priority actions over three time frames: the current SMA (SMA2: 2017-2020), the next SMA (SMA3: 2020-2023), and the next decade (2018-2027). The priorities are also rooted in data presented at both the university (Appendix 3) and Faculty scales. These tables and figures provide a picture of where we are now with respect to enrolment, faculty complement, and research activity. They also enable

us to target where we want to be in the future and provide check points for subsequent reflection to see how well we are doing. Following the Faculty Academic Plans, the final chapter of this document summarizes what I have determined to be university-wide priority actions for these same three time frames. In this way, we can ensure that our planning process is informed by and informs both our present and future Strategic Mandate Agreements and Strategic Plans.

Finally, I emphasize that this is, as some have called it, our "Year Zero" Integrated Academic Plan. What you are reading is not an unchangeable blueprint for the coming years, but rather clearly stated, priority actions to achieve goals accompanied by metrics that will help us determine whether or not we will achieve these goals. In the next year, Academic Council and Faculty Councils will debate this document and hopefully provide substantive, constructive input for the 2019, Integrated Academic Plan.

Figure 1. The planning cycle at UOIT



Faculty of Business and Information Technology (FBIT)

1 Preamble

The Faculty of Business and Information Technology's mission is *to provide the best and most supportive learning and discovery environment possible for all the members of our community – students, faculty, staff as well as our external partners from industry, government and other universities and institutes worldwide. To ensure that we have, or create, the appropriate tools for all members of our community to "learn how to learn" and to continuously monitor what we are doing to maintain our excellent and innovative activities at the cutting edge.*

We see FBIT as a collaborative partner to enhance the uniqueness of UOIT by ensuring that learners in all disciplines have access to management and information technology components to complement their chosen careers – either through targeted "management" minors or joint majors directed to students outside FBIT, or through elective courses open to students from all Faculties and through courses or certificate programs offered through the Management Development Centre (MDC). The unique structure of FBIT ensures our programs are themselves collaborations across the streams of business and information technology.

Experiential learning is integrated into all our programs as the framework necessary to ensure appropriate knowledge translation. We make sure that our students are fully competent in the use, and extension of, industry standard technologies for each discipline.

Cutting edge research is at the core of an excellent education and learning environment. FBIT researchers are recognized internationally for the quality of our research and innovation. We identify three pillars of research, however, they all intersect and are all closely related with the use of information, communication, technology, data analytics and informatics.

- Improving business performance in a changing world
- The digital economy
- Privacy and Security

2 Executive Summary

2017-2020

- Work closely with the other Faculties at UOIT to enhance and strengthen the entrepreneurship program.
- Work closely with the CFA and CSE to ensure our Finance and Accounting majors are acquiring the appropriate skills to meet the technical and analytic skills that the financial industry needs. This will be an ongoing requirement as the advances in technology will continue to have a major impact on the tools available and how they are used.
- Work with our industry partners to build the new Technology Management majors in a manner that ensures our students are developing the appropriate skills and knowledge to meet the growing needs of technical knowledge, big data analytics and data security. This requires two new tenure track faculty members.
- Work closely with our industry partners in the expansion of the Networking and IT Security program and the Game Development and Entrepreneurship programs. SIRC has allowed us to

increase enrollments in these high demand programs with larger labs. This will require an additional Teaching Focused faculty member.
- Modify the delivery of the Master of IT Security (MITS) program by providing on-line or blended courses so more students are able to access it as well as take it as a part time program while they work.
- Modify the MITS program to introduce an optional specialization in Artificial Intelligence.
- Work with our partners at Durham College to build a new, joint program in applied management skills.
- Increase the research mentorship and support within the Faculty, especially for our junior faculty members.

In addition to the funds noted above we require budget for Compustat and CRSP databases as well as an expansion of our Bloomberg license for both research and teaching. We will need additional computers for the analytics and finance labs. With the growth of the BIT programs, the demands that will be made for analytics and recognizing the decision to move lab support to the IT teaching faculty was not the right move, we are looking to add back a lab technician. These increases, and the demands of our ever growing experiential learning opportunities, place more demands on our support team. Therefore, we request a new administrative staff support person.

2020-2023

- Continue to improve and enhance our working and learning environment through innovative use of technology and any other means available
- expand our experiential learning environment, incorporating more opportunities into our programs
- expand our external partner base through incorporating more of these opportunities into our lab research as well as our courses
- expand our collaborative programs both with other Faculties at UOIT, as well as across other institutions; especially with our diploma to degree programs
- continue to expand support for research students and faculty
- expand our community participation both through custom built MDC programs as well as through community focused research, internship and capstone opportunities.
- Look to meeting accreditation requirements for AACSB and EQUIS

3 Rationale

Tenure/Tenure Track and Teaching Faculty

Table 1 indicates the number of tenure/tenure track and teaching faculty members associated with each of our programs. Our ratio of teaching faculty to tenure/tenure-track faculty is quite high at approximately 50%. The nature of our programs leads to somewhat different qualification configurations than standard academic disciplines – our Accounting program requires a majority of the faculty to have a CPA designation; our Networking and IT Security Program requires a number of our faculty to be CISCO certified instructors and/or hold IT Security designations (such as CISSP) and our Game Development and Entrepreneurship program requires technical artists (who generally have MAYA or similar qualifications). That being said, in addition to our research (tenure/tenure-track) faculty, approximately 37% of our teaching faculty members hold a PhD (or are in the process of completing one) in their area of expertise. To support the growth of our BIT programs, we are looking to add one teaching faculty in 2018-19 and two tenure-track faculty in 2019-20.

Table 1 Tenured/Tenure Track and Teaching Faculty 2014/15-2019/20

	SMA1			SMA2		
Tenured/Tenure Track Teaching Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BCom	23.00 11.30	23.00 11.40	24.00 12.40	21.75 13.25	21.75 13.25	21.75 13.25
BIT	13.25 4.60	12.75 4.60	11.25 5.10	13.25 7.125	13.5 8.125	15.5 8.125
Graduate Diploma – Acct			0.25 0.50	0.25 0.5	0.25 0.5	0.25 0.5
MITS	2.00 0.10	2.00	3.00	2.25 0.125	2.25 0.125	2.25 0.125
MSc/PhD CS	0.50	1.00	1.25	2.25	2.25	2.25
Total Tenure/Tenure Track **Total Teaching Faculty**	**38.75** **16.0**	**38.75** **16.0**	**39.75** **18.0**	**39.75** **21.0**	**39.75** **22.0**	**41.75** **22.0**

Sessional and Contract Faculty

Table 2 looks at the proportion of courses in FBIT taught by sessional, or contract, faculty. There are areas in the Faculty where we deem it appropriate to hire practitioners since they are at the front and centre of a volatile part of the industry, such as Occupational Health and Safety (BCom), IT security law (MITS) or Business of Gaming (BIT), so we always expect to have a number of sessional instructors.

Table 2 Proportion of course sections taught by sessional or contract faculty 2014/15-2019/20

	SMA1			SMA2		
Subject Code	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BUSI	22.9%	16.2%	25.9%	36.4%	18.5%	17.0%
ECON	100.0%	100.0%	0.0%	0.0%	0.0%	0.0%
INFR	30.0%	24.7%	9.9%	30.1%	1.0%	0.0%
MITS	52.9%	6.7%	6.3%	13.3%	2.0%	2.0%
Total	**27.7%**	**19.3%**	**21.0%**	**32.5%**	**15.0%**	**10.8%**

Enrolment

Table 3 examines the enrollment in each of the undergraduate majors and the graduate programs. At the undergraduate level, the total number of students has decreased. This has been a planned reduction in the Bachelor of Commerce (BCom). With the build of our programs embedded in the colleges, there are significantly larger numbers moving from the college to 3rd year. Looking to 2018 we replaced the E-Commerce major with the major in Technology Management. This program has a focus on data analytics and information systems management. The Entrepreneurship program began in Fall 2016 and is open to students from every degree program offered at UOIT. The FBIT Incubator is a course within this program and has been very successful. The expectation is that most students will take this as a minor to complement a major either in business, IT or other degree programs.

The MBA has been put on hold while the Faculty considers where our direction should lead. The Master of Information Technology Security (MITS) was the first graduate program offered at UOIT we expect to grow this area more especially with the addition of AI. The Master and PhD in Computer Science program is offered jointly by FBIT and the Faculties of Science and Engineering. Relevant numbers are reported within the Faculty of Science numbers. Student numbers are still relatively small, however, the Faculty are very excited about the program and see many options for growth especially with big data and analytics.

Table 3 Undergraduate and graduate enrolment: Full-time equivalents (% part-time, average portion of full course load)

	SMA1			**SMA2**		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BCOMM	**1203.5 (5.9, 0.9)**	**1245 (5.4, 0.9)**	**1269.6 (5.8, 0.9)**	**1213.8 (5.8, 0.9)**	**1112.8 (5.8, 0.9)**	**1036.8 (5.8, 0.9)**
Accounting	109.4 (4.2, 0.8)	136.7 (4.8, 0.8)	260.5 (4.2, 0.9)	357.8 (4.2, 0.9)	328 (4.2, 0.9)	305.6 (4.2, 0.9)
Business	838.6 (4.6, 1)	835.5 (4.6, 1)	564.8 (7.1, 1)	330 (7.1, 1)	302.5 (7.1, 1)	281.8 (7.1, 1)
Business (ACTU)	8.3 (0, 0.9)	10.2 (9.1, 0.9)	5.9 (0, 1)	6.5 (0, 1)	6.0 (0, 1)	5.6 (0, 1)
Business Bridging Program	27.4 (16.7, 0.9)	23.1 (30.3, 0.7)	28.9 (20, 1)	33.5 (20, 1)	30.7 (20, 1)	28.6 (20, 1)
E-Commerce	0.7 (100, 0.4)					
Entrepreneurship			3.6 (0, 0.9)	11.2 (0, 0.9)	10.2 (0, 0.9)	9.5 (0, 0.9)
Finance	115.8 (6.8, 0.9)	130.5 (4, 0.9)	209.3 (6.4, 0.9)	256.5 (6.4, 0.9)	235.2 (6.4, 0.9)	219.1 (6.4, 0.9)
Marketing	63.9 (10.3, 0.9)	61 (6.1, 0.9)	120.5 (1.5, 0.9)	129.2 (1.5, 0.9)	118.4 (1.5, 0.9)	110.3 (1.5, 0.9)
Org Beh & Human Resources Mngt	39.4 (16.7, 0.8)	48 (7.4, 0.9)	76.1 (3.5, 0.9)	89.2 (3.5, 0.9)	81.8 (3.5, 0.9)	76.2 (3.5, 0.9)
BIT	**531.6 (4.5, 0.9)**	**484 (6, 0.9)**	**485.2 (3.8, 0.9)**	**505.1 (3.8, 0.9)**	**539.4 (3.8, 0.9)**	**558.4 (3.8, 0.9)**
Game Dev & Entrepreneurship		237.2 (5.7, 0.9)	228.3 (1.6, 0.9)	244.3 (1.6, 0.9)	260.9 (1.6, 0.9)	270 (1.6, 0.9)
Game Development	273.8 (3.9, 0.9)					
Information Technology	10.2 (9.1, 0.9)	16.6 (5.6, 0.9)	12.2 (0, 0.9)	11.1 (0, 0.9)	11.8 (0, 0.9)	12.2 (0, 0.9)
Information Technology Bridge	9.9 (33.3, 1.1)	5.5 (75, 1.4)	5.8 (66.7, 1.9)	1.8 (66.7, 1.9)	2.0 (66.7, 1.9)	2.0 (66.7, 1.9)
Networking & IT Security	237.7 (4, 0.9)	224.7 (5.3, 0.9)	238.9 (5.3, 0.9)	248.0 (5.3, 0.9)	264.8 (5.3, 0.9)	274.1 (5.3, 0.9)
Undergraduate Total	**1735.1 (5.5, 0.9)**	**1729 (5.6, 0.9)**	**1754.8 (5.2, 0.9)**	**1719.0 (5.2, 0.9)**	**1652.2 (5.2, 0.9)**	**1595.2 (5.2, 0.9)**

MBA	**6.5 (50, 0.7)**	**1.3 (50, 0.7)**	**0.3 (100, 0.3)**			
Business Administration	6.5 (50, 0.7)	1.3 (50, 0.7)	0.3 (100,0.3)			
MBAMIT	**1.3 (50, 0.7)**	**1.0 (0, 1)**	**1.0 (0, 1)**			
Business Admin/Information Tec	1.3 (50, 0.7)	1 (0, 1)	1 (0, 1)			
MITS	**8.7 (60, 0.6)**	**17.8 (27.3, 0.8)**	**13.2 (25, 0.8)**	**17.8 (27.3, 0.8)**	**25.8 (9.5, 0.9)**	**29.4 (2.6, 1)**
Information Tech Security	8.7 (60, 0.6)	17.8 (27.3, 0.8)	13.2 (25, 0.8)	17.8 (27.3, 0.8)	25.8 (9.5, 0.9)	29.4 (2.6, 1)
Graduate Total	**16.5 (55.6, 0.6)**	**20.1 (28, 0.8)**	**14.5 (27.8, 0.8)**	**17.8 (27.3, 0.8)**	**25.8 (9.5, 0.9)**	**29.4 (2.6, 1)**

International

Table 4 looks to the international enrollments at the undergraduate and graduate level. FBIT has consistently had international partnerships for faculty and student exchanges as well as internship opportunities across Europe and Asia. Our students will be working in the global economy, so our learning environment must be as diverse as possible to ensure understanding of cultural and economic differences and an integration of management of these differences within the workplace. Therefore, FBIT would like to see additional growth in both undergraduate and graduate international student numbers.

Table 4 International enrolment 2014/15-2019/20; % by degree

	SMA1			**SMA2**		
Degree	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BCOMM	4	4.2	4.9	4.5	4.6	4.7
BIT	6.4	5.8	5.7	4.9	5.9	7.2
MBA	46.2	0.0	0.0			
MBAMIT	46.2	0.0	0.0			
MITS	46	39.3	60.6	39.3	49.6	53.5

Experiential Learning

Experiential learning is a high priority for FBIT and we undertake various experiential learning activities that our faculty members integrate into our academic programs as well as into non-academic activities we support our students in undertaking. There are over 150 undergraduate courses in the faculty that integrate significant elements of experiential learning, through simulations, cases or projects based on a business need. At least one intensive and focused experiential learning course is a requirement for successful completion of all undergraduate programs in FBIT in either the Internship course, the Capstone course or the Incubator course. Table 5 provides details on participation in these courses.

Table 5 Students Who Participated in a Learning Experience

	SMA1			SMA2		
Academic Year	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Internship placements	68	67	86	90	100	125
Capstone projects	74	65	73	62	50	50
Incubator Companies	16	16	15	8	12	15
Incubator Students	29	28	25	12	20	25
Graduating Students	94.8%	95.80%	98.6%	93.5%	100%	100%

Experiential learning is not done just in the classroom, and FBIT is very supportive of students taking opportunities to attend or organize case competitions, conferences, symposia and other venues that advance their knowledge and skill set. We fund, or help find funding, for students to attend these types of events, to go on student exchanges to other counties, find internship opportunities abroad, provide summer research awards for undergraduate students to work with researchers in their labs and many other events. Our faculty members mentor our students extensively. Every group going to a case competition or simulation has at least one faculty member work with them to hone their skills for the event, every student club has a faculty member as a mentor and support to help and advise the students as they learn how to plan, manage, administer the group funds and activities. The student teams that organize competitions such as the Accounting Case Competition or the Management Case Competition, have a number of faculty and staff members help and support this organization.

Management Development Centre (MDC)

Table 6 details the activities of the MDC, which is the continuing education arm of FBIT. We provide professional development opportunities to local and municipal government employees and custom build programs for diverse industry partners from agriculture through digital technologies and protection service providers. There are significant opportunities for growth in custom training for private sector enterprises in the Toronto east area. We plan to capitalize on this by building solid relationships with targeted companies through a comprehensive sales plan. Already there is evidence of the benefit of such an investment.

Table 6 Continuing professional education enrolment 2014/15-2019/20 (# course enrolments)

	SMA1			SMA2		
Program	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Open Enrollment	182	202	251	240	260	260
Master's Certificate in Public Sector Management	26	27	31	28	28	28
Custom Programs	95	70	145	300	375	420
Total	**303**	**299**	**427**	**568**	**663**	**708**

Research

Research and research mentorship are an integral aspect of a vibrant, innovative and challenging learning environment. The scholarship of teaching and learning is an area of particular interest for both our research and teaching faculty, from developing case studies or simulations for use in our classes or student case competitions, or analyzing the impact of gamification on our student's learning and retention, through to the direct interaction of our graduate and undergraduate students with industry partners in projects in our labs. We anticipate further growth in the research funding we attract, and further growth in the numbers of students and industry partners and projects in our labs. Table 7 provides some indicators of our Faculty Research activities. This data cannot be looked at as a "stand-alone". Every advance achieved in research partnerships reflects positively on the capstone and internship landscape, just as every advance in those areas holds promise of advances in research partnerships. The strengthening of our industry research partnerships and the Engage and CRD grants is a clear indication of increased potential for industry research partnerships for the faculty going forward. Patents and licensing agreements are clear indicators of our faculty moving forward with the innovation agenda of UOIT and Canada. MITACS and other industry funded internships also show the growth of industry partnerships, potential research projects and greater innovation opportunities.

Table 7 Research Activity 2014/15-2019/20[1]

	SMA 1			**SMA 2**		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Grant and contract funding (tri-council)	**$737,674**	**$695,094**	**$652,684**	**$695,151**	**$836,475**	**$884,263**
Number of funded research projects	**28**	**27**	**28**	**28**	**34**	**36**
Peer-reviewed journal and conference papers	172	176	169	174	215	220
Books	4	5	15	2	2	3
Book chapters	4	1	5	2	3	4
Published case studies	1	1		1		1
Non-refereed papers	3	0	5	3	5	7
News interviews	18	15	21	20	18	20
Engage/crd grant	8	7	8	8	10	10
Patents/licences		2	1	2	1	1
Industry partners active in research	14	21	24	20	27	28
Post-Doc supervisions	5	4	3	2	3	4
Grad supervisions	63	59	72	75	80	85
Undergrad supervisions	45	42	82	85	90	95
MITACS funded interns	2	3	5	4	3	5

[1] Based on data available for 24 faculty members.

Post-Doc supervisions, graduate supervisions and undergraduate supervisions not only indicate the ability to successfully mentor others for research and development in the supervisor's field of expertise, but also integrate definitive experiential learning for the students supervised. Whether in an information technology or management discipline, the research student not only learns the tools for research and clear and succinct explication, but takes on roles such as mentor (TA-ing courses or mentoring other research students), evaluator (marking submissions), team lead or supervisor (for joint projects) and manager (for the team or project). Thus, it is an experiential learning opportunity for both the supervisor and student.

Faculty of Education (FEd)

1 Preamble

Through a consultation process, the Faculty of Education identified *"Everyone deserves a great education"* as its mission statement. This mission aligns with the University's priorities, acknowledges the Faculty's centrality within the University, and distinguishes it as a Faculty that provides high quality, research-informed education locally, nationally, and internationally. This statement succinctly captures the essence of what we believe a great Faculty of Education is about; enabling individuals with diverse interests, needs, and abilities to achieve their full educational potential across their life span, and to become discerning and productive citizens and professionals. Further, this statement implies that a "great" education is research-based, guided by sound public policy, and strengthened by strong partnerships with schools, school boards, businesses, not-for-profit organizations, and other stakeholders.

2 Executive Summary of Actions

Prioritized Actions 2017-2020

Priority 1: finalize the Faculty Strategic Plan which will emphasize the Faculty's leadership role in improving teaching and learning at UOIT; in supporting high quality education locally, regionally, and globally; and in enhancing informal professional and adult education environments.
Priority 2: identify three key research foci enabling inquiry into the "grand challenges" in education. These foci will include cross-faculty/cross-institutional research projects (e.g., student mental health, digital technologies for learning, education policy development). We will hire new tenure-track faculty to support these specialties as retirements take place and/or as growth occurs.
Priority 3: develop and institute a new university research centre to build on the expertise and innovations of the Educational Informatics Laboratory (EILab: http://eilab.ca) and the STEAM Maker Lab: http://janettehughes.ca/lab/) and act as a research/advisory hub on questions related to higher education in Ontario and internationally.
Priority 4: produce a multi-year plan for the modification/development of new undergraduate programs (e.g., a "dual degree" B.Ed. program), the assessment and expansion of graduate programs (e.g., joint Ed.D./Ph.D.), and the launch of systematic continuing education programs for post-graduate diplomas, AQ, professional seminars, and summer camps.
Priority 5: identify at least three international pathway opportunities for undergraduate and graduate students and expanded global learning opportunities for undergraduate and graduate students.

Prioritized Actions 2020-2023
Priority 1: Significant steps taken to finalize plans for a new Faculty of Education facility for occupancy in 2023 (or earlier). The new or refurbished facility will include spaces and resources to support enhanced individualized/personalized programming and integrative use of technologies in the B.Ed. program; specific capabilities to support the provision of hybrid (online and physically co-located) B.A. ESDT and graduate studies programs; and adequate resources for enhanced continuing education programs.

Priority 2: implemented three international pathway opportunities for undergraduate and graduate students. These pathway programs will contribute new financial resources to the Faculty and to the University as well as building a UOIT and Faculty of Education brand internationally.
Priority 3: implement a "sustainability" plan that integrates fully the need for scholarship to inform its instructional priorities and faculty recruitment.
Priority 4: transform the Centre for Professional Learning and Education (CPLE) into a university centre to lead instructional professional learning at UOIT. This leadership agenda will include a focus on the use of technologies for learning and for the integration of instructional design to enhance the quality of learning for faculty, staff and students.
Priority 5: The Faculty will have four international pathways (B.Ed. and 2+2 BA) programs with universities/education systems, possibly in the Caribbean, China, and Europe.
Priority 6: The Faculty will have a collaborative (possibly joint) Ed.D./Ph.D. program with another UOIT faculty or other institution. This will be a professional, cost-neutral, and potentially, revenue positive doctoral program servicing the eastern GTA and eastern Ontario.

3 Rationale

The Faculty of Education's organizational structure includes 17.5 Faculty members and 9 Staff members.

Faculty of Education Teaching Complement

The data in Table 1 indicate that the number of TTT professors decreased by one in 2014/15-2015/16 and 2015/16-2016/17. This was due to senior faculty retirements that were not replaced. It is expected that one TTT professor will be hired in 2019-20 to fill the currently vacated Faculty dean position that is presently filled by an interim dean. There have been two Teaching Faculty in the Faculty of Education in the period 2014-2018. This number will increase by one in 2018/19 on account of a special opportunity hire, and then by one in 2019-2020 when it is hoped the Faculty may be able to hire an Indigenous scholar to assist in the development and implementation of Indigenous education within the faculty and broader university.

Table 1 Tenured/Tenure Track Faculty and Teaching 2014/15-2019/20

	SMA1			**SMA2**		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Total Tenure/Tenure Track	17.50	16.50	15.50	16.50	16.50	16.50
Total Teaching Faculty	2.00	2.00	2.00	2.00	3.00	3.00

*Note: This chart is not separated among B.Ed., B.A., and Graduate Studies programs because all instructors teach across programs.

Table 2 indicate that a significantly larger proportion of sessional instructors teach in all three program areas (B.Ed., B.A., and Graduate). These values have fluctuated in the period 2014-2018; however, an overall increasing trend may be discerned.

Table 2 Proportion of course sections taught by sessional or contract faculty 2014/15-2019/20

	SMA1			SMA2		
	2014/15	**2015/16**	**2016/17**	**2017/18***	**2018/19**	**2019/20**
Total	**67.1%**	**45.2%**	**53.4%**	**63.0%**	**50.0%**	**47.0%**

*Assumptions: 4 sections of B.Ed. (2 PJ, 2 IS), stable BA and Graduate numbers, +1 TF in 18/19; +1 TF in 19/20; based on course equivalents.

Faculty of Education Program Developments

B.Ed. Program Developments: The 2014 provincial adjustments to reduce half of the funded B.Ed. students within teacher education programs and the decision to lengthen initial teacher education programs from two semesters to four has challenged the Faculty of Education at UOIT to examine its B.Ed. program content, specializations, and the modes in which learning occurs (e.g., co-located, online). The central issues surround sustainability in a period of uncertain resources while preparing for a reverse in demand. The Ontario Ministry of Education's 2014-15 teacher supply and demand forecasting model suggests that Ontario's oversupply of teachers has peaked. This information, coupled with the Ontario College of Teacher's Transition to Teaching report, and the vastly decreased numbers of B.Ed. graduates across the province, suggests that a teacher shortage may be on the horizon. The B.Ed. program must consider how to accommodate additional teacher candidates should a shortage begin to develop, and the province expand B.Ed. admissions once again. While the Faculty may not re-introduce the concurrent education program in its prior format, there may be opportunities for the Faculty to develop new "dual" degrees and an international option.

B.A. ESDT Program Developments: The Faculty of Education is planning to propose an additional stream within the current B.A. ESDT program, tentatively called "Educational Design Studies". The focus of this program will be the design and implementation of virtual and hybrid environments within which learning can occur—a radical reconceptualization of teaching for the 4th Industrial Revolution. These environments will include serious games, simulations, and augmented reality contexts. BA ESDT program enrolment has been steadily increasing over the course of the last four years, and we project modest increases in these enrolments in 2018/19 and 2019-20 because of more intensive and focused recruitment efforts.

Graduate Program Developments: In the past, the Faculty has expressed an interest in developing a doctoral program. However, with a small permanent faculty complement, a Ph.D. program is likely not feasible – financially or academically. Over the next five years, the Faculty will consult internally and externally on the value of a doctoral program to its academic mission, the range and scope of professional doctoral programs (e.g., Doctor of Education, Ed.D.) offered in the province, and potential opportunities to collaborate with other professional programs at UOIT and with faculties of education across Ontario and beyond.

Table 3 Undergraduate and graduate enrolment: Full-time equivalents (% part-time, average portion of full course load)

	SMA1			SMA2		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BA	**28.8 (47.8, 0.6)**	**43.7 (43.5, 0.6)**	**55.0 (40.3, 0.7)**	**64.6 (40.3, 0.7)**	**52.0 (40.3, 0.6)**	**66.5 (40.3, 0.7)**
Adult Education & Digital Tech	28.8 (47.8, 0.6)	20.3 (40.6, 0.6)	8.3 (42.9, 0.6)	3.2 (42.9, 0.7)	2.6 (42.9, 0.6)	3.3 (42.9, 0.7)
Educ Studies & Digital Tech		23.4 (45.9, 0.6)	46.7 (39.7, 0.7)	61.4 (39.7, 0.7)	49.4 (39.7, 0.6)	63.1 (39.7, 0.7)
BEd	**259.6 (0, 1)**	**140.0 (0.7, 1)**	**265.3 (0, 1)**	**256.6 (0, 1)**	**258.5 (0, 1)**	**263 (0, 1)**
Education (Concurrent) – 1 Year Program	17.6 (0, 0.9)	13.5 (6.3, 0.8)	10.7 (0, 0.9)	9.0 (0, 1)	0.0 (0, 0)	0.0 (0, 0)
Education (Consecutive) - Intermediate/Senior	83.4 (0, 1)	35.0 (0, 1)	62.0 (0, 1)	74.0 (0, 1)	83.2 (0, 1)	84.7 (0, 1)
Education (Consecutive) - Primary/Junior	158.6 (0, 1)	91.5 (0, 1)	192.6 (0, 1)	174 (0, 1)	175.3 (0, 1)	178.3 (0, 1)
Undergraduate Total	**288.4 (7.2, 0.9)**	**183.7 (14.6, 0.9)**	**320.3 (9, 0.9)**	**329.2 (9, 0.9)**	**310.6 (9, 0.9)**	**329.4 (9, 0.9)**
DIPL	**0.6 (100, 0.3)**	**3.3 (25, 0.8)**	**3.4 (88.9, 0.4)**	**6.0 (47.6, 0.3)**	**6.6 (79.8, 0.4)**	**6.6 (79.8, 0.4)**
Educ & Digital Technologies	0 (0, 0)	3.3 (25, 0.8)	3.4 (88.9, 0.4)	6.0 (47.6, 0.3)	6.6 (79.8, 0.4)	6.6 (79.8, 0.4)
Educ Technology & Informatics	0.6 (100, 0.3)	0.0 (0, 0)	0.0 (0, 0)	0.0 (0, 0)	0.0 (0, 0)	0.0 (0, 0)
MA	**7.6 (75, 0.5)**	**13.2 (60.9, 0.6)**	**9.0 (62.5, 0.6)**	**4.5 (62.5, 0.6)**	**2.6 (53.6, 0.6)**	**2.1 (24, 0.8)**
Education	7.6 (75, 0.5)	13.2 (60.9, 0.6)	9.0 (62.5, 0.6)	4.5 (62.5, 0.6)	2.6 (53.6, 0.6)	2.1 (24, 0.8)
MED	**39.6 (88.5, 0.4)**	**57.0 (82.1, 0.4)**	**42.6 (86, 0.4)**	**49.7 (86.5, 0.4)**	**47.1 (88.1, 0.4)**	**43.9 (87, 0.4)**
Education	39.6 (88.5, 0.4)	57.0 (82.1, 0.4)	42.6 (86, 0.4)	49.7 (86.5, 0.4)	47.1 (88.1, 0.4)	43.9 (87.0, 0.4)
Graduate Total	**47.8 (86.9, 0.4)**	**73.5 (77.6, 0.5)**	**55.0 (83.3, 0.4)**	**60.2 (80, 0.4)**	**56.3 (86.3, 0.4)**	**52.5 (84.9, 0.4)**

In terms of international students, presently, the Faculty of Education has few, if any, international students at either the undergraduate or graduate levels (Tables 4). This constitutes a missed opportunity. With the B.A., M.A. and M.Ed. programs, international students are welcomed and, as a result of our online modes of learning, more easily integrated. Depending on the numbers of international students and their physical locations and time zones, the flexibility of online programming could permit the employment of instructors and/or tutors in time zones closer to those of the students, thereby reducing the constraints on enrolment.

Table 4 International enrolment 2014/15-2019/20; % by degree

	SMA1			SMA2		
Degree	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BA	0.0	0.0	0.4	0.0	0.0	0.0
BEd	0.4	0.0	0.4	0.4	0.4	0.4
DIPL	0.0	0.0	0.0	0.0	0.0	0.0
MA	0.0	0.0	0.0	0.0	0.0	0.0
MED	0.0	0.0	2.3	1.9	0.0	0.0

The Faculty of Education recognizes the many benefits of experiential/hands-on learning in post-secondary education, and is committed to expanding and enhancing opportunities for experiential learning in all of its programs. Table 5 shows the percentage of graduating students who participated in experiential learning activities. The large percentage attributed to the Faculty of Education is largely attributable to compulsory in-school practicums required of all B.Ed. students. Currently, fewer experiential learning opportunities are provided for B.A. ESDT, M.A., and M.Ed. students, partly because these programs are offered fully online. Nevertheless, we may increase and/or enhance the experiential learning opportunities in all of our programs (online and face to face) by including capstone projects and community-based research projects in our curricula.

Table 5 Percentage of Graduating Students Who Participated in an Experiential Learning Experience

	SMA1			SMA2		
Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Education	98.4	96.4	58.3	89.0	90.0	95.0

Further, the Faculty offers professional development and community outreach programs through its Centre for Professional Learning and Education (CPLE), including various Additional Qualification (AQ) courses for in-service teachers, and a variety of spring and summer camps for school aged children, parents, and teachers. Table 6 (below) lists enrolment in the Faculty of Education's continuing education programs offered through the Faculty's CPLE, including AQ/ABQ courses for in-service teachers and summer camps for kids. The steady increase in summer camp enrolments stands as a testament to the great success of these highly beneficial and highly visible community outreach programs.

Table 6 Continuing education enrolment 2014/15-2019/20 (# course enrolments)

	SMA1			SMA2		
Program	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
AQ/ABQ	372	218	193	234	240	250
Camps	460	705	1310	1518	1525	1550
Total	**832**	**923**	**1503**	**1,752**	**1,765**	**1,800**

Faculty Research Activity

Researchers in the Faculty of Education conduct research in many areas, including Learning systems and technologies across the life span, Foundations of education (technologies and learning, leadership, law, history, ethics, psychology, gender/diversity, indigenous education, social determinants, mental health, public policy, higher education), and Multiple Literacies. A limited number of Faculty research activity values are provided in Table 7. The data indicates that tri-council grant and contract funding in the Faculty of Education has increased significantly over the three year period while the number of funded projects remained relatively constant. There is a need for the Faculty to increase its research funding and research output, and to attract and support more graduate students. Introduction of a doctoral program will help attract more graduate students to the faculty and may also increase research funding since granting agencies may favour programs which include opportunities for doctoral student training.

Table 7 Research Activity 2014/15-2019/20

	SMA1			**SMA2**		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Grant and contract funding (tri-council)	$220,633	$199,646	$320,779	$162,394	159,332.00	170,067.00
Number of research projects	5	4	5	3	3	3

Faculty of Education Challenges

Notwithstanding the plans and priorities described in this summary, the Faculty of Education faces many challenges. First, the Faculty needs to consider the place of FNMI students and faculty, and develop a more diverse faculty and student complement over time. The change to the provincial funding formula and student numbers for the B.Ed. Program created an ongoing challenge for the Faculty of Education at UOIT. While the Primary/Junior (P/J) complement remains strong, the Intermediate/Senior (I/S) component is weaker. However, current demographic trends show increasing need for I/S enrolments, especially in STEM disciplines. In the meantime, the Faculty needs to diversify its programs and increase the number of undergraduate (B.A., B.Ed. international), and graduate students. This will be a multi-year process requiring patience on the part of Faculty and central administration. Over this time, a number of senior professors may move or retire, and their positions will need to be replaced by equivalent tenure-track faculty or Teaching Faculty. In the short-run, replacing some tenured-tenure track faculty with Teaching Faculty will help reduce reliance on contingent instructors. Furthermore, given the Faculty's general focus on education and digital technology (especially in the BA ESDT and Graduate Studies programs), the Faculty, through its operating budget and research grants, must consider investing in emerging technologies and highly skilled individuals (e.g., system operators and technicians) to support implementation and maintenance.

Faculty of Energy Systems & Nuclear Science (FESNS)

1 Preamble

The Faculty of Energy System and Nuclear Science was founded at the start of UOIT, with the vision of educating the new workforce needed to meet Canada's growing nuclear and energy industries. With UOIT located near to power generation stations in Pickering and Darlington, and Niagara Falls, and with nuclear and hydro respectively meeting 60-65% and 25-30% of Ontario's electricity demand, the region stands out in many respects for its efforts to mitigate climate change.

Our CEAB-accredited B.Eng. in Nuclear Engineering is unique to Canada. One of our key missions is thus to deliver and maintain this accredited program in order to directly support Canada's nuclear operators. We also provide HQP and expertise to Canada's nuclear science R&D, the regulatory framework and within the nuclear industry supply chain. Ontario hosts a legacy nuclear industry of national importance.

To our future. The energy sector, in light of climate change geo-politics and emphasis on renewable energy sources is changing. There are key institutional and social movements, and commitments toward ideas such as, "net zero carbon", "innovation" and "entrepreneurship". Multinational institutions including those in the non-energy sectors (financial, IoT, software etc.) are thinking about their energy and carbon "footprints". In anticipation of the emerging, savvy workforce needed in "energy systems" and "smart energy", FESNS is planning ahead. At UOIT we have the necessary "pillars" along the lines of our energy slogan, "people, machines, outcomes". That is, in terms of Faculties, FESNS, FEAS and FSSH, we have expertise in both "people" and "machines" in order to contribute to and influence positive, sustainable outcomes.

So, as the stakeholder communities in energy generation and consumption expect, we plan to fulfill both our call and the University's mission with the following objectives.

- To respond to the changing demographics and technical challenges of the nuclear industry with consideration of the industry's transition under continued operation, refurbishment and decommissioning. The industry horizons are here within SMA2, SMA3, the Next Decade and beyond (~2060).
- To respond to the emerging initiatives in the transitional consumer energy and energy-dependent means that require energy analysis, identification of options and change in the paradigm of human – energy consumption. Develop an Energy Systems emphasis within our Faculty. The socio-technical calls for change in Ontario and Canada are ongoing, pending and projected to 2050. It is thus within SMA2, SMA3, the Next Decade and beyond.

2 Executive Summary

2017-2020

- Continue to offer and maintain an accredited B.Eng. in Nuclear Engineering. Beyond the current accreditation effort within SMA2, we anticipate some programmatic adjustments to address the industry's needs. Offer a new degree, B.Tech. in Sustainable Energy Systems as a means to address the workforce needs in "energy analysis and energy options", within the context described above. The first cohort is planned to start during SMA 2, Fall 2019. Add one TF to establish a sustainable energy system program

- Continue to offer minors, Graduate Diplomas, professional traineeship such as AOOM to support our stakeholders and the transitions in industry.
- Strive to grow our graduate thesis and scholarly research output corresponding to our expert knowledge in energy systems and nuclear energy analyses and R&D.
- Strategically add two "engineer-in-residence", one each from OPG and Bruce Power to strengthen our ties to their refurbishment and decommissioning efforts already ongoing and continuing within the period.

2020-2023

- Re-initiate the joint FESNS/FEAS B.Eng. in Energy Systems Engineering to address the workforce needs in energy systems through an accredited program. Begin the development effort during SMA2. Contingent upon growth in enrolment, an additional 2 TTT/TF may be needed into the Next Decade.
- Provide intensive training, bridge programs, and customized programs for students and professionals wishing to transition (bridge) between college and university, and per technical re-training and re-skilling in response to energy sector needs.
- Grow our visibility in and contribute to the societal discourse, roles, responsibilities and leadership in energy and sustainability in GTA, Ontario, Canada and beyond. Leverage and enhance our collaborative designation as a Teaching City.

3 Rationale

Table 1 Tenured/Tenure Track Faculty and Teaching Faculty 2014/15-2019/20

	SMA1			**SMA2**		
Tenured/Tenure Track Teaching Faculty	**2014/15***	**2015/16***	**2016/17***	**2017/18**	**2018/19****	**2019/20**
Nuclear Engineering	8.25 0.50	8.25 0.50	8.25 0.50	8.25 0.50	8.25 0.50	8.25 0.50
Energy Systems	3.25 0.50	3.25 0.50	3.25 0.50	3.25 0.50	3.25 0.50	3.25 0.50
Health Physics & Radiation Science	3.00 0.00	3.00 0.00	3.00 0.00	3.00 0.00	3.00 0.00	3.00 0.00
Total Tenure/Tenure Track **Total Teaching Faculty**	**13.50** **1.00**	**13.50** **1.00**	**13.50** **1.00**	**13.50** **1.00**	**13.50** **1.00**	**13.50** **1.00**

**Industrial Associate Chair hired ahead of retirement in 2019/20.
***BTech, Sustainable Energy Systems. 1 new hire to support BTech

Monitoring and changing the proportion of course section taught by sessional or contract faculty is a multi-year process. We have generally been able to reduce the percentage as shown. However, we are in need of additional faculty members in order to reduce our dependence further.

Table 2 Proportion of course sections taught by sessional or contract faculty 2014/15-2019/20

	SMA1			SMA2		
Subject Code	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
ENGR	42.1%	29.6%	20.0%	6.0%	5.0%	5.0%
NUCL	47.8%	20.0%	39.6%	35.0%	30.0%	30.0%
RADI	66.7%	50.0%	46.2%	22.0%	20.0%	20.0%
Total	**47.4%**	**30.2%**	**34.1%**	**27.0%**	**25.0%**	**25.0%**

With the first graduating class of nuclear engineers in 2007, plus an active training program called Advanced Operations Overview for Managers, the Faculty provides both new graduates and recognized post-graduate education in close collaboration with Ontario's nuclear power generation stakeholders. The Faculty also graduated some 15 Radiation Science and 10 Energy Systems Engineering students for more than five consecutive years. Almost all graduates are now employed in the energy and radiation science fields.

Undergraduate enrolment and projections. The majority of our undergraduate enrolment is under B.Eng., Nuclear Engineering. About 15% are under B.Sci., Health Physics and Radiation Science (HP&RS). The HP&RS is well suited for a focused student with this specific interest. The discipline is strongly linked to our graduate research in HP&RS and, externally to the importance of radiation protection and security at stakeholder institutions. Finally, we are developing a B.Tech., in Sustainable Energy Systems to start in Fall 2019. The initial targeted cohort is 30 and expected to offset any near-term decrease in demand for nuclear engineers. However, as our Provincial nuclear operators undertake refurbishment and decommissioning at existing nuclear generation stations, there may be an acute demand toward the end of SMA2, during SMA3 and succession plan hires in the Next Decade.

Graduate enrolment and projections. The Graduate Diploma is expected to remain in demand due to major initiatives at the Provincial nuclear operators as noted. However, we acknowledge that both stakeholders may transition their operations as electricity demand slowly declines. Thus the MASci. and M.Eng., currently maintained serve to address both career advancement and transition goals. At both the MASci. and Ph.D. levels, both degrees are research-contract driven. The graduate students are thus partially to fully-funded from research contracts.

Table 3 Undergraduate and graduate enrolment: Full-time equivalents (% part-time, average portion of full course load)

	SMA1			SMA2		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BASc	**4.2 (20, 0.8)**		**0.5 (0, 0.5)**	**0.9 (0, 0.9)**	**0.0 (0, 0)**	**0.0 (0, 0)**
Nuclear Power	4.2 (20, 0.8)		0.5 (0, 0.5)	0.9 (0, 0.9)	0.0 (0, 0)	0.0 (0, 0)
BENG	**294.0 (1.1, 0.8)**	**282.4 (3.9, 0.8)**	**267.8 (2.2, 0.8)**	**267.3 (2.2, 0.9)**	**237.2 (2.2, 0.9)**	**232.6 (2.2, 0.9)**
Energy Systems Engineering	55.9 (0, 0.9)	38.7 (4.1, 0.8)	22.0 (0, 0.7)	11.9 (0, 0.9)	0.0 (0, 0)	0.0 (0, 0)

Nuclear Engineering	238.1 (1.4, 0.8)	243.8 (3.8, 0.8)	245.8 (2.4, 0.8)	255.4 (2.4, 0.9)	237.2 (2.4, 0.9)	232.6 (2.4, 0.9)
BENGM	**13.3 (10.5, 0.7)**	**8.9 (12.5, 0.6)**	**9.3 (8.3, 0.8)**	**3.5 (8.3, 0.6)**	**3.1 (8.3, 0.6)**	**3.1 (8.3, 0.6)**
Energy Systems Eng & Mgt	4.9 (16.7, 0.8)	2.9 (16.7, 0.5)	3.8 (20, 0.8)	1.0 (20, 0.6)	0.0 (20, 0)	0.0 (20, 0)
Nuclear Engineering & Mgmt	8.4 (7.7, 0.6)	6.0 (10, 0.6)	5.5 (0, 0.8)	2.5 (0, 0.6)	3.1 (0, 0.6)	3.1 (0, 0.6)
BSC	**37.4 (2.3, 0.8)**	**29.8 (2.6, 0.8)**	**33.3 (4.7, 0.8)**	**31.4 (4.7, 0.7)**	**19.9 (4.7, 0.5)**	**49.2 (4.7, 0.7)**
Health Physics & Radiation Sci	37.4 (2.3, 0.8)	29.8 (2.6, 0.8)	33.3 (4.7, 0.8)	31.4 (4.7, 0.7)	19.9 (4.7, 0.5)	49.2 (4.7, 0.7)
Undergraduate Total	**348.9 (1.9, 0.8)**	**321.2 (4.1, 0.8)**	**310.9 (2.6, 0.8)**	**303.1 (2.6, 0.9)**	**260.2 (2.6, 0.9)**	**285.0 (2.6, 0.9)**
DIPL	**12.7 (97.5, 0.3)**	**15.1 (97.9, 0.3)**	**35.7 (97.3, 0.3)**	**47.9 (98.7, 0.3)**	**23.6 (97.3, 0.3)***	**22.4 (97.1, 0.3)***
Fuel, Materials and Chemistry	0.6 (100,0.3)	0.0 (0, 0)	0.0 (0, 0)	0.0 (0, 0)	---	---
Health Physics	0.3 (100, 0.3)	0.3 (100,0.3)	1.0 (0, 1)	0.0 (0, 0)	---	---
Nuclear Design Engineering	10.2 (100, 0.3)	7.2 (100,0.3)	10.8 (100,0.3)	9.0 (100,0.3)*	---	---
Operation and Maintenance	0.0 (0, 0)	6.0 (100,0.3)	22.6 (98.6, 0.3)	37.6 (100, 0.3)**	---	---
Reactor Systems	1.3 (50, 0.7)	0.3 (100,0.3)	0.3 (100,0.3)	0.3 (100,0.3)***	---	---
Safety, Licensing & Reg. Affa.	0.3 (100, 0.3)	1.3 (50, 0.7)	1.0 (0, 1)	**1.0 (1,0)****	---	---
MASC	16.8 (28.6, 0.8)	14.4 (40,0.7)	11.4 (47.1, 0.7)	14.8 (31.6, 0.8)	12.6 (20.5, 0.9)	10.1 (12.8, 0.9)
Nuclear Engineering	**16.8 (28.6,0.8)**	**14.4 (40, 0.7)**	**11.4 (47.1,0.7)**	**14.8 (31.6,0.8)**	**12.6 (20.5,0.9)***	**10.1 (12.8, 0.9)***
MENG	9.2 (73.7,0.5)	9.1 (81,0.4)	12.7 (73.1, 0.5)	9.8 (76.2,0.5)	8.4 (72.6, 0.5)	7.7 (77.2,0.5)
Nuclear Engineering	8.9 (72.2,0.5)	8.5 (78.9,0.4)	11.8 (69.6, 0.5)	9.8 (0, 0.5)	8.4 (0, 0.5)*	7.7 (0,0.5)*
Nuclear Engineering - UNENE	**0.3 (100, 0.3)**	**0.6 (100, 0.3)**	**0.9 (100, 0.3)**	**0.9 (100, 0.3)****	**0.9 (100, 0.3)**	**0.9 (100, 0.3)**
PHD	15.7 (40.9, 0.7)	14.3 (50,0.7)	12.3 (55,0.6)	14.7 (42.9, 0.7)	12.9 (25.5, 0.8)	15.8 (6.1, 1)

Nuclear Engineering	**15.7 (40.9, 0.7)**	**14.3 (50, 0.7)**	**12.3 (55, 0.6)**	**14.7 (42.9, 0.7)**	**12.9 (25.5, 0.8)**	**15.8 (6.1, 1)**
Graduate Total	**54.4 (66.7, 0.5)**	**52.9 (74.8, 0.5)**	**72.1 (84, 0.4)**	**87.2 (85.2, 0.4)**	**57.5 (75.3, 0.5)**	**55.9 (72.9,0.5)**

*GDip, MASc, MENG students from nuclear utilities (OPG) are subject to the annual workforce planning of the utility.
**we expect to be maintained at this projected lower level.

Table 4 International enrolment 2014/15-2019/20; % by degree

	SMA1			**SMA2**		
Degree	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BASc	0.0	0.0	0.0	0.0	0.0	0.0
BENG	4.9	4.2	4.5	5.2	4.6	3.8
BENGM	0.0	11.2	11.7	28.4	32.0	32.6
BSC	24.3	28.1	27.6	16.1	0.0	0.0
DIPL	0.0	0.0	0.0	0.0	0.0	0.0
MASC	0.0	13.9	26.3	33.8	30.7	19.4
MENG	21.7	22.0	7.9	20.4	33.2	24.8
PHD*	12.7	7.0	8.1	27.2	37.2	40.1

Table 5 Percentage of Graduating Students Who Participated in an Experiential Learning Experience

	SMA1			**SMA2**		
Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Energy Systems and Nuclear Science	89.7	88.1	81.6	86.8	*	0.0

Table 6 Continuing education enrolment 2014/15-2019/20 (# course enrolments)

	SMA1			**SMA2**		
Program	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Advanced Operators Overview for Managers (AOOM)	50	61	63	20	20	20
Graduate Diploma	13	15	36	48*	To track	To track
CNSC	000	000	000	25	To track	To track
Total	**63**	**76**	**99**	**93**	To track	To track

*(153 enrolled x 0.3) + 2 FT = 48

Other than the training program, Advanced Operations Overview for Managers (AOOM), delivered in support of a Provincial nuclear operator, and the Graduate Diploma in Nuclear Engineering, we currently do not have any other continuing education initiatives. AOOM has produced more than 100 trainees in a short period of existence. The training content is being sought by others in the Canadian nuclear industry.

As noted, while the number of research projects are steady, grant and contract funding can vary with the start and end cycle of respective projects. In order to further develop our reputation in energy systems and nuclear engineering, we need to maintain or gradually grow our research and scholarly activities. This includes being awarded competitive awards and proposing cutting edge R&D projects announced by funding agencies and bodies.

Table 7 Research Activity 2014/15-2019/20

	SMA1			**SMA2**		
	2014/15	**2015/16**	**2016/17**	**2017/18***	**2018/19**	**2019/20**
Grant and contract funding (tri-council)	$418,356	$812,678	$465,140	511,000	560,000 (target)	616,000 (target)
Number of research projects	16	17	15	15***	16	17
Number of disseminations (peer-reviewed)	00 (0)	00 (0)	00 (0)	to be tracked	---	---
Median h index	Not recorded	Not recorded	9**	9	10	11
Faculty specific metrics	none	---	---	---	---	---
Number of contracted reports	000	000	000	000	000	000

*as of Nov. 17, 2017, as provided by the RO (J. Freeman)

**an estimated as we have not tracked the Median h-index. We plan to begin tracking. Thus current estimated and targeted improvement.

*** current and incremental targeted improvement

Faculty of Engineering and Applied Science (FEAS)

1 Vision

The mission of the Faculty of Engineering and Applied Science is to deliver the highest quality of engineering education, through teaching and research excellence, state-of-the-art educational environment and innovative programs. It aims to provide our engineering graduates with the knowledge and skills needed to succeed and become leaders of tomorrow. The Faculty of Engineering and Applied Science is market oriented, and connects to the needs of industry and communities, striving to contribute to sustainable economic development through innovative research and highly qualified personnel, and the overall betterment of society.

2 Executive summary of actions

We believe that team work is an essential recipe for success and the only way to achieve our goals. We utilize the quality of our engineering programs to promote our Faculty as the place to be for future engineering education. The innovation and successful research achievements are the key for building an international recognition.

2017 – 2020

- Continue to support and strengthen existing programs with adequate resources, specifically Mechatronics Engineering which will be maturing and will be evaluated for accreditation during this period. To support Mechatronics, 6 additional tenure/tenure track faculty are required to teach the projected 23 additional lecture sections by 2020 (12 in 2018/19). As the program matures, lab requirements will intensify so a Lab Technician and additional TAships are required to support to the projected 50 additional lab section.

- Obtain approvals for new innovative and market-oriented programs (Infrastructure Engineering).
- Formation of research groups to focus our research efforts and build reputation in these areas.
- Enhancement of experiential learning (Coop/Internship, Capstone) activities linking to our academic programs. Establish the Engineering Innovations Design Studio to encourage student entrepreneurship. Focus our efforts on developing and implementing outreach activities that will engage FEAS with the local community and professional engineering organizations. The overall student enrolment growth will strain our support services. It is expected that we will require: an Academic Advisor, an Engineering Outreach Coordinator, an Internship Coordinator. Additionally, to enhance the in-class projects we are looking into the establishment of at least 5 Design Fellows and securing funding to support hands-on design projects
- Seek innovative avenues to address and improve the quality of service courses offered by other units including, but not limited to, collaborate with School of Graduate and Postdoctoral Studies to address the gaps in policies and procedures to enhance quality.
- Continue to be distinguished by maintaining the existing Technology-Enriched Learning Environment (TELE) program.

2020 – 2023

- Continue efforts towards strengthening the outcome-based learning process and continual improvement of the curriculum.

- Implementation of Infrastructure Engineering approved in SMA2. Additional faculty and corresponding space will be required If the program is implemented.
- Enhance research activities and funding by providing more faculty support through a dedicated academic appointment and an engineering focused grant writer
- Continue focus and efforts on outreach activities, connecting the Faculty to the local community and professional engineering organizations.
- Continue and enhance our support for students in all areas, including leadership development, entrepreneurship and extra-curricular activities, etc.

3 Rationale

Mechatronics Engineering

- Although the implementation of the Mechatronics Engineering program in 2016-17 had included an intake agreement of 50 students, the success of the program realized an actual intake of over 100 high quality students (minimum mark requirements of 80% admission avg) in its initial year and continues to grow (see table 3).
- A high priority for the continued success of the program is to receive full accreditation by the Canadian Engineering Accreditation Board. To support this, improvements are required on our dangerously high student:faculty ratio (see table 3) which is currently one of the highest in the University, and amongst the highest within all Engineering Faculties in Ontario. The general understanding is that a student:faculty ratio of 25 is needed for achieving successful CEAB accreditation. In addition, common feedback received during our CEAB visits and external undergraduate program review visits have noted concerns on our high ratio.

Table 1 Tenured/Tenure Track Faculty and Teaching 2014/15-2019/20

	SMA1			**SMA2**		
Tenured/Tenure Track Teaching Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Automotive, Mechanical and Manufacturing Engineering	22.00	22.00	25.00	27.00	29.00	30.00
Electrical, Computer and Software Engineering	15.75	16.75	17.75	17.75	17.75	18.75
Total Tenure/Tenure Track	**37.75**	**38.75**	**42.75**	**44.75**	**46.75**	**48.75**
Total Teaching Faculty	**8.00**	**8.00**	**9.00**	**9.00**	**11.00**	**12.00**

Table 2 Proportion of course sections taught by sessional or contract faculty 2014/15-2019/20

	SMA1			**SMA2**		
Subject Code	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
AUTE	12.5%	0.0%	0.0%	0.0%		
ELEE	0%	10.0%	15.6%	15.8%		
ENGR	5.8%	7.4%	4.3%	24.3%		
MANE	0.0%	0.0%	0.0%	29.4%		

MECE	12.8%	2.2%	0.0%	28.6%		
SOFE	0%	25.0%	18.8%	29.2%		
Total	**5.4%**	**7.5%**	**6.8%**	**21.0%**	**10.0%**	**8.0%**

The faculty will see the flow through of Mechatronics into 3rd and 4th year through SMA2 period. A key focus is to ensure these sections are developed and taught with the highest standards. As we move forward, the faculty will consider new options that are related to current foundational courses. One possibility is Infrastructure Engineering. The addition of the new program and new faculty members will strain our current departmental structure, the formation of a third department is expected to ensure all individual program/faculty needs are addressed. The new department will have a Department Chair appointment as well as 1 support staff member.

Table 3 Undergraduate and graduate enrolment: Full-time equivalents (% part-time, average portion of full course load)

	SMA1			**SMA2**		
Undergraduate	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BENG	**1459.5 (3.5, 0.8)**	**1580.1 (2.6, 0.9)**	**1731.2 (3.2, 0.9)**	**1794.2 (3.2, 0.9)**	**1839 (3.2, 0.9)**	**1870.9 (3.2, 0.9)**
Automotive Engineering	185.7 (3.1, 0.8)	177.6 (3.2, 0.8)	183.8 (3.1, 0.8)	**209.1 (3.1, 0.9)**	**214.3 (3.1, 0.9)**	**218 (3.1, 0.9)**
Electrical Engineering	365.4 (4.6, 0.8)	386.6 (3.9, 0.8)	397.4 (5, 0.9)	**389.3 (5, 0.9)**	**399 (5, 0.9)**	**405.9 (5, 0.9)**
Manufacturing Engineering	62.5 (0, 0.8)	47.2 (8.3, 0.8)	54.2 (6, 0.8)	**51.6 (6, 0.9)**	**52.9 (6, 0.9)**	**53.8 (6, 0.9)**
Mechanical Engineering	680.1 (3.7, 0.9)	753.1 (1.6, 0.9)	754.8 (3.1, 0.9)	**697.2 (3.1, 0.9)**	**631.9 (3.1, 0.9)**	**558.6 (3.1, 0.9)**
Mechatronics Engineering			101.4 (0, 0.9)	**165.3 (0, 0.9)**	**252.2 (0, 0.9)**	**340.8 (0, 0.9)**
Software Engineering	165.8 (2.6, 0.9)	215.6 (1.7, 0.9)	239.7 (1.1, 0.9)	**281.7 (1.1, 0.9)**	**288.7 (1.1, 0.9)**	**293.7 (1.1, 0.9)**
BENGM	**19.4 (11.5, 0.7)**	**17.3 (5.3, 0.9)**	**12.8 (0, 0.9)**	**23.6 (0, 0.9)**	**24.2 (0, 0.9)**	**24.6 (0, 0.9)**
Automotive Engineering & Mgmt	1.9 (33.3, 0.6)	1.2 (50, 0.6)	1.9 (0, 0.9)	**3.6 (0, 0.9)**	**3.7 (0, 0.9)**	**3.8 (0, 0.9)**
Electrical Engineering & Mgmt	4.2 (12.5, 0.5)	4.4 (0, 0.9)	0 (0, 0)	**7.3 (0, 0.9)**	**7.5 (0, 0.9)**	**7.6 (0, 0.9)**
Manufacturing Eng & Management	0.8 (50, 0.4)	0 (0, 0)	0 (0, 0)	0 (0, 0)	0 (0, 0)	0 (0, 0)
Mechanical Eng & Management	12.6 (0, 1)	11.7 (0, 1)	10 (0, 0.9)	**10.9 (0, 0.9)**	**11.2 (0, 0.9)**	**11.4 (0, 0.9)**
Software Engineering & Mgmt			0.9 (0, 0.9)	**1.8 (0, 0.9)**	**1.9 (0, 0.9)**	**1.9 (0, 0.9)**

Undergraduate Total	**1479 (3.7, 0.8)**	**1597.4 (2.6, 0.9)**	**1744 (3.2, 0.9)**	**1817.8 (3.2, 0.9)**	**1863.3 (3.2, 0.9)**	**1895.5 (3.2, 0.9)**
DIPL	**0 (0, 0)**	**1 (0, 1)**	**1 (0, 1)**	**0 (0, 0)**	**0 (0, 0)**	**0 (0, 0)**
Engineering Management	0 (0, 0)	1 (0, 1)	1 (0, 1)	0 (0, 0)	0 (0, 0)	0 (0, 0)
MASC	**78.8 (17.8, 0.9)**	**75.1 (19.5,0.9)**	**52.6 (19.7, 0.9)**	**65.9 (17.3, 0.9)**	**56.6 (7.2, 0.9)**	**44.1 (7, 1)**
Automotive Engineering	8.3 (11.1, 0.9)	9.6 (18.2,0.9)	7.9 (30, 0.8)	9.9 (26.4, 0.8)	8.5 (10.9, 0.9)	6.6 (10.7, 0.9)
Electrical and Computer Eng.	43.1 (14.6, 0.9)	44.1 (14.3,0.9)	16.9 (15.8, 0.9)	21.2 (13.9, 0.9)	18.2 (5.7, 1)	14.2 (5.6, 1)
Mechanical Engineering	27.4 (24.2, 0.8)	21.4 (29.6,0.8)	27.8 (18.8, 0.9)	34.8 (16.5, 0.9)	29.9 (6.8, 1)	23.3 (6.7, 1)
MENG	**22.8 (22.2, 0.8)**	**25.8 (20, 0.9)**	**23.1 (25, 0.8)**	**35.1 (17.5, 0.9)**	**41.8 (10.6, 0.9)**	**43.5 (8.4, 0.9)**
Automotive Engineering	2 (0, 1)	9 (0, 1)	8 (0, 1)	12.2 (0, 1.1)	14.5 (0, 1.1)	15.1 (0, 1.1)
Electrical and Computer Engr.	13.9 (18.8, 0.9)	10.3 (9.1, 0.9)	7.9 (30, 0.8)	12 (21, 0.8)	14.3 (12.7, 0.9)	14.9 (10.1, 0.9)
Mechanical Engineering	6.9 (33.3, 0.8)	6.5 (50, 0.7)	7.2 (40, 0.7)	10.9 (28, 0.8)	13 (16.9, 0.8)	13.6 (13.5, 0.8)
MENGM	**7.7 (64.3, 0.6)**	**7.1 (58.3,0.6)**	**10.7 (52.9, 0.6)**	**19.2 (18.2, 0.9)**	**30.4 (9.2, 0.9)**	**29.5 (1.5, 1)**
Engineering Management	7.7 (64.3, 0.6)	7.1 (58.3,0.6)	10.7 (52.9, 0.6)	19.2 (18.2, 0.9)	30.4 (9.2, 0.9)	29.5 (1.5, 1)
PHD	**61.5 (20.8, 0.9)**	**64.9 (17.6,0.9)**	**68.2 (17.9,0.9)**	**64.2 (18.9, 0.9)**	**51.8 (9, 0.9)**	**49.2 (7.7, 0.9)**
Electrical and Computer Eng.	26.4 (25, 0.8)	28.8 (18.2,0.9)	39.1 (15.9, 0.9)	36.8 (16.8, 0.9)	29.7 (8.0, 1)	28.2 (6.8, 1)
Mechanical Engineering	35.1 (17.5, 0.9)	36.1 (17.1, .9)	29.1 (20.6, 0.9)	27.4 (21.7, 0.8)	22.1 (10.4, 0.9)	21 (8.8, 0.9)
Graduate Total	**170.8 (22.7, 0.8)**	**173.9 (21.1,0.9)**	**155.6 (22.7, 0.8)**	**184.4 (18, 0.9)**	**180.7 (8.9, 0.9)**	**166.3 (6.7, 1)**

Table 4 International enrolment 2014/15-2019/20; % by degree

	SMA1			**SMA2**		
Degree	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BENG	16.1	15.9	14.6	13.6	12.9	13.9
BENGM	1.9	0.0	0.0	0.0	0.0	0.0
DIPL		0.0	0.0	0.0	0.0	0.0

MASC	67.3	59.9	43.7	38.6	37.9	31.9
MENG	61.4	85.3	51.9	75.3	59.3	69.4
MENGM	51.9	42.3	56.1	57.0	65.1	70.8
PHD	58.5	65.2	64.5	53.9	63.5	71.6

Experiential learning including capstone design and co-op/internship are an integral part of engineering education. To ensure the best possible results in experiential learning, a strong link between industry, students, faculty members and student advisors is required. We anticipate hiring at least one additional Co-op/Internship Coordinator who will support our growing activities in this area and future plans in making the co-op program mandatory for our Manufacturing Engineering program. As we work towards strengthening our engineering student experience, Engineering Design Teams have been at the center of this growth. We expect to appoint 5 faculty members as 'Faculty design fellows' who will dedicate a percentage of their time helping students to successfully compete in national and international competitions increasing our Faculty's reputation and profile.

Table 5 Percentage of Graduating Students Who Participated in an Experiential Learning Experience

	SMA1			**SMA2**		
Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Engineering & Applied Science	98.8	100.0	100.0	100.0	100.0	100.0

Engineering Outreach: Since 2014, FEAS has engaged in an ambitious initiative to deliver engineering outreach programs in the surrounding communities. To date, outreach activities reach over 4,000 students annually through various programs such as summer camps and workshops. Funding for the various programs have been raised solely within the Faculty through various external partners. To continue the success and growth of our outreach activities, 1 Outreach Program Coordinator will be required.

Table 6 UOIT Engineering Outreach programs 2014/15-2019/20 (# of participants)

	SMA1			**SMA2**		
Program	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Kindergarten through Grade 8 programs: Eng Squad Summer Camp, Future Cities	n/a	1,575	1,600	1,650	1,700	1,750
Grades 9 through 12 programs: Grade 9 Workshop, Grade 11 Workshop, UOIT Engineering Robotics Competition	300	3,800	4,300	4,600	6,650	6,650
c_wonder design lab program: Kindergarten through Grade 12	n/a	n/a	n/a	1,600	2,800	3,750
Underrepresented group programs: Girls and Indigenous Youth	20	50	100	200	370	420

Teacher Professional Development: WE**MADE**IT in the Classroom	n/a	1,000	1,800	0*	1,800	1,800
Community-based programs: UOIT Electronics Lending Library, STEM Library Workshops	n/a	n/a	400	750	1,050	1,200
Total	**320**	**6,425**	**8,200**	**8,800**	**14,365**	**15,570**

FEAS researchers generate approximately 30% of the total UOIT research funding. The Faculty's research activities has seen an overall increase in the past few years as seen in table 7 and also evident in the increase of research funding, number of projects and research publications. Continued research activity and focus on our graduate programs will be supported by the appointment of an Associate Dean of Graduate Studies and Research. As the number of grant applications increase, a dedicated grant writer will be beneficial in ensuring the success to meet our projections.

Table 7 Research Activity 2014/15-2019/20

	SMA1			**SMA2**		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Grant and contract funding (tri-council)	$1,365,539	$1,538,120	$1,825,658	$1,919,941	$2,012,788	$2,113,427
Number of research projects	41	50	60	63	66	69

Faculty of Health Sciences (FHSc)

1 Preamble

In Canada, one's personal health and the healthcare system are a concern for every Canadian.[2] It is not surprising therefore that the Faculty of Health Sciences (FHSc) is one of UOIT's largest and most rapidly expanding Faculties in terms of overall student enrolment.[3] Our students view their degrees as credentials leading to almost certain employment as health professionals upon graduation (e.g., as Registered Nurses, Medical Laboratory Technologists, or Kinesiologists), entry level positions in the community (e.g., positions in public health and long-term care), or as a natural precursor to enrolment in post-graduate programs leading to additional credentialing via health or research-related degrees.

We are faced with significant space pressures, yet all faculty and staff members in FHSc are deeply committed to educating the next generation of health professionals to be seen as leaders in their fields. This requires investment in helping our students to acquire skill-based competencies, including the technical, ethical, professional, and communication skills required to be the best that they can be in serving their patients' and clients' needs. Our standards are high and, as a result, our students enjoy much success in writing their registration examinations which lead to professional licensure. In 2016-2017, for example, our Medical Laboratory Science program graduates had a 100% pass rate on the Canadian Society for Medical Laboratory Sciences licensure exam.[4] Our Bachelor of Science in Nursing graduates also enjoyed much success in the same year, with a 90% ultimate pass rate on their national registration exam. This exceeded both the overall provincial (i.e., 86.9%) and national (i.e., 75.5%) averages and placed us in the top one-third of all collaborative Nursing degree programs in Ontario.

We recognize, however, that we cannot rest on our laurels. Our enrollments are growing and advances in health, healthcare, health technologies, and the healthcare system itself, are occurring at an alarming rate. We need to constantly challenge[5] ourselves (through scholarship and teaching) to adapt to this change. We have excellent scholars, teachers, and staff and we are collectively committed to enhancing the student experience. This was re-affirmed in September[6] of this year and this FHSc Academic Plan reflects our collective vision for the coming year and beyond. Over the long term, we aspire to achieve the following:

1. Deliver high quality evidence-informed and value-based programs that are relevant to community and health industry workforce needs and standards.
2. Develop transformational programs, faculty, staff, learners, alumni, and researchers, for a changing health environment.

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2 Vincent, D. (2015, October 9). Health top concern to Canadians but politicians ignoring issue, poll shows. *Toronto Star*. Retrieved from: https://www.thestar.com/news/canada/2015/10/09/health-top-concern-to-canadians-but-politicians-ignoring-issue-poll-shows.html

3 See Table 3.

4 In 2015-2016, the pass rate was also 100%.

5 Advisory Panel for the Review of Federal Support for Fundamental Sciences (2017). *Investing in Canada's future: Strengthening the foundation of Canadian research.* Retrieved from: http://www.sciencereview.ca/eic/site/059.nsf/eng/h_00009.html

6 On September 6, 2017, all faculty and staff were invited to attend a retreat and contribute to the 2017-2018 FHSc Academic Plan. The plan that follows reflects the efforts of the FHSc Senior Leadership and all of our members in setting our priorities for the 2017-2018 academic year and beyond.

3. Provide positive, practical, innovative, and engaging/shared learning experiences in our virtual and physical classrooms, seminars, laboratories, practica, and community settings.
4. Promote and value evidence-informed and value-based interprofessional education, partnerships, research, and practice in all that we do.
5. Deliver high quality continuing professional education (CPE) programming that is relevant to community and health industry workforce needs (e.g., re-training, licensure, upgrading, and standards).
6. Plan, develop, and implement additional college diploma-to-degree (and degree-to-diploma) pathways and evaluate existing pathways to provide seamless access for a diversity of learners to our degree programs.

We are well connected to our community (i.e., locally, provincially, nationally, and globally) via our research and student experiential learning opportunities and are committed to the following mandate:

> The Faculty of Health Sciences at UOIT adheres to the World Health Organization's (WHO) (2010) definition of the Social Accountability of health-related educational institutions as "the obligation to direct their education, research and service activities towards addressing the priority health concerns of the community, region and the nation that they have a mandate to serve. The priority health concerns are to be identified jointly by governments, health-care organizations, health professionals and the public." (http://healthsocialaccountability.sites.olt.ubc.ca/files/2011/06/11-06-07-GCSA-English-pdf-style.pdf)

2 Executive Summary of Actions

2017-2020

The FHSc is deeply committed to improving the quality of the **student experience** by examining all of our day-to-day advising and classroom/lab-based operations. For example, in 2017-2018, we are developing, planning, implementing, and evaluating all facets of our Faculty's Academic Advising operations, while at the same time starting to think "outside the box" to find ways to support and engage students to succeed in the university environment. We are also leading the UOIT community in its efforts to ensure **access and equity** through the provision of evidence-based programming to support student mental health needs. These mental health initiatives are supported by a commitment to **research excellence and impact** through the work of many of our Faculty Members, including our current CRC Chair in Disability Prevention and Rehabilitation, as part of the UOIT USMART initiative. For example, we aim to:

- Improve all aspects of the student experience, broadly defined (e.g., how we deliver our courses, who delivers courses, begin implementing student success and student retention initiatives, continue to re-structure our approach to student advising, shifting from a culture of being "reactive" to student issues to being "pre-emptive" and engaged)
- Support the USMART initiative in its efforts to understand student mental health issues on campus with an eye to implementing the results, when available, to inform our approach to undergraduate and graduate student education
- Build on the success of the 2017 Futures Forum, and its focus on mental health, by pursuing the development of a high school mental health-focused program to inform and educate high school students on how to prepare for success in university

We are also in the process of hiring a new Canada Research Chair (CRC) in Healthcare Simulation to support our long term commitment to **innovation in teaching and learning excellence** and we are exploring ways to begin Indigenizing our curriculum, while at the same time hiring additional tenured and tenure-track faculty and teaching faculty to reduce our average class size. To this end, we are:

- Recruiting a Canada Research Chair in Healthcare Simulation and supporting the successful candidate in becoming a leader and catalyst for healthcare simulation in classroom, laboratory, and healthcare settings from both a pedagogical and research perspective
- Introducing and/or expanding the use of simulation and technology platforms in our classroom, laboratory, practicum, and research settings
- Begin exploring how we may begin the process of Indigenizing our existing degree program offerings while at the same time exploring ways to welcome more Indigenous students into the Faculty
- Seeking additional full-time faculty positions (e.g., TTTs and TFs) to reduce class sizes as the student population continues to grow

The FHSc is increasingly becoming more connected to and, therefore, more supportive of our local communities through our commitment to research and engagement in local **innovation, economic development, and community engagement** activities. We are just beginning to explore revenue generating continuing professional education (CPE) offerings, with the possibility of these beginning as early as 2018-2019. However, the FHSc has a long history of contributing to community through the delivery of numerous workshops, seminars, and educational symposia (i.e., non-revenue generating events). These are important knowledge mobilization opportunities – ones that ensure our research is having impact at the user level. However, the extent to which our work is translated and has impact at this level is not captured by traditional measures of scholarship (e.g., h index, i10 index, etc.). To this end, in 2017-2018 we are striking an ad hoc committee to identify and define the best measures of research productivity for FHSc. Importantly, through these measures, we hope to demonstrate our strong and growing connections via research with community organizations (e.g., Lakeridge Health, Ontario Shores, The Abilities Centre, Grandview Children's Centre, etc.) and local industry (e.g., Dynacare, Mettrum, General Motors, etc.) which provide students with access to a great education through **experiential learning** – a key aspect of our **differentiation areas of focus**. We also have a tremendous opportunity to support the growing life sciences industry sector in the Clarington region through a commitment to continuing professional education (CPE) opportunities for existing members (e.g., Medical Laboratory Technicians) of the local workforce. Thus, we aim to:

- Continue to update and/or establish MOUs with existing (e.g., Grandview Children's Centre, Lakeridge Health, Abilities Centre) community partners and new community partners in support of student placements, student and faculty research opportunities, and more
- Increase the number of applications and total funding dollars requested in support of (a) each Faculty Member's research program, and (b) every graduate student (i.e., including external scholarship applications)
- Generate revenue through CPE offerings (e.g., course offerings, conferences, etc.) via the UOIT-CMCC Centre for Disability Prevention and Rehabilitation and through community connections to industry (e.g., Medical Laboratory Sciences and Dynacare)

These connections to community and industry also provide us with the opportunity to expand existing and yet to be defined degree (e.g., PhD Health Sciences) and research programs, and hence research funding,

for both faculty members and graduate students alike. In terms of **enrolment strategy and direction**, we are expanding our commitment to community workforce needs by raising enrolments in our UOIT-Durham College BScN Collaborative program while maintaining college to university access pathways via multiple programs (e.g., RPN-to-BScN Nursing, Fitness and Health Promotion Diploma and OTA/PTA Diploma to BHSc Kinesiology). Importantly, these pathways are underpinned by well established and emerging **institutional collaborations and partnerships** with Durham College, Georgian College, the Canadian Memorial Chiropractic College (CMCC), and Trent University, just to name a few. Emerging out of these partnerships are the UOIT-CMCC Graduate Diploma in Workplace Disability Prevention and the proposed UOIT-Durham College Trent-Fleming MScN in Professional Practice Leadership degree program, both of which are slated for initial enrolment in 2018. With regard to the development and introduction of new degree programs, we will:

- Begin consultations towards developing a Bachelor's degree in a health-related field to broaden our offerings, attract high quality students who have little interest in our currently "STEM"-heavy degree programs
- Develop and launch a Masters of Nursing degree program with an emphasis on Nursing Leadership in partnership with Trent University
- Begin developing a proposal for a PhD in Health Sciences with a unique emphasis on health data and the technologies used to collect such data, health policy, and leadership for the future
- Continue to explore opportunities to expand enrolment in our Bachelor of Applied Health Sciences (BAHSc) college diploma-to-university on-line degree program

Engaging all Faculty and Staff with this Academic Plan will require a commitment to them; that is, the ongoing provision of a nurturing and supportive environment replete with mentorship and professional development opportunities to allow them the opportunity to reach their goals and aspirations and to thrive in the current realities of our complex academic environment. This will require a deep commitment from the Senior Leadership Team (i.e., Deans, Associate Deans, Directors and Managers) in FHSc, and more specifically, deliberate attention to creating a strong sense of organizational support within the Faculty. Collectively, we will:

- Nurture existing faculty (i.e., full-time TTT and TF and part-time sessionals) and staff in their aspirations to be the best that they can be through the provision of mentorship and professional development opportunities

While 2017-2018 is considered a foundational year, in 2018-2019 and 2019-2020 we will focus on refining and improving upon our efforts. This will include an evaluation of our success in reaching our 2017-2018 objectives as well as a re-examination of the context in which we exist. The latter will require a close examination of our resource (e.g., human, capital, and financial) needs and how we distribute them, as well as ongoing scrutiny of the ever changing health human resources and healthcare environments. Driven by student enrolments and changes in campus infrastructure and space, we will require the following:

- Human Resources: The addition of a CRC Chair in Healthcare Simulation, plus three new TTT faculty positions, and one new TF faculty position during the 2017-2020 SMA time period.
    - Capital Resources: In alignment with the Campus Master Plan, we will begin developing plans for changes in existing space as well as additional space to support the delivery of undergraduate and graduate lectures, tutorials, and labs as well as Faculty-based research initiatives. The precarious nature of much of the space we currently occupy (e.g., J Wing, St. Gregory's School, UA Basement) must be addressed via these processes.
    - Financial Resources: Additional financial resources will be required to support adequate

levels of staffing (e.g., part time instructors, teaching assistants) in the classroom.

To this end, we are deeply committed to an ongoing process of planning and evaluation to ensure that our efforts are evidence-informed and value-based. This approach is essential given that the current SMA affords and encourages us to expand the "breadth" of what we do. However, and perhaps more importantly, we must also remain committed to adding to the "depth" (i.e., quality) of our efforts in order to sustain them.

2020-2023

The FHSc is in its early stages of evolution and we will necessarily follow the directives defined by the UOIT SMA. If the 2020-2023 SMA remains similar in focus and scope to the 2017-2020 SMA, including restrictions on our ability to grow enrolments, it is anticipated that our efforts will in a broad sense be devoted to (a) a focus on quality in everything that we do; (b) maintaining our connections to community through enhanced efforts in experiential learning and research with local and regional institutions; and (c) enhanced CPE offerings with community.

As Faculty Members continue to mature into their roles[7], there will be an increased emphasis on research and graduate education. It is also anticipated that our current Masters' and graduate level programs (i.e., MHSc, MScN, WDP Diploma) will be fully enrolled and graduating high quality candidates. Faculty members will need[8] and demand a fully operational PhD program in Health Sciences. To this end, we are currently working on a PhD proposal and hope to begin moving it through the necessary approval stages beginning as early as 2018. In return, both the quantity and quality of our research efforts will rise and we will continue to grow our already existing reputation as excellent researchers beyond our national borders to be more broadly represented and recognized on the global stage.

Similarly, although consultations will have begun during the 2017-2020 time period, it is anticipated that the first intake of students into a yet to be defined, yet non-STEM heavy undergraduate degree program will occur within this time period.

Long Term Plans Through 2027

Long-term planning for FHSc will be necessarily dependent on and responsive to the needs of our students and our local, regional, national, and international communities. This includes responding in a meaningful way, as per our social accountability mandate, to the needs of our stakeholder communities. For example as the proportion of the "greying" population in the Durham Region and Canada continues to grow, the system will need to adapt accordingly to support this cohort. Adaptation will also be a product of emerging health concerns related to antimicrobial resistance, environmental toxins, poverty, and other yet to be understood external factors.

While we do not foresee any major changes with respect to our current areas of degree programming, we recognize that we must be responsive to market forces created by the demand for such programs in

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7 As of November, 2017, the FHSc TTT Faculty Member complement consists of approximately one-third and two-thirds tenured and untenured members, respectively.

8 The training of highly qualified personnel (HQP) is a key determinant of external granting success, particularly with respect to the Tri-Council agencies.

combination with the availability of opportunities for admission and the actions of our nearest competitor universities. We will also need to identify and deliver meaningful and innovative CPE opportunities to assist the Durham Region and broader area in developing diversity in its health and healthcare workforce.

3 ***Rationale***

In Table 1, the faculty positions to be added (i.e., CRC Chair in Health, three TTT positions, and one TF position) are reflected across the 2017-2020 time period. These additions will have little impact on the proportion of courses taught by sessional or contract faculty (Table 2) as we reduce class sizes by adding more course sections to correct what is a disproportionately large number of classes with enrolment numbers exceeding 100. These large class sizes are a product of significant past growth and lesser, yet continued future growth, during the 2017-2020 period (Tables 3, 4, and 5) This is seen as a must in order to improve student engagement in the classroom and therefore retention over time. This will also necessarily require additional budget dollars to continue to hire part-time instructors and additional TAs as needed.

Table 1 Tenured/Tenure Track Faculty and Teaching Faculty 2014/15-2019/20

	SMA1			**SMA2**		
Tenured/Tenure Track Teaching Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Bachelor of Health Science	14.50	14.50	15.50	16.10	16.10	16.10
Bachelor of Allied Health Science	2.75	3.00	3.00	3.00	3.00	3.00
	-	-	-	-	-	-
Bachelor of Health Science – Kinesiology & Bridges	6.00	6.00	6.00	7.00	7.00	7.50
	-	-	-	-	1.00	1.00
	-	-	-	-	-	-
Bachelor of Health Science – Medical Laboratory Science	1.00	1.00	1.00	1.00	1.00	1.50
	7.25	7.75	7.75	7.75	7.75	7.75
	-	-	-	-	-	-
Bachelor of Science in Nursing & Bridge	8.50	8.50	8.50	8.90	9.90	9.90
	0.25	0.25	0.25	0.25	0.25	0.25
	8.0	8.0	8.0	8.0	8.0	8.0
Total Tenure/Tenure Track	**30.00**	**30.00**	**31.00**	**33.00**	**34.00**	**35.00**
Total Teaching Faculty	**10.25**	**11.00**	**11.00**	**11.00**	**12.00**	**12.00**
Total Durham College Faculty	**8.00**	**8.00**	**8.00**	**8.00**	**8.00**	**8.00**

*DC Teaching Faculty on secondment and DC Administrative Faculty are not included in the above counts.

Table 2 Proportion of course sections taught by sessional or contract faculty 2014/15-2019/20

	SMA1			**SMA2**		
Subject Code	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
HLSC	36.4%	22.7%	35.7%	35.0%	35.0%	35.0%
MLSC	0.0%	6.3%	5.6%	8.5%	8.5%	8.5%
NURS	6.1%	8.2%	17.3%	10.0%	8.2%	8.2%
Total	**25.5%**	**17.1%**	**27.3%**	**30.0%**	**30.0%**	**30.0%**

Table 3 Undergraduate and graduate enrolment: Full-time equivalents (% part-time, average portion of full course load)

	SMA1			SMA2		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BAHSC	**44.9 (90.7, 0.4)**	**48.4 (92.8, 0.4)**	**54.4 (89.5, 0.5)**	**45.8 (89.5, 0.4)**	**40.4 (89.5, 0.4)**	**41.2 (89.5, 0.4)**
BHSC	**910.1 (3, 0.9)**	**979.6 (2.8, 0.9)**	**1046.3 (2.3, 0.9)**	**1017.6 (2.3, 1)**	**1034.6 (2.3, 1)**	**1045.5 (2.3, 1)**
Health Sciences	341.6 (3, 0.9)	378.3 (4.7, 0.9)	421.7 (2.3, 1)	383.2 (2.3, 10	389.6 (2.3, 1)	393.7 (2.3, 1)
Kinesiology	383.1 (2.2, 0.9)	414.5 (1.6, 0.9)	436.2 (2.2, 0.9)	429.0 (2,2, 1)	436.2 (2.2, 1)	440.8 (2.2, 1)
Kinesiology-Adv. Standing Opt.	44.2 (5.9, 0.9)	39.5 (6.5, 0.9)	47.9 (1.9, 0.9)	53.5 (1.9, 1)	54.4 (1.9, 1)	55.0 (1.9, 1)
Medical Laboratory Science	141.2 (3.8, 0.9)	147.3 (0, 0.9)	140.5 (2.6, 0.9)	151.9 (2.6, 1)	154.5 (2.6, 1)	156.1 (2.6, 1)
BSCN	**631.1 (7, 0.9)**	**636.4 (5.3, 0.9)**	**655.9 (4.7, 0.9)**	**654.5 (4.7, 0.9)**	**674.1 (4.7, 0.9)**	**733.6 (4.7, 0.9)**
Nursing (Collaborative)	400.4 (2.5, 0.9)	398.4 (1.6, 0.9)	406.9 (2.5, 0.9)	403.8 (2.5, 0.9)	438.3 (2.5, 0.9)	492.5 (2.5, 0.9)
Nursing (Post-PN)	141.5 (18.2, 0.8)	140.2 (13, 0.8)	137.1 (12.7, 0.8)	141.7 (12.7, 0.8)	132.9 (12.7, 0.8)	137.7 (12.7, 0.8)
Nursing (Post-PN) Georgian	89.2 (6.7, 0.8)	97.8 (7.4, 0.8)	111.9 (1.5, 0.9)	109.0 (1.5, 0.8)	102.9 (1.5, 0.8)	103.4 (1.5, 0.8)
Undergraduate Total	**1586.1 (9.8, 0.9)**	**1664.4 (9, 0.9)**	**1756.6 (8.3, 0.9)**	**1717.9 (8.3, 0.9)**	**1749.1 (8.3, 0.9)**	**1820.4 (8.3, 0.9)**
MHSC	**53.0 (29.9, 0.8)**	**54.8 (35.6, 0.8)**	**49.8 (48, 0.7)**	**54.5 (34.7, 0.8)**	**58.5 (17.2, 0.9)**	**52.9 (7.6, 0.9)**
Graduate Total	**53.0 (29.9, 0.8)**	**54.8 (35.6, 0.8)**	**49.8 (48, 0.7)**	**54.5 (34.7, 0.8)**	**58.5 (17.2, 0.9)**	**52.9 (7.6, 0.9)**

Table 4 International enrolment 2014/15-2019/20; % by degree

	SMA1			SMA2		
Degree	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BAHSC	0.0	0.0	0.0	0.0	0.0	0.0
BHSC	4.7	3.9	3.4	2.1	2.2	3.2
BSCN	0.7	0.5	0.4	0.0	0.0	0.0
MHSC	3.8	5.5	4.0	1.8	0.0	0.0

Table 5 Percentage of Graduating Students Who Participated in an Experiential Learning Experience

	SMA1			SMA2		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Percentage of graduating students who participated in an experiential learning experience	71.5	70.0	78.2	70.9	72.0	72.5

Table 6 Continuing professional education enrolment 2014/15-2019/20 (# course enrolments)[9]

	SMA1			SMA2		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Revenue generating continuing professional education enrolments	0	0	0	0	20	30

Table 7 Research Activity 2014/15-2019/20

	SMA1			SMA2		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Grant and contract funding (Tri-Council)	$192,327	$312,230	$307,203	$400,000	$450,000	$500,000
Number of funded research projects	4	7	11	12	14	16
Number of disseminations (peer-reviewed)[10]	107	298	294	310	320	330
Peer-reviewed journal articles		130	128	140	145	150
Books		2	1	2	2	2
Book chapters		18	20	20	20	20
Scholarly conference presentations		148	149	148	153	158
Median h index[11]	-	-	12	12	13	13
Median i10 index[12]	-	-	16	17	18	19
Total Research Dollars Disbursed[13]	$1,082,536	$748,730	$835,679	$900,000	$1,000,000	$1,250,000

9 The FHSc is just beginning to develop revenue generating CPE opportunities. It is anticipated that the first CPE offerings will occur in early 2018 or during the 2018-2019 academic year.

10 Total disseminations reported here include peer-reviewed journal articles, conference papers, conference presentations, and books and book chapters produced by 24 full-time tenured/tenure track faculty and 2 full-time teaching faculty members. Not included are numerous government reports, community presentations, and other knowledge dissemination activities. The FHSc will begin tracking these during the 2017-2018 academic year.

11 2016-2017 numbers based on n=8 full-time tenured/tenure-track faculty members metrics extracted from Google Scholar.

12 2016-2017 numbers based on n=8 full-time tenured /tenure-track faculty members metrics extracted from Google Scholar.

13 Total disbursements ($) as supplied to us by the Office of Research Services.

Faculty of Science (FSci)

1 Preamble

The Faculty of Science at UOIT is committed to excellence and innovation in technology-enhanced, interdisciplinary teaching, and research that is relevant to the needs of society and the environment. We are dedicated to creating and sharing scientific knowledge and infusing the thrill of discovery while inspiring vision, determination, independence, critical thinking and integrity in our students, thereby preparing them for rewarding careers as the next generation of highly skilled scientists and professionals.

We see ***science as a springboard***, both to a wide range of careers (e.g., in industry, government, academia, and the non-profit sector) and to the exploration and understanding of how our universe works. We are dedicated to providing the best educational experience possible for our students and helping them achieve their potential. Our career-oriented undergraduate and graduate programs provide excellent opportunities for students to gain valuable knowledge, training and experience in core disciplines and across disciplines. We maintain a student-centric philosophy and value relevant, experiential education, from the classroom and laboratory to the field and beyond. Throughout our curricula, we engage students in the process of research and discovery. We value applied scientific research. Our research strengths span computational methods and applications, big data, sustainable energy, advanced manufacturing, life sciences, and forensic science.

Over the next ten years, we will:

- continue to innovate and improve the educational experience in our programs to meet the evolving needs of students and employers;
- build on and enhance our existing research strengths, to promote synergies within the Faculty and across Faculties, to foster innovation and collaboration between the university and its various partners and stakeholders, and to contribute meaningfully to local, national and global communities;
- raise the visibility and profile of our faculty, programs and research

2 Executive Summary

Priorities for SMA 2 (2017-2020)

- *Research Excellence and Impact: Research Clusters:* Implement Computational Research Group marketing by summer 2018. Seek to hire a tenured/tenure-track faculty member in the field of Statistical Learning by summer 2019 (a notable gap in the institution's research expertise in Computational Research). Identify, establish and market other research group/cluster identities (2-3 more by summer 2020).
- *Student Experience: New Opportunities:* Develop new programs and specializations, taking advantage of the unique strengths and expertise of current Science faculty (e.g., Data Science minor, Fall 2017; Environmental Biology [Biological Sciences] and Nanotechnology and Clean Energy [Physics], Fall 2018; Integrative Neuroscience [joint with Faculty of Health Sciences and Faculty of Social Sciences and Humanities], Fall 2019; Environmental Sciences, Fall 2020).
- *Student Experience: Improving Student Success:* Continue to evaluate current undergraduate curricula to assess learning needs, barriers and supports (e.g., modifications to curricula to support writing in the discipline; early assessment of mathematics preparedness, with more

effective guidance to educational options and resources). Some of these efforts will involve other Faculties and units.

- *Student Experience: Instruction and Classroom:* There is an urgent need to address Computer Science teaching lab needs, due to recent (and forecasted) growth, as the increased numbers of students move from lower-level to upper-level courses. For SMA2, we will deal with the associated growth in instructional needs through sessional/LTAA hires.
- *Recruitment:* Seek additional opportunities to build and enhance our networks with teachers, schools and school districts in the Durham Region (e.g., re-tool High School Science Days programming). Work with the Recruiting Office to invest in target domestic recruitment efforts, with particular emphasis on Biology and Chemistry, and to expand international recruitment.

Priorities for SMA 3 (2020-2023)

- *Research Excellence and Impact:* Establish an "Omics" facility (e.g., genomics, proteomics, metabolomics) to support excellence in life sciences and related fields. This could represent a possible collaboration with colleagues from the Faculty of Health Sciences.
- *Research Excellence and Impact:* Establish a Materials Characterization Centre, outfitted with state-of-the-art instrumentation to allow the determination of chemical composition and nano-scale properties of advanced materials, including those used for clean energy and biotechnology applications (possibly in collaboration with colleagues from the Faculty of Energy Systems and Nuclear Science and from Trent University).
- *Research Excellence and Impact:* Rebuild research expertise in forensic chemistry (to complement the current expertise in forensic biology) through a tenure-track faculty hire. This would be tied to expertise in life sciences, environmental sciences and health sciences.
- *Student Experience: Experiential Learning:* Continue to replace and upgrade major scientific equipment. (Practical, hands-on experience with research-grade laboratory equipment is fundamental to meeting the evolving needs of employers and students, as well as advancing the highest quality of learning, teaching, research and professional practice.)
- *Student Experience: Instruction:* We expect that enrollments will continue to grow in Computer Science. We will seek to hire a tenure-track faculty member in 2021 to help meet both the instructional needs, with a particular focus on computer systems (this will also support research excellence and impact within our Computer Research Group cluster).

Long Term Plans Through 2027

- *Research Excellence and Impact:* Establish a taphonomic experimental research facility, to support research in the forensic sciences (possibly in collaboration with other universities and police/forensic organizations).

3 Rationale

Table 1 shows the numbers of tenured/tenure-track faculty (including the Dean) and teaching faculty. For convenience, the faculty are identified with the primary undergraduate program with which they are affiliated; it does not show the commitments that the tenured/tenure-track faculty have to graduate programs (which sometimes may be as much as half of their teaching workload and 60% or more of their overall workload). The Faculty accounts for 19% of the total course enrolments in the university. Those enrolments for Science courses are split nearly equally between Science majors (accounting for 9% of all

UOIT course enrolments) and other UOIT majors (accounting for 10% of all UOIT course enrolments.

Table 1 Tenured/Tenure Track Faculty and Teaching 2014/15-2019/20

	SMA1			SMA2		
Tenured/Tenure Track Teaching Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Applied and Industrial	6.00	5.00	5.00	5.00	6.00	6.00
Mathematics	3.00	3.00	4.00	4.00	4.00	4.00
Biology	6.00	6.00	6.00	7.00	7.00	7.00
	4.00	3.75	3.75	3.75	3.75	3.75
Chemistry	6.00	6.00	6.00	6.00	6.00	6.00
	3.50	3.50	3.00	3.00	3.00	4.00
Computer Science	6.00	6.00	6.00	6.00	6.00	7.00
	1.00	1.00	1.00	1.00	1.00	1.00
Forensic Science	2.00	2.00	2.00	2.00	2.00	2.00
	1.5	1.50	2.00	2.00	2.00	2.00
Physics*	5.00	5.00	5.00	5.00	5.00	5.00
	3.00	3.00	3.00	3.00	3.00	3.00
Total Tenure/Tenure Track	**31.00**	**30.00**	**30.00**	**31.00**	**32.00**	**33.00**
Total Teaching Faculty	**16.00**	**15.75**	**16.75**	**16.75**	**16.75**	**17.75**

* includes the Faculty Dean

Table 2 shows the relative proportion of course sections taught by sessionals or contract faculty. The overall percentage has consistently decreased in the past three years. These course sections include backfill for faculty on leaves of various kinds. Overall, this represents the second-lowest proportion of course sections taught by sessionals and contract faculty across the seven Faculties, reflecting the commitment the Faculty of Science places on investing in permanent employees to deliver its curricula. (N.B. CSCI combines undergraduate and graduate course offerings.)

Table 2 Proportion of course sections taught by sessional or contract faculty 2014/15-2019/20

	SMA1			SMA2		
Subject Code	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
APBS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
BIOL	25.5%	21.1%	11.9%	15.0%	15.0%	15.0%
CHEM	34.9%	20.9%	10.4%	15.0%	15.0%	15.0%
CSCI	9.1%	11.1%	11.4%	10.0%	10.0%	10.0%
ENVS	33.3%	50.0%	40.0%	30.0%	30.0%	30.0%
FSCI	15.4%	14.3%	28.6%	15.0%	15.0%	15.0%
MATH	11.6%	4.8%	18.6%	15.0%	15.0%	15.0%

MCSC	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MTSC	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PHY	32.4%	32.4%	34.3%	25.0%	25.0%	25.0%
SCIE	33.3%	33.3%	0.0%	25.0%	25.0%	25.0%
STAT	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	**20.2%**	**16.6%**	**15.0%**	**15.0%**	**15.0%**	**15.0%**

In Table 3, net (i.e., domestic plus international) undergraduate enrolments are provided by program for 2014/15 through 2016/17. First we shall focus on the undergraduate numbers. In the following discussion, we will blend students in co-op programs and the "and Management" programs with those in the relevant standard programs. Across the two year span, there was a roughly 5% net decrease in undergraduate enrollment in Science programs. One major factor that has influenced this trend has been increased competition in the region. (We discuss our plans to address this issue below.)

It is important to note that information on trends in service course offerings provided by the Faculty [e.g., non-Science FTEs] is not provided in these tables. As indicated previously, roughly half of the undergraduate FTEs the Faculty serves are through service courses. **Thus, a significant portion of the Faculty responsibilities is not captured in these analyses.**

The enrolment trends described above, particularly in Computer Science, Biology and Chemistry, are changing the undergraduate program demographics in the Faculty fairly rapidly and **our ability to adapt, in terms of appropriate staffing (faculty and support staff), is starting to be challenged**. Fundamentally, we want to maintain a relative distribution of students across the programs that is fairly similar to what we have had in the past few years, while at the same time acknowledging the evolution of student interests and of employer needs.

Table 3 Undergraduate and graduate enrolment: Full-time equivalents (% part-time, average portion of full course load)

	SMA1			**SMA2**		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BSC & BSCM	**1013.2 (5.3, 0.9)**	**981.0 (4.7, 0.9)**	**957.9 (5.3, 0.9)**	**1023.0 (5.3, 0.9)**	**1050 (5.3, 0.9)**	**1108.4 (5.3, 0.9)**
Applied and Industrial Math	38.6 (0, 0.9)	31.2 (5.6, 0.9)	27.0 (8.8, 0.8)	37.6 (8.8, 0.9)	38.6 (8.8, 0.9)	40.7 (8.8, 0.9)
Biological Science	509.0 (5, 0.9)	441.1 (4.7, 0.9)	408.4 (5.6, 0.9)	387.6 (5.6, 0.9)	397.9 (5.6, 0.9)	420.0 (5.6, 0.9)
Chemistry	156.4 (5.3, 0.8)	157.9 (6.3, 0.8)	139.6 (5.4, 0.8)	136.6 (5.4, 0.9)	140.2 (5.4, 0.9)	148.0 (5.4, 0.9)
Computer Science	139.3 (7.4, 0.9)	162.4 (7.2, 0.8)	202.8 (5, 0.9)	285.0 (5, 0.9)	292.6 (5, 0.9)	308.9 (5, 0.9)
Forensic Science	116.7 (3.3, 1)	126.0 (0, 0.9)	116.7 (1.7, 1)	131.3 (1.7, 0.9)	134.8 (1.7, 0.9)	142.3 (1.7, 0.9)
Physical Science	1.2	0.3	N/A	N/A	N/A	N/A

	(0, 1.2)	(0, 0.3)				
Physics	52.0 (10.9, 0.8)	62.0 (1.4, 0.8)	58.5 (9.5, 0.9)	42.2 (9.5, 0.9)	43.3 (9.5, 0.9)	45.7 (9.5, 0.9)
Science	N/A	N/A	4.9 (0, 1)	2.7 (0, 0.9)	2.8 (0, 0.9)	3.0 (0, 0.9)
Undergraduate Total	**1013.2 (5.3, 0.9)**	**981.0 (4.7, 0.9)**	**957.9 (5.3, 0.9)**	**1023 (5.3, 0.9)**	**1050 (5.3, 0.9)**	**1108.4 (5.3, 0.9)**
MSC	**70.2 (5.5, 1)**	**63.6 (16.7, 0.9)**	**65.6 (16.2, 0.9)**	**68.7 (18.9, 0.9)**	**70.2 (9.6, 1.1)**	**71.6 (8, 1.1)**
Applied Bioscience	18.0 (0, 1)	14.6 (12.5, 0.9)	13.0 (0, 1)	14.0 (0, 1)	14.5 (0, 1)	14.8 (0, 1)
Computer Science+	38.0 (0, 1)	32.5 (13.9, 0.9)	32.8 (16.2, 0.9)	32.8 (15, 0.9)	32.9 (14.2, 0.9)	33.2 (13.7, 0.9)
Materials Science	4.3 (20, 0.9)	3.3 (25, 0.8)	6.0 (0, 1)	7.0 (0, 1)	7.5 (0, 1)	7.9 (0, 1)
Modelling & Computational Sci	9.9 (25, 0.8)	13.2 (25, 0.8)	13.8 (33.3, 0.8)	14.9 (20, 0.9)	15.3 (20, 0.9)	15.7 (20, 0.9)
PHD	**40.8 (13.3, 0.9)**	**39.1 (15.9, 0.9)**	**36.0 (23.3, 0.8)**	**40.2 (28, 0.8)**	**37.7 (21.8, 0.8)**	**43.2 (21.3, 0.9)**
Applied Bioscience	11.6 (15.4, 0.9)	14.3 (6.7, 1)	12.6 (14.3, 0.9)	14.0 (10, 1)	14.5 (0, 1)	17 (0, 1)
Computer Science+	21.2 (16.7, 0.9)	17.8 (27.3, 0.8)	17.4 (34.8, 0.8)	17.6 (46.2, 0.7)	13.5 (47.8, 0.7)	13.7 (50.8, 0.6)
Materials Science	5.0 (0, 1)	4.0 (0, 1)	2.0 (0, 1)	3.3 (0, 1)	4.0 (0, 1)	5.0 (0, 1)
Modelling & Computational Sci	3.0 (0, 1)	3.0 (0, 1)	4.0 (0, 1)	5.3 (0, 1)	5.7 (0, 1)	7.5 (0, 1)
Graduate Total	**111.0 (8.5, 0.9)**	**102.7 (16.4, 0.9)**	**101.6 (18.8, 0.9)**	**108.9 (22.6, 0.9)**	**107.9 (14.7, 1)**	**114.7 (13.9, 1)**

+The Computer Science graduate program is a collaborative program involving the Faculty of Science (the official "home" faculty), Faculty of Business and IT and the Faculty of Engineering and Applied Sciences).

The enrolment targets project year-over-year growth in 2017/18 (+65.1 FTE), 2018/19 (+27.0 FTE) and 2019/20 (+58.4 FTE). **We intend to achieve the new enrolment targets through a combination of new and attractive program specializations, curricular changes that remove perceived barriers, and targeted recruitment efforts in all six undergraduate programs, with a particular focus on Biology and Chemistry.** We will likely see to temper the growth in Computer Science somewhat through increasing the admissions requirements, which will also allow us to increase the overall preparedness of the cohort, but we still expect growth to continue. We are also beginning to look more closely at coupled majors and minors. For example, a recently-approved minor in Finance complements very well a major in Applied and Industrial Mathematics; this combination should be able to be completed in four years.

Table 3 also presents enrolment data for the four graduate programs in the Faculty of Science. We note that the Computer Science graduate program represents a collaborative program, provided by the Faculties of Science, Engineering and Applied Science, and Business and IT. In this report, the student numbers of have been rolled into the Faculty of Science tables.

The graduate enrolment targets project modest increases through the next three years a modest 13 FTE (about 13%), slightly higher than it was in 2014/15. One of our key goals is **to increase the visibility and impact of our research in order to leverage more and better-funded research opportunities**. In terms of fundraising at the institutional level, we also believe that **one of the highest priorities should be for more scholarship funding for graduate students.**

Table 4 shows international enrollments in the undergraduate and graduate programs. At the undergraduate level, international recruitment has been modest and relatively flat. We will work with the Recruiting Office to investigate opportunities to expand international recruiting. We have also begun some discussions of 2+2 programs in Physics and Math with a university in Turkey and will likely look for similar opportunities at other universities that are deemed good fits.

Table 4 International enrolment 2014/15-2019/20; % by degree

	SMA1			SMA2		
Degree	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BSC & BSCM	4.2	4.0	5.1	8.0	11.3	14.5
MSC	19.9	18.9	21.3	23.4	25.8	25.8
PHD	27.0	33.2	30.6	22.4	23.6	22.0

[+]The Computer Science graduate program is a collaborative program involving the Faculty of Science (the official "home" faculty), Faculty of Business and IT and the Faculty of Engineering and Applied Sciences).

Table 5 presents the percentage of graduating students who participated in an experiential learning opportunity. While much of science is, arguably, done through experiential learning (e.g., extensive laboratory training), the government definition of experiential learning has only recently been released. Currently only Science co-op work terms, research assistantships, work study and the like fit the new model. Over the next two years, we will: (a) revisit our curricula to determine if and where modifications might be made so that our current learning opportunities can be officially recognized as" experiential learning" according to the new definitions; (b) determine if additional curricular opportunities might be developed; (c) seek to expand the accessibility of our current opportunities to more students (e.g., greater enrolment in co-op programs; more research awards and work study placements).

Table 5 Percentage of Graduating Students Who Participated in an Experiential Learning Experience

	SMA1			SMA2		
Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Science	24.5	21.9	27.9	31.0	32.0	33.0

There are no continuing education (CE) program offered through the Faculty of Science. CE offerings in the sciences at universities tend to be fairly limited, in general, although there may be some opportunities, given adequate (perhaps centralized) administrative support and investment in program development and any necessary associated operational infrastructure.

Table 6 Continuing education enrolment 2014/15-2019/20 (# course enrolments)

	SMA1			SMA2		
Program	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Total	0	0	0	0	0	0

A variety of research-related metrics are provided in Table 7. Grant and contract funding from Tri-Council is seen to have increased by about 19% across this two year period which are laudable improvements, particularly with fairly static numbers of tenured/tenure-track faculty and a slight decline in the number of graduate students. The number of disseminations for 2016/17 was estimated from 24 annual activity reports for tenure-track faculty for that year; the median h-index for 2017/17 was estimated from those Science professors with a Google Scholar profile. Faculty-specific metrics have not yet been determined; we intend to develop these over the coming year.

Table 7 Research Activity 2014/15-2019/20

	SMA1			SMA2		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Grant and contract funding (tri-council)	$926,431	$971,761	$1,101,048	$1,125,000	$1,150,000	$1,175,000
Number of research projects	27	30	31	32	33	34
Number of disseminations (peer-reviewed)	N/A	N/A	143 (107)[+]	145 (110)	148 (112)	150 (115)
Median h index	N/A	N/A	13[*]	13	14	14
Faculty specific metrics						
Not determined yet	N/A	N/A	N/A	N/A	N/A	N/A

Faculty of Social Science and Humanities (FSSH)

1 Preamble

Through scholarship, teaching and public service, the Faculty of Social Science and Humanities (FSSH) creates and mobilizes knowledge addressing complex problems in society, psychology, law, legal systems, digital and media communication, criminal justice, governance, and other themes essential for understanding the contemporary human condition. The Faculty openly advocates the promotion of human rights, justice, equality, mental health, inclusiveness, and sustainability, mixing local and global efforts to improve communities. The Faculty aspires to conduct high quality, high impact research on pressing social problems, and to disseminate this research for use in practice, policy, and scholarship; educate student-scholars and prepare them to enrich our local and global communities through professional contributions and community service; and contribute to local and global communities with the aim of improving the quality of life for global citizens. The Faculty fosters a collegial environment that values anti-oppression, inclusivity, collective responsibility, innovation, professional development, and shared governance.

Long-term goals (2028) include establishing a strong and influential research presence in the Canadian landscape in all of our disciplines, with over $1million in annual tri-council funding (which is not unreasonable given current trajectories; see Table 6). FSSH will become a hub of activity with several research centres, endowed and United Nations-related research chairs, and a National Centre of Excellence. We will expand our influence throughout the GTA and establish a firm international presence. We will attract top PhD students and postdocs and continue to be a leader/builder in the Oshawa downtown core (with established student-friendly physical corridors and a strong brand presence) and continue to collaborate on both research and student placement with organizations in the Durham region. At least one-third of FSSH courses will be offered online.

2 Executive Summary of Actions

2018/19 to 2019/20
New Programs:
Liberal Studies – *one tenure track shared hire with Political Science before 2020 (see Table 3)*
Sustainability Studies Minor – *no major resource implications*
DRPS Fellowship Program – *no major resource implications*
Decimal Lab/FSSH Toronto Satellite Office – *internal funding*
UOIT-CCA Black Youth In-Care Initiative: *resources include possible space rental, one course release*

In Development:

- interdisciplinary MA in a specialization linking Communication, Legal Studies and Political Science: *no immediate resource implications*
- BSc/BA in General Psychology: *one hire before 2020 (see Table 1)*
- development of a BSc in Integrative Neuroscience (with Science and Health Science): *shared equipment expenses*
- Minor in Indigenous Law and Politics/Studies: *need several new courses/sessional instructors; a curriculum designer*

- Graduate/undergraduate Specialization in Environmental Criminology: *no immediate resource implications*
- Graduate Criminology Diplomas/Certificates in Policing, Corrections, and Disaster Relief Communications*: no immediate resource implications*
- revive and operationalize a joint degree in Engineering and Public Policy: *no immediate resource implications but Political Science hire before 2020 helpful*
- further 2+2 Programs with international institutions: working with International Office on possible partners (see Table 4): *funding for on-site visits*
- develop a sustainable, international practicum experience, and an intense internship experience option: *shifts in practicum office already underway*
- implement the online/hybrid course development across disciplines: *course releases for new course development will be necessary*
- Research Centre for Countering Hate, Bias and Extremism: *space needs*

SMA3 2020-2023

- Implement new MA program in Communication/Policy/Law
- Implement new Indigenous Studies Minor
- Increase online course offerings by 25%
- Create and support a CRC with a social problem focus (e.g., aging, homelessness, human rights, immigration, terrorism, mental health)
- Create a National Centre of Excellence in Contemporary Policing Challenges
- Convert Decimal Lab into a UOIT-based Institute, with Toronto office
- Create a Neuroscience and the Law Research Centre
- Create a UNESCO Chair in Combatting Hate Crimes and Groups
- Increase the number of postdoctoral fellows, adjunct professors, and visiting scholars at FSSH
- Add tenure track faculty in two programs (see Table 1)
- Add one teaching faculty member (see Table 1)

3 Rationale: Status and projections of programmes and research statistics

FSSH offers undergraduate programs in Criminology, Forensic Psychology, Legal Studies, Communication and Communications and Digital Media Studies, and Political Science. In 2018 it will begin offering a programme in Liberal Studies and will house an inter-faculty Minor in Sustainability Studies. Graduate programmes at the Master's and Doctoral levels are offered in Criminology and Forensic Psychology.

Research strengths include causes of and responses to crime; citizenship, immigration and migration; communication and democracy; digital life; education for vulnerable and underrepresented people; family and social dynamics; First Nation rights; hate crimes and extremist groups; juvenile and adult offenders; mental disorders and disability; social exclusion; transnational law and crime; neuroscience; communication technologies and social, legal and economic change; corrections and offender rehabilitation; and urban development. FSSH is already a leader in research output at UOIT, but each of

its disciplines needs to compete with more established and, usually, larger programs in other Canadian/North American universities. Maximizing potential will involve coordinated efforts to establish and increase output from research centres and chairs, coordinating cross-disciplinary grant applications, and making strenuous efforts to present the research dimension of FSSH work to both peers and the general public through the hosting of conferences and other venues.

In order to become a first-rate research-based Faculty with an expanded range of themes and maintain our reputation for innovative pedagogy, several tenure-track hires will be necessary in the oncoming years (see Table 1). It is hoped that a tenure-track hire can be made in each discipline over the next four years, as well as some teaching faculty hires. FSSH faculty remain a relatively young cohort and there are no immediate retirements on the horizon.

Experiential Learning: FSSH has a high EL content (see Table 7) and its practicum program is one of its strengths. Our approach is to treat potential student employers as partners in mutual development. We are taking measures to improve the program further with some staff reassignment and curriculum changes designed to increase academic rigour; and we will be introducing a 200-hour internship option, preferably for paid internships, soon. We also want to increase the internationalization of all our programs (see Table 4) including for practicum placings.

Table 1 Tenured/Tenure Track Faculty and Teaching Faculty 2014/15-2019/20

	SMA1			**SMA2**		
Tenured/Tenure Track Teaching Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Communication and Digital Media Studies	7 1	7 1	7 1	6 1	6 1	6 1
Criminology	17 3	17 3	17 3	17 3	17 4	17 4
Forensic Psychology	7 0	7 0	7 0	8 0	8 1	9 1
Legal Studies	6 1	6 1	6 1	6 1	6 0	6 0
Political Science	2 2	2 2	2 2	2 2	3 2	3 2
Total Tenure/Tenure Track **Total Teaching Faculty**	**39** **7**	**39** **7**	**39** **7**	**39** **7**	**40** **8**	**41** **8**

Table 2 Proportion of course sections taught by sessional or contract faculty 2014/15-2019/20

	SMA1			**SMA2**		
Subject Code	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
ALSU	100%	100%	100%	100%	100%	100%
CDPS	9.1%	18.2%				
COMM	40.9%	34.8%	53.5%	40.0%	42.5%	37.5%
CRMN				18.2%	18.2%	18.2%

LGLS	36.4%	18.8%	4.2%	23.1%	30.8%	30.8%
POSC	33.3%	25.0%	20.0%	11.1%	33.3%	33.3%
PSYC	40.0%	11.4%	5.4%	15.8%	15.8%	35.0%
SOCI	40.0%	16.7%	66.7%			
SSCI	44.6%	21.4%	29.9%	35.6%	35.6%	34.4%
Total	**41.2%**	**22.8%**	**29.0%**	**26.1%**	**29.0%**	**31.8%**

Based on subject codes, subject codes do not necessarily map onto FSSH programs

Table 3 Undergraduate and graduate enrolment: Full-time equivalents (% part-time, average portion of full course load)

	SMA1			**SMA2**		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BA	**1783.9 (5.5, 0.9)**	**1624.3 (7.1, 0.9)**	**1526.7 (6.6, 0.9)**	**1521.0 (6.6, 0.9)**	**1487.9 (6.6, 0.9)**	**1440.9 (6.6, 0.9)**
Comm Dev & Policy Std Bridge		2.9 (20, 0.6)	3.0 (20, 0.6)	1.8 (20, 0.6)	1.7 (20, 0.6)	1.6 (20, 0.6)
Commun & Digital Media Studies			157.1 (5.6, 0.9)	154.6 (5.6, 0.9)	148.7 (5.6, 0.9)	141.4 (5.6, 0.9)
Communication	176.0 (3.6, 0.9)	153.0 (4.8, 0.9)	12.4 (0, 12.4)			
Communications Bridge Program	3.6 (28.6, 0.5)	5.5 (18.2, 0.5)	9.3 (13.3, 0.6)	19.8 (13.3, 0.6)	19 (13.3, 0.6)	18.1 (13.3, 0.6)
Community Dev & Policy Studies	44.7 (3.9, 0.9)	42.4 (4.2, 0.9)	27.8 (4.3, 0.6)	5.4 (4.3, 0.6)	5.2 (4.3, 0.6)	4.9 (4.3, 0.6)
Crim & Justice Bridge Program	64.6 (42.6, 1.1)	58.2 (54.8, 0.7)	58.8 (44.9, 0.9)	49.4 (44.9, 0.9)	47.6 (44.9, 0.9)	45.2 (44.9, 0.9)
Criminology and Justice	930.3 (5.1, 0.9)	767.9 (4.3, 0.9)	675.2 (6, 0.9)	671.5 (6, 0.9)	645.8 (6, 0.9)	614.0 (6, 0.9)
Forensic Psychology	314.3 (2.4, 0.9)	348.3 (3.7, 0.9)	368.7 (2.3, 0.9)	363.2 (2.3, 0.9)	349.3 (2.3, 0.9)	332.1 (2.3, 0.9)
Forensic Psychology Bridge	25.0 (0, 0.6)	35.5 (7.9, 0.9)	33.0 (5.7, 0.9)	33.3 (5.7, 0.9)	32.0 (5.7, 0.9)	30.4 (5.7, 0.9)
Legal Studies	210.9 (3.2, 1)	187.1 (6.2, 1)	148.6 (4.3, 0.9)	148.3 (4.3, 0.9)	142.7 (4.3, 0.9)	135.6 (4.3, 0.9)
Legal Studies-Bridge Program	12.7 (21.4, 0.9)	21.6 (19, 1)	19.5 (5, 1)	10.8 (5, 1)	10.4 (5, 1)	9.9 (5, 1)
Liberal Studies (New)					25.0	50.0
Political Science			13.3 (5, 0.6)	56.6 (5, 0.9)	54.5 (5, 0.9)	51.8 (5, 0.9)

Political Science Bridge				6.3 (5, 0.9)	6.1 (5, 0.9)	5.8 (5, 0.9)
Public Policy	1.8 (0, 0.6)	0.5 (0, 0.5)				
Undergraduate Total	**1783.9 (5.5, 0.9)**	**1624.3 (7.1, 0.9)**	**1526.7 (6.6, 0.9)**	**1521.0 (6.6, 0.9)**	**1487.9 (6.6, 0.9)**	**1440.9 (6.6, 0.9)**
MA	**24 (0, 1)**	**24.3 (4, 1)**	**30.0 (0, 1)**	**30.0 (0, 1)**	**20.9 (0, 1)**	**20.9 (0, 1)**
Criminology	24 (0, 1)	24.3 (4, 1)	30.0 (0, 1)	30.0 (0, 1)	20.9 (0, 1)	20.9 (0, 1)
MSC	**0.0 (0, 0)**	**4.0 (0, 1)**	**7.0 (0, 1)**	7.0 (0, 1)	5.7 (0, 1)	5.7 (0, 1)
Forensic Psychology	0.0 (0, 0)	4.0 (0, 1)	7.0 (0, 1)	7.0 (0, 1)	5.7 (0, 1)	5.7 (0, 1)
PHD	**0.0 (0, 0)**	**3.0 (0, 1)**	**9.0 (0, 1)**	14.0 (0, 1)	19.9 (0, 1)	23.9 (0, 1)
Forensic Psychology	0.0 (0, 0)	3.0 (0, 1)	9.0 (0, 1)	10.0 (0, 1)	13.0 (0, 1)	15.0 (0, 1)
Criminology	0.0 (0, 0)	0.0 (0, 0)	0.0 (0, 0)	4.0 (0, 1)	6.9 (0, 1)	8.9 (0, 1)
Graduate Total	**24.0 (0, 1)**	**31.3 (3.1, 1)**	**46.0 (0, 1)**	**51.0 (0, 1)**	**46.6 (0, 1)**	**50.6 (0, 1)**

Table 4 International enrolment 2014/15-2019/20; % by degree

	SMA1			**SMA2**		
Degree	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
BA	1.5	1.5	1.6	1.7	1.6	1.6
MA	8.3	0.0	0.0	0.0	0.0	0.0
MSC		0.0	0.0	0.0	0.0.	0.0
PHD		33.3	11.1	7.1	9.8	11.9

Table 5 Percentage of Graduating Students Who Participated in an Experiential Learning Experience

	SMA1			**SMA2**		
Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Social Science and Humanities	31.8	26.2	20.5	35.3	38.0	40.0

Table 6 Continuing education enrolment 2014/15-2019/20 (# course enrolments)

	SMA1			SMA2		
Program	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Total	0	0	0	0	1	1

Table 7 Research Activity 2014/15-2019/20

	SMA1			SMA2		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Grant and contract funding (tri-council)	$291,773	$349,988	$465,710	$512,281.00	$563,509.10	$619,860.01
Number of research projects	6	10	12	13	15	16
Number of contracted reports	4	3	4	4	4	5
Books	5	2	5	5	5	6
Chapters in edited books	25	16	17	19	21	25
Articles in refereed journals	63	49	46	51	56	65
Conference presentations	68	86	62	68	70	75

Provost's Integrated Academic Plan

Although each Faculty's Academic Plan is unique, several common themes emerge when they are collectively examined. In the short term, our undergraduate and graduate enrolment is constrained by both our Strategic Mandate Agreement and our limited space, so the university-wide emphasis in both SMA2 (2017-2020) and SMA3 (2020-2022) will be *quality*...continuing to enhance quality in our program offerings, student learning experience, and support for students. In both teaching and research, our goal is to deepen our expertise in strategic areas rather than broaden it beyond where we can excel. In the decade ahead, we see growth in student numbers that is carefully targeted and relatively modest (about 10%), especially when compared to our first decade of operation. Even this modest growth will be contingent on growing our infrastructure to enhance the learning and research environments.

In any academic plan, changes in faculty complement (number of Teaching and Tenured & Tenure-track Faculty Members) are always tentative based on our best guess as to developing academic and research programs. We will make incremental, strategic investments in our faculty complement when enrolment in academic programs and defined research priorities demand more resources. We will also use every opportunity for competitive and aggressive faculty renewal following retirements and other departures, so that we focus our human (and other resources) in areas where we see the best potential for increased quantity and quality of activity consistent with our plan. For both Faculty and support unit renewal, it is absolutely critical that this includes a focus on our priorities of equity and diversity in hiring and retaining the very best people.

Any academic plan must optimally balance support and resources provided centrally (e.g. Teaching & Learning Centre) with those developed, managed, and delivered by the Faculties. For example, Experiential Learning is part of every Faculty's Academic Plan, but the scale, style, and opportunities vary substantially between Faculties. In "increasing experiential learning", we must carefully weigh what services are delivered in Student Life and what are designed and delivered by a particular Faculty.

The same is true of research. A new Strategic Research Plan will be developed over the next couple of years at UOIT. However, it is clear from looking at the Faculty Academic Plans that central support for existing and proposed research centres and institutes may help some within- and inter-Faculty, as well as inter-university, research groups garner more resources and therefore generate more impact.

The following summary of university-wide actions over three time periods (SMA2, SMA3, the next decade), are derived from Faculty Academic Plans, an eye to the university Strategic Plan as well as a careful consideration of the balance and support discussed above.

Priority university-wide actions

- **SMA2 (2017-2020)**
  - **Stable undergraduate enrollment modest growth in new graduate programs** – our emphasis is increasing *quality* of the student experience and student support
  - Continued **improvement** in **student:faculty ratios** and TA support in strategic programs
  - **Support increasing student diversity** by developing new and enhancing existing projects that will:
    - Increase international enrollment from targeted source populations to targeted undergraduate and graduate programs
    - Increase gender diversity in STEM programs
    - Increase Indigenous students in all programs
  - Development of **greater academic depth** (including new courses, minors, majors, and degrees) in areas of strength (e.g. Entrepreneurship, Sustainability)
  - **Increased student success** by developing new and enhancing existing that will provide greater support:
    - In the classroom by faculty
    - By student advisors
    - In Student Life (most specifically in help centres and boot camps dedicated to math and writing)
  - **Increased experiential learning** with strong administrative support centrally coupled with Faculty oversight of academic connections, including:
    - co-op
    - internships
    - within-course
  - Support for **increased scholarly activity and dissemination**, including:
    - Development and linkage with existing UOIT Centres and Institutes both within and across Faculties
    - Enhanced administrative support for individual researchers
  - **Increased technology enhanced learning environment** (including more hybrid course offerings) that further blurs the line between face-to-face and online education with strong, discipline appropriate support from the Teaching & Learning Centre

- **SMA3 (2020-2023)**
    - **Targeted growth in new undergraduate graduate programs –** growth in new undergraduate and graduate programs that are in our areas of strength
    - Continued **improvement** in **student:faculty ratios** and TA support in strategic programs
    - **Increased student diversity** in three key areas:
        - Measureable increase in international enrolment from targeted source populations to targeted undergraduate and graduate program
        - Measureable increase in gender diversity in STEM program
        - Measureable increase in Indigenous students in all programs
    - **Increased continuing education** (from formal workshops and short courses to summer day camps) with coordinated marketing and Faculty-appropriate delivery
    - **Increased diversity, quantity, and quality of external academic, industry, and community partnerships**, including regional (Durham and Northumberland), provincial, national, and international
    - **Increased inter-Faculty academic and research partnerships**
    - Significant progress on **Indigenizing the Academy**, including:
        - Increased support of Indigenous students
        - Indigenizing the curriculum
        - Engaging Indigenous scholars

- **Next Decade (2018-2027)**

  10% Growth in total enrollment (to **>10,000FTEs**):
    - Maintaining **6% graduate** (2/3 thesis-based,1/3 course-based) enrollment
    - **Student:faculty ratios** better than provincial average across all programs
    - Infrastructure growth to accommodate increased teaching and research

  Diverse student population including:
    - **10% international** (minimum 1% in each Faculty)
    - Significantly **more gender diversity** in STEM programs
    - Significantly **more Indigenous students** in all programs

  Diverse faculty and staff population that reflects the diversity of our student and community population

  Research and scholarly work in each Faculty that has **regional, provincial, national, and international prominence** in our chosen areas of strength

  UOIT's faculty and staff will connect with and serve our regional community with depth and breadth that has significant local impact that resonates provincially, nationally, and internationally

UNIVERSITY OF ONTARIO INSTITUTE OF TECHNOLOGY

2017-2022 STRATEGIC PLAN: Challenge, Innovate, Connect

The University of Ontario Institute of Technology is Canada's emerging leader in career-ready education and collaborative research that produces new and useful ideas. A fast-growing university with ambitious expansion plans, we are committed to social, scientific and economic innovations that create a better Canada and a better world. With this plan our university aims to be recognized globally as a change-maker and leader in technology-driven research and scholarship. Our reputation is built upon our strengths and will advance through a sharpened focus on *three key goals*:

CHALLENGE: We will produce and inspire future leaders who have real-world skillsets.

Why this matters: A pioneering spirit led to UOIT's foundation. That spirit calls each of us to **adapt** and **grow** through the personal, professional, and academic challenges we face. Our university is a place for learners to test themselves and improve their performance – we also strive to be a place that inspires this ability in others. We all contribute to developing leaders from diverse backgrounds who emerge ready to make an impact today and to make real-world advancements tomorrow. We commit to ***thinking big and breaking new ground***.

To do this, we will:

- Offer a greater variety of **lifelong learning** through career-focused professional development options, because education enhances marketability and career progression.
- Amplify our **research reputation** through entrepreneurial scholarship, because ideas are our main export to the world.
- Provide developmental opportunities that help every individual stand out, because becoming **better people** and learning from each other form the cornerstones of retaining the best among us.

INNOVATE: We will create new approaches, partnerships, and solutions to improve society.

Why this matters: Our faculty and student researchers contribute to cultural, economic and scientific changes worldwide through **scholarship and discovery**. Together, we make a difference by answering the big questions that face society at multiple levels

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such as issues with sustainability and the impact of technology on our world. In collaboration with our partners, we provide **inspirational and imaginative solutions** that benefit our local and global communities. We commit to growing our ***culture of discovery***.

To do this, we will:

- Double the number of courses that mix technology and face-to-face education to make learner-centered environments, because transformative learning builds problem-solving capacity.
- Challenge the status quo through our interdisciplinary approach to knowledge development and increase our research activity, because our job is to convert ideas into actions.
- Simplify and refine our university processes, because doing better work frees up time, increases productivity, and improves our daily lives.

CONNECT: We will build lasting relationships to make UOIT a remarkable place for work and study.

Why this matters: Beyond basic learning interactions, the university experience is all about the connections with the places and the people. UOIT is a place where lasting relationships are formed among people with different **approaches to thinking, doing and leading**. Our culture thrives on **good ideas and collegial exchanges** with educational organizations, businesses, and our community; together, we work to improve this university, the Durham and Northumberland Regions, and the world. We commit to inspiring everyone to do their best work in ***a place where they belong*****.**

To do this we will:

- Offer practical **hands-on learning** experiences, like co-ops, internships, research practicums, international exchanges, and entrepreneurial opportunities to *every student,* because experiential learning , develops the skills that employers want.
- Build **research partnerships** that fortify our university's key strengths, because our national and international collaborations open doors to new ideas and initiatives both locally and globally.
- Unite our community by increasing opportunities to meet, make friends, and form **better relationships,** because every interaction is an opportunity to make a difference.

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STRATEGIC MANDATE AGREEMENT

University of Ontario Institute of Technology (UOIT)
Ministry of Advanced Education and Skills Development
2017-20

SIGNED for and on behalf of the Ministry of Advanced Education and Skills Development by:

Sheldon Levy
Deputy Minister

Date

SIGNED for and on behalf of University of Ontario Institute of Technology by:

Tim McTiernan
President

October 17, 2017

Date

Ontario

UNIVERSITY OF ONTARIO INSTITUTE OF TECHNOLOGY

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Ontario's Vision for Postsecondary Education

Ontario's colleges and universities will drive creativity, innovation, knowledge, skills development and community engagement through teaching and learning, research, and service.

Ontario's colleges and universities will put students first by providing the best possible learning experience for all qualified learners in an affordable and financially sustainable way, ensuring high quality and globally competitive outcomes for students and Ontario's economy.

University of Ontario Institute of Technology Vision, Mission and Mandate

Vision

With its foundation in technology, the sciences and professional practice, UOIT advances the discovery and application of knowledge that accelerates economic growth, regional development and social innovation, and inspires graduates who will continue to make an impact on the world, as it is and as it will be.

Mission

- Provide superior undergraduate and graduate programs that are technology enriched and responsive to the needs of students and the evolving workplace.
- Conduct research that creates knowledge, solves problems, results in economic and social innovation and engages students.
- Facilitate lifelong learning that is flexible, inclusive and emphasizes college to university transfers.
- Develop academic and research collaborations with industry and community that stimulate and enhance the region and university at home and abroad.
- Cultivate a dynamic learning environment for students by promoting social engagement, fostering critical thinking and integrating experiences inside and outside the classroom.

Please see copy of the university's refreshed strategic plan:
https://shared.uoit.ca/shared/department/opp/Governance/Office-of-the-President/2017-2022-strat-plan.pdf

Aspirations

The Ministry recognizes the importance of supporting institutions to evolve and acknowledges the strategic aspirations of its postsecondary education institutions. The SMA is not intended to capture all decisions and issues in the postsecondary education system, as many will be addressed through the Ministry's policies and standard processes. The Ministry will not be approving any requests for capital funding or new program approvals, for example, through the SMA process.

Institutional Aspirations

UOIT was established with a mandate to advance the highest quality of learning, teaching, research and professional practice and with a special mission to provide career-oriented university programs that create opportunities for college graduates to pursue a university degree. UOIT's focus on pathways, experiential learning and innovative postgraduate opportunities aligns with the Ministry of Advanced Education and Skills Development's (MAESD) access agenda for postsecondary education. UOIT is a differentiated university that cultivates innovation and quality in research and teaching at the graduate and undergraduate levels. The university has demonstrated clearly in its past performance and its strategy for the future that it is a driving economic force in Durham Region and Northumberland County.

To meet the needs of a technology-driven knowledge economy, universities must anticipate the needs of Ontarians, both locally and province-wide, providing skills to those who will pursue careers in this environment and critical knowledge for citizens who will live through the complex changes shaping contemporary society. UOIT's strategic plan, *Challenge Innovate Connect (2017-2022)*, demonstrates its commitment to this path. UOIT continues to: prepare its students for tomorrow's workplace; drive innovation in the province through research and scholarly work; and connect with local, national, and international communities to ensure diversity, equity and inclusion. To achieve these goals, UOIT continues to evolve its learning and research strategies to provide its graduates, faculty and staff with the skills required for the evolving technologically intensive workplace. It provides intellectual space to reflect on the social, cultural, ethical, environmental and other implications of the knowledge economy.

During the three years covered by SMA2, UOIT will focus on providing greater depth in its current programming with some key, strategic areas of new program and pathway development. This will involve intense efforts in interdisciplinary research and scholarly work that will provide a breadth of experience for all university members, providing a rich environment for students and preparing them for diverse and evolving career paths. UOIT will expand its capacity for academic and research partnerships with industry, community, the public sector and other institutions at home and abroad to engage its faculty, graduate and undergraduate students. These partnerships will create knowledge, help address complex societal challenges and contribute to Canada's economic and social development. This will distinguish UOIT as an inclusive, technology-enriched, innovative institution where student-centred learning practices deployed universally across a forward-looking university.

Shared Objectives and Priorities for Differentiation

1.0 Student Experience

This section captures institutional strengths in improving student experience, outcomes and success. This section recognizes institutions for measuring the broader learning environment, such as continuity of learning pathways; retention; student satisfaction; co-curricular activities and records; career preparedness; and student services and supports.

Institutional Approach to Improving Student Experience

UOIT opened in 2003 with 900 students and now serves more than 10,000 students each year. Its 16,000-plus alumni each hold a degree forged from a mix of formal theory, newest thinking, experiential learning and soft skill development. At this young university, students actively contribute to the friendly and vibrant campus — one that inspires students to get involved and change their world and then the world. Students embrace many campus community opportunities, from volunteering as peer mentors to leading and participating in student government, clubs, sports teams and academic competitions. Upper-year undergraduate and graduate students also engage extensively in the design and delivery of co-curricular programs and services tailored to the needs and interests of UOIT's diverse student population. Small class sizes allow students to provide constant feedback through regular discourse with professors, reflecting UOIT's genuine commitment to integrate student input as it creates new, innovative programs.

UOIT celebrates, and is strengthened by, a diverse student population, which includes a very high proportion of first-generation, low-income and commuter students from a broad range of under-represented groups. To encourage persistence and foster academic success in such a diverse group, students need additional support. To date, these efforts have focused primarily on courses that have high-failure rates, such as introductory math, biology, chemistry and physics. These supports, including peer mentoring and specialized transitional programs, begin during orientation and extend throughout first year and on to graduation. This improves the retention and success of all learners.

Retention at UOIT is largely a first-year problem. It is building on current, innovative programs to help students who may have otherwise been required to withdraw from university due to poor academic standing. This program is based on collaboration among faculty and staff across the university and includes for-credit courses to provide remediation and support for at-risk students. This curriculum will help build skills in numeracy, literacy, time management and other areas identified to promote student success.

Importantly, UOIT relies on its students to assist in the success of their peers. Many student volunteers support major university events, such as orientation and convocation. In addition, students serve as mentors, tutors, technology peer helpers, health and wellness ambassadors, coaches, referees and trainers, and they contribute to myriad other volunteer and outreach activities. These opportunities allow students help other students and to acquire critical leadership, communication and interpersonal skills that prepare them for their future careers.

Student engagement is a product of ongoing interactions with instructors, other students and the broader institutional environment. As UOIT increases and enhances its use of technology, it will maintain a focus on personal support. Its high-tech, high-touch approach is evident in a number of areas, including promoting healthy well-being. For example, Wendy Stanyon, PhD, of the Faculty of Health Sciences, developed Mindsight, an easy-to-use training tool designed to help alleviate mental illness stigma. The Mindsight tool is available to everyone free of charge and takes less than two hours to complete. It has been effective in helping students and reminding them that no one need suffer alone.

UOIT reaffirms its commitment that each one of its graduates achieves deep disciplinary knowledge and personal and professional competencies. To this end, UOIT continues to use experiential learning as a key aspect of its programming. It employs many high-impact practices in the classroom, including important supplements to in-class activities such as labs, small group tutorials, seminars and learning communities. Capstone projects, practica, co-op placements and internships, research assistantships and research awards also ensure students engage in enriching experiential learning activities. UOIT has committed significant resources to promote the professional development and innovative spirit of its students that supplement their disciplinary training and knowledge. For example, the School of Graduate and Postdoctoral Studies launched a revamped graduate professional skills program that emphasizes entrepreneurship and communication skills, among other professional skills, to better prepare graduates for the changing job market. These opportunities provide students with the ability to use technology in creative ways and make meaningful contributions in an increasingly complex technological and social context. The intensive mentoring relationships among faculty, graduate and undergraduate students in research, innovation and problem-focused experiential learning highlight the interactions that occur university-wide. These activities ensure students will thrive in tomorrow's workplace, and confirms their readiness to take their place in the broader community.

Examples of Institutional Initiatives

UOIT's Ambassador Program provides student leaders with the opportunity to expand and develop their leadership abilities, serve as role models for their peers and make a difference in the campus community. Ambassadors receive extensive training in leadership, bystander interventions, event planning and mental health. They then contribute as mentors, orientation leaders, technology peer helpers, health and wellness ambassadors and in other volunteer and outreach roles.

Math Study Hall provides one-on-one help and drop-in study sessions conducted by peer tutors in mathematics, physics, engineering and study skills. These sessions provide students with opportunities to practise concepts

and problem sets to prepare for success in the classroom. Similarly, writing drop-in sessions allow peer tutors to guide students through the writing process to further facilitate academic success.

Smart Start provides new students with the opportunity to attend a one- or two-day summer preparation program to review fundamentals in calculus, physics, business math, statistics, reading, writing and study skills to prepare for a successful transition to university life.

Faculty, staff and students have worked together to develop an Open Online Learning resource that helps students strengthen their academic skills in mathematics, academic writing and study strategies through video tutorials, tip sheets, interactive tools and resources.

Metrics and Targets

System-Wide Metrics	2019-20 Target Range
Proportion of fourth year students with two or more High-Impact Practices (HIPs) (from the National Survey of Student Engagement)	52% to 56%
Year 1 to Year 2 retention (from the Consortium for Student Retention Data Exchange)	79% to 81%
Proportion of operating expenditures on student services, net of student assistance (as reported in the Council of University Finance Officers data)	5% to 7%

Institutional Metrics	2019-20 Target
Percentage of undergraduate students accessing peer support programs	30% to 35%

2.0 Innovation in Teaching and Learning Excellence

This section focuses on innovative efforts including pedagogical approaches, program delivery and student services that contribute to a highly skilled workforce and ensure positive student outcomes.

This section captures institutional strengths in delivering high-quality learning experiences, such as experiential, entrepreneurial, personalized and digital learning, to prepare students for rewarding careers. It includes recognition of student competencies that improve employability.

It begins to identify indicators of quality that are currently available and within an institution's control.

Institutional Approach to Innovation in Teaching and Learning Excellence

By teaching students new approaches to problem solving, along with innovative uses of technology, UOIT's commitment to providing a technology-enhanced learning environment produces new types of graduates. UOIT prepares each student to be an engaged citizen leader with an entrepreneurial spirit — an individual who is prepared to excel in the modern workplace and lead their peers.

UOIT's strengths in innovative teaching and learning are reflected in its high-quality pedagogy, critical study of technological solutions, proactive student engagement and application of high-impact practices across the curriculum. UOIT continues to enrich outcomes-based learning strategies, which consistently demonstrate superior learning outcomes wherever they have been implemented. It continues to emphasize the use of problem-, case-, project- and team-based learning strategies in its curriculum to provide flexible opportunities for self-learning and to highlight the mutually enriching interactions that occur in research settings. By its very nature, collaborative research is experiential and achieves gains in higher-order learning. These research opportunities have resulted in many fruitful partnerships with Ontario-based small and medium-sized enterprises (SMEs). The research conducted by UOIT's graduate and undergraduate students and faculty strengthens its partnerships within the community, facilitates employment and tangibly contributes to the economic development of the region and province. Students who develop these skills become local and global leaders and are well prepared for employment success. These experiences are also bi-directional, allowing UOIT to engage with local businesses and community organizations and to therefore increase the impact of its research.

UOIT continues to develop and resource unique programs to meet local, regional and national needs for enhanced training and credentials, including much-needed undergraduate and graduate certificates and innovative graduate programs. It will meet these needs by developing innovative graduate programs that focus on professional programs and interdisciplinary partnerships.

Many of UOIT's programs may be accessed either fully online or in hybrid form, further increasing opportunities for non-traditional students. UOIT offers more than 1,400 courses per year, with more than eight per cent in hybrid format and 12 per cent totally online. UOIT is committed to growing its online and hybrid offerings each year. Currently the Bachelor of Arts in Adult Education, the Master of Education and the Bachelor of Allied Health Sciences programs are offered entirely online. UOIT's ability to engage these technologies relies on its learning environment, which allows all of its courses to be web-enriched, enhancing flexibility for students.

UOIT uses innovative pedagogy in graduate and undergraduate education, offering extensive support to instructors working in a technology-enriched learning environment. All academic staff (full- and part-time) can access the university's Teaching and Learning Centre to get technological solutions, software support and help with developing traditional, hybrid and online courses. UOIT shares best practices in teaching through the Teaching and Learning Advisory Committee, composed of scholars and staff who have significant expertise in innovative pedagogy.

UOIT invests significant resources to augment the use of technology by students and faculty in all of its academic programs. It goes beyond increased use of the tools in its Learning Management System (currently Blackboard) with innovative "teach-nology tools" that blur the boundaries among face-to-face, online and experiential learning silos. Students operate simulated businesses in the Bachelor of Commerce program, write blog reviews and online position pieces in the Master of Education program and upgrade their skills with a leading-edge nuclear power plant simulation in the Advanced Operations Overview for Managers program.

Examples of Institutional Initiatives

ACE (a specialized research and testing facility): Several courses in UOIT's Engineering, Health Sciences and Science programs take advantage of this on-site, one-of-a-kind facility for in-course experiential learning opportunities, including research projects for students. As evidence by numerous automobile studies but also used when Exercise Physiology students needed a place to study the cardiovascular response of exercise in a hot and humid climate. For the two-day test, stationary bikes were set up in one of the ACE climate chambers. ACE cranked the temperature to a sweltering 35 degrees Celsius (ACE can go as high as plus 60 or as low as minus 40) with the humidity dialed up to 60 per cent.These experiences are unique to the university.

Internships in the Kinesiology program: These "kinternships" are one-term (i.e., 12-week) placements in fourth year. Many of these are co-ordinated with UOIT's varsity sports teams and selected courses (e.g., Sport Injury Management and Advanced Sport Injury Management), where students spend time as team athletic trainers.

Bachelor of Education (BEd) Internship Course and Volunteer Activity: All BEd students develop a meaningful project leading to a solution that will affect an organization and/or its clients. Organizations include not-for-profits, training departments and research laboratories. BEd students also engage in volunteer research experiences in community-oriented laboratories, such as: coding and literacy with high-priority schools in the Durham District School Board; working with students and individuals with differing abilities at the Grandview Children's Centre or the Abilities Centre; and engaging with the Grove School project, focused on youth with fetal alcohol spectrum disorder.

Metrics and Targets

System-Wide Metrics	2019-20 Target
Composite score on National Survey of Student Engagement questions related to students' perceived gains in higher order learning outcomes	27% to 30%
Proportion of programs with explicit curriculum maps and articulation of learning outcomes	100%
Graduation rate (from the Consortium for Student Retention Data Exchange)	65% to 69%

Institutional Metrics	2019-20 Target
Percentage of undergraduate e-learning courses (hybrid/ online)	20% to 22%

3.0 Access and Equity

This section recognizes institutions for their efforts in improving postsecondary education equity and access. Institutions play an important role in providing equitable and inclusive environments that make it possible for students from diverse communities to thrive and succeed.

Institutions will also be recognized for creating equitable access opportunities that can include multiple entrance pathways and flexible policies and programming, with the focus on students who, without interventions and support, would not otherwise participate in postsecondary education. Examples include outreach to marginalized youth, transition, bridging and access programs for adults with atypical education histories and who do not meet admission requirements.

Institutional Approach to Improving Access and Equity

Although many areas in Ontario will experience population decline in the next 20 to 25 years (Ministry of Finance 2016), the Greater Toronto Area (GTA) is projected to have a more than 40 per cent increase in total population. Durham Region and Northumberland County will also exceed the provincial average. In 2016, 40 per cent of UOIT's undergraduate students came from Durham Region and Northumberland County and a further 45 per cent of students were from the GTA. As the demand for quality postsecondary education increases in these areas, UOIT's location and high-quality, career-focused programs will be a critical part of meeting this demand. UOIT actively recruits and supports underserved students, particularly those who are first in their family to go to university (first-generation students). More than 56 per cent of UOIT's are first-generation. It also admits students who have lower entrance marks for their chosen program than those accepted by other institutions. This provides opportunities in high-demand science, technology, engineering and math (STEM) programs. Additionally, UOIT's student population has one of the highest rates of Ontario Student Assistance Program (OSAP) applications and funding per student in the province, further reinforcing its access agenda. UOIT remains committed to ensuring the diversity and equity of its student body, thereby fulfilling its role in providing meaningful educational opportunities for all Ontarians.

Accessible education is at the foundation of UOIT's values and defines how it approaches education. As a result, underserved students have access to education and have the opportunity to achieve their full potential and thrive inside and outside the classroom. These students win national competitions against their peers and solve challenges in the lab and through capstone projects. They graduate as citizen leaders with an entrepreneurial mindset and the confidence and ability to achieve successful and rewarding careers. UOIT also provides programs for specific student populations to address their unique needs. These efforts include the provision of

online resources and providing specialists in student development, career counselling, athletics, writing, mathematics, engineering, physics, English-as-an-acquired language programming, alternative learning strategies and mental health. UOIT plans to extend these activities to include self-assessment and outcomes resources, resilience training and entrepreneurship opportunities. It will do so by enhancing the professional development of students, staff and faculty to serve better the unique needs of all students.

UOIT continues to fulfill its mandate to facilitate pathways by engaging in system-wide, multi-lateral articulation agreements with colleges that increase student access. These focus on embedded bridge programs and block transfer arrangements. Research shows that many students who are not prepared for university, or who lack confidence in their skills, often withdraw from programs. By allowing students to experience university-level course content in a more structured college environment, UOIT builds confidence and facilitates access. UOIT offers completion programs in novel, career-focused undergraduate baccalaureate degrees that align with MAESD's vision of improved access to quality postsecondary education. UOIT continues to value and grow its partnership with Durham College to find synergies related to being located close together. By focusing on overall program standards, rather than course-by-course equivalencies, UOIT has increased student access and opened programs to all students.

The UOIT-Baagwating Indigenous Student Centre opened in 2014. At the Centre, students experience a sacred place and a strong community. It's a place where Indigenous students gather, learn and grow while on their path to academic success and cultural and career fulfillment. UOIT offers programs and services to support successful transition to postsecondary education and to help students have the best possible university experience. It is proud of its strong connection to the local First Nation, the Mississaugas of Scugog Island First Nation, and it looks forward to expanding its relationships with other Indigenous communities throughout Ontario. An Indigenous Student Liaison Officer, who travels to First Nation communities, secondary schools and community organizations, continues to work on programs that will increase access for Indigenous students.

Examples of Institutional Initiatives

- The Peer Tutor Program offers students the opportunity to work one-on-one with a trained peer tutor. These sessions allow students to receive help based on their individual needs at the appropriate pace and level of instruction. Peer tutoring also helps students to meet others like themselves and share experiences with colleagues with similar backgrounds. All students, including mature and pathway students, have access to this program.
- The First-Year Transition Program promotes the successful transition of all students throughout their first year through engagement in a range of activities inside and outside of the classroom.
- Since 2014, UOIT has provided an Indigenous Visiting Elders Program for one week each semester. Elders carry considerable knowledge obtained from their life experience of wisdom, harmony and balance, which they share with others. Elders engage in one-on-one or group appointments with students, staff and faculty, and visit classrooms for lectures, hold Lunch and Learn sessions and visit community partners.

- The bystander training program, RISE (Respecting Individuals and Supporting Equity), provides training and education on how to prevent and respond to discrimination and harassment on campus. This program has five components — a main session to introduce participants to tools and options they can use to prevent and respond to discrimination and harassment as well as four additional sessions where students can learn more specifically about issues related to First Peoples, gender, religion and spirituality and sexual violence prevention. This is part of the comprehensive approach helps ensure an inclusive, positive and safe campus environment.

Metrics and Targets

System-Wide Metrics	2019-20 Expected Value
Number and proportion of the following groups at an institution:	
Indigenous students	0.9% (83)
First generation students	56.8% (5,219)
Students with disabilities	6.4% (581)
Francophone students	N/A
Share of OSAP recipients at an institution relative to its total number of eligible students	72.3%
Number of transfer applicants and registrations, as captured by the Ontario University Application Centre	1400/ 400

Institutional Metrics	2019-20 Target
Number of transfer registrants, as captured by the university*	650

**Includes PT/FT, internal applications and all terms*

4.0 Research Excellence and Impact

This section captures institutional strengths in producing high-quality research on the continuum of fundamental and applied research through activity that further raises Ontario's profile as a globally recognized research and innovation hub. It also acknowledges that research capacity is strongly linked with graduate education.

Institutional Approach to Research Excellence and Impact

UOIT has an ambitious goal of amplifying its research excellence and impact with multidisciplinary, technology-enhanced approaches to scholarship and innovation. Faculty and student researchers continue to conduct fundamental research and seek creative solutions to challenges that engage industry and community partners at local, regional and global levels.

UOIT has made strategic investments in research infrastructure including, more than 70 specialized laboratories. The Energy Systems and Nuclear Science Research Centre (ERC) houses the university's unique-in-Canada education programs and research in geothermal, hydraulic, hydrogen, natural gas, nuclear, solar and wind energy technologies. It enables leading-edge research in clean and green energies and technologies and promotes Canada's entrepreneurial advantage through public-private research and commercialization partnerships. In all seven faculties, ideas are mobilized from the laboratory bench or classroom to market, through collaborative initiatives that engage businesses, non-profits, hospitals and various levels of government.

UOIT's focus on technology-driven research and development provides opportunities for collaboration with partners across sectors, including: the growing start-up community in Durham Region and Northumberland County; SMEs; large national and international firms; community organizations and non-government organizations; municipal and regional governments; and other academic institutions. These partnerships provide high-quality experiential learning for students and high levels of research engagement for researchers. They also contribute a significant proportion of UOIT's total research funding and provide opportunities for technology transfer and knowledge mobilization through employment opportunities for graduates.

UOIT focuses on research that contributes to building smart, sustainable communities that are connected, inclusive and prosperous. Specifically, it has identified strategic clusters of research activity that reflect its significant capacity in areas that intersect with the innovation and economic development priorities of Ontario and Canada.

Information and communication technology (ICT) and informatics: Six of UOIT's 11 Canada Research Chair (CRC) positions and more than one in five faculty members engage in research, knowledge mobilization and Highly Qualified Personnel training in ICT and informatics. Essential high-performance computing infrastructure is provided through the Southern Ontario Smart Computing Innovation Platform (SOSCIP), of which UOIT was a founding partner, Shared Hierarchical Academic Research Computing Network (SHARCNET), Orion, Compute Ontario and Compute Canada. The new Software and Informatics Research Centre (opening in the fall of 2017) will significantly enhance UOIT's research capabilities in this area.

Energy and environmental systems*:* UOIT's five CRCs, industrial research chairs and the work of nearly 20 per cent of faculty reflect its research strength in this area. The campus is home to the Clean Energy Research Laboratory (used to conduct research on hydrogen production), the borehole thermal energy storage system, a microgrid installation and the ERC, which have unique capabilities and facility in geothermal, hydraulic, hydrogen, natural gas, solar and wind energy technologies. These facilities enable researchers and students to inform public policy on energy production and advance efficient and effective green energy technologies. They also help industry partners develop and implement more effective energy solutions, while protecting UOIT's environmental legacy. UOIT's nuclear engineering programs (undergraduate and graduate) conduct

internationally recognized research in such areas as nuclear waste management, health physics, reactor technologies and nuclear facility management.

Human health and community wellness: UOIT's five CRCs, the work of 18 per cent of faculty and a number of specialized research laboratories and centres highlight its research strength in this area. Specific examples include the Digital Culture and Media Laboratory, STEAM 3D Maker Lab, Educational Informatics Laboratory, Gaming and Virtual Reality Laboratory and the Centre for the Study of Disability Prevention and Rehabilitation. UOIT recognizes that promoting technological advancement demands critical reflection on its impact on individuals, socio-cultural groups, ecosystem health and municipalities across the lifespan and at all social economic levels.

Engineering and materials science*:* UOIT's research capacity in engineering and materials science focuses on developing clean technologies to advance Ontario's Climate Change Action Plan. Specialized facilities, such as ACE, the Electrochemical Materials Laboratory and the Advanced Storage Systems and Electrical Transportation Laboratory, provide critical infrastructure to advance research and technology development that are vital for cleaner industrial development and the construction and cultural evolution of sustainable communities. Research to advance materials and bio-based products support industry and attract Highly Qualified Personnel. Research on the socio-economic, environmental and cultural impacts of this technology stream, including policy and legal implications, will also be promoted in the social sciences and humanities.

Examples of Institutional Initiatives

- Fewer sick babies: UOIT's research has garnered global recognition as a leader in processing clinical data from hospital neonatal units in real-time, using IBM's InfoSphere Streams. Specialized clinical algorithms correlate and analyze thousands of real-time data sources from multiple electronic devices at the bedside in neonatal units and ultimately reduce mortality and improve health outcomes.
- Microgrid installation: In late 2016, UOIT became home to a large-scale microgrid installation. The microgrid, developed in partnership with Panasonic Eco Solutions Canada, provides a unique facility for research, testing and training skilled engineers to improve and develop the microgrid concept for broader use and seamless power transition during power failures. This will lead to novel emergency power options for essential services in installations such as hospitals, military facilities, chemical processing plants and research facilities.
- New Minor Injury Treatment Protocol: A comprehensive systematic review and economic analysis of common traffic injuries and treatments in Ontario led to the development of a new evidence-based protocol that will lead to changes in the insurance industry. The protocol will help insurers assess claims and assist healthcare providers in treating common injuries resulting from automobile collisions.
- TombSeer: A team led by two UOIT faculty members and a Computer Science student developed a unique platform that uses a gestural, augmented reality, 3D holographic to enhance museum visits for the public. Using interactive virtual imagery, it augments a replica of a cultural heritage exhibit, the Tomb of Kitines at the Royal Ontario Museum.

Metrics and Targets

System-Wide Metrics	2019-20 Target
Tri-council funding (total and share by council)	$4.7 – 5.2M (NSERC 1.1%, SSHRC 0.9%, CIHR 0.1%)
Number of papers (total and per full-time faculty)	1,800 – 2,000 (~1.3)
Number of citations (total and per paper)	8,000 – 10,000 (~4.5)

Institutional Metrics	2019-20 Target
Total sponsored research	$11 - 13 M

5.0 Innovation, Economic Development and Community Engagement

This section recognizes the unique role institutions play in contributing to their communities and to economic development, as well as to building dynamic partnerships with business, industry, community members and other colleges and universities. It focuses on regional clusters, customized training, entrepreneurial activities, jobs, community revitalization efforts, international collaborations, students, partnerships with Aboriginal Institutes and a program mix that meets needs locally, regionally and beyond.

Institutional Approach to Innovation, Economic Development and Community Engagement

Today's employers seek graduates who can demonstrate a passion for inquiry, analytic prowess, teamwork and practical skills they can immediately apply in the workplace. UOIT nurtures these skills in all programs. Faculty experts work with multiple industry partners to develop unique programs that incorporate industry-current, program-specific software and practical, hands-on experience in a real-world setting through opportunities such as co-ops, internships and practica.

A diversified vibrant Ontario, based largely on the knowledge economy, will rely on a strong and efficient postsecondary education system that anticipates and meets the evolving needs of Ontarians. With students in STEM-rich programs focused on disciplines that inform and affect the health, economic, social and policy development of communities; growing annual research funding; and strong relationships with Trent University and Durham College, UOIT is a catalyst and economic driving force in Durham Region and Northumberland County. In fact, Durham Region named UOIT as one of its key drivers of growth.[1] In 2014-2015 alone, UOIT generated approximately $205 million towards Ontario's GDP, including support for more than 1,900 jobs in the province (1,300 of these are located within Durham Region and Northumberland County). By 2019-2020, these results are expected to grow by 20 per cent, with a cumulative contribution to the provincial economy of approximately $1.2 billion dollars over that time frame.[2] Considering UOIT's proximity to Highway 401, the recent Highway 407 extension and the extension of GO Train services to Bowmanville, these estimates are likely conservative.

Durham Region's and Northumberland County's[3] strategic plans speak to UOIT's alignment with the needs of regional development. Both plans highlight UOIT's role in the diversification of employment opportunities. The university engages local and regional economic development departments and supports initiatives that attract and retain businesses to the region. In this area, UOIT interacted and engaged with numerous local, national and international companies and organizations. These interactions resulted in UOIT-led research projects and in experiential learning opportunities for students. UOIT continues to build talent across the region, through its graduate and undergraduate educational programs and its continuing education programs. A key example is UOIT's provision of non-degree programs through an Advanced Operations Overview Management course for managers at Ontario Power Generation (OPG). As many of these programs become driven by online delivery, they will continue to meet the emerging needs of students and industry within Durham Region and Northumberland County and they will be available to those unable to attend conventional face-to-face learning opportunities.

Between 2013 and 2016, UOIT generated 28 start-up companies (students, faculty and staff) that have generated more than 200 jobs. UOIT has a strong commitment to entrepreneurship and incubation opportunities for students and the community, which is projected to expand as it offers entrepreneurship majors and minors. Additionally, UOIT's non-academic Brilliant Entrepreneurship program helps students develop skills by providing boot camps, incubation space, mentorship, networking and funding. The university also partners with Simon Fraser University and Ryerson University in the Incubate Innovate Network of Canada (I-INC), an incubator network focused on the IT and gaming sector. I-INC has a pan-Canadian and international focus designed to offer firms exposure to national and international markets by leveraging the facilities and expertise of partnered accelerator/incubator programs operated at both the national and international levels.

[1] http://www.durham.ca/growthplan/consultant_reports/FINALRecommendedGrowthScenarioandPolicyDirectionsReportNovember17.pdf
[2] HDR Corporation (2015). https://shared.uoit.ca/shared/uoit/images/about-uoit/economic-impact-report_v3.pdf
[3] http://www.northumberlandcounty.ca/en/council/Strategic_Plan.asp and https://www.investdurham.ca/Assets/Publications/EcDevStrategy2017-2021.pdf

UOIT also contributes to the health and sustainability of Durham Region and Northumberland County. Students and researchers partner with numerous school boards, governmental agencies and non-government organizations, clinics and community agencies. These partnerships provide opportunities for students to apply their knowledge in real-world settings and opportunities for researchers to work with organizations to address important societal and scientific challenges. Each year more than 1,600 undergraduate students participate in capstone projects, practica, internships and co-op work placements. These hands-on learning opportunities are available because of extensive partnerships in governmental, industry and community organizations.

UOIT is an important part of the social, cultural and economic fabric of Durham Region, Northumberland County and Ontario through such outreach and community engagement activities as science fairs, robotics competitions, summer camps and outreach into local school boards. For example, a partnership with Hydro One and three other universities has resulted in a 72 per cent increase in female secondary school students applying to the universities' engineering programs. UOIT also helps enrich Durham and Northumberland's diversity with its more than 600 international students and its hosting of international conferences and researchers from around the world.

Examples of Institutional Initiatives

Faculty, staff, and students engage in projects that address societal and scientific challenges with partners including General Motors of Canada, IBM, Lakeridge Health Corporation, Grandview Children's Centre, Ontario Power Generation, Ontario Shores Centre for Mental Health Sciences and Durham Regional Police Service.

FastStart, a regional entrepreneurship training and development program, operates in partnership with Trent University, Fleming College, Durham College, Spark Centre and the Greater Peterborough Innovation Cluster.

UOIT enhances the entrepreneurial skills of students through its student incubator, which provides a supportive environment for the growth of businesses. More than 1,110 students participated in extra-curricular entrepreneurship events from September 2014 to December 2016.

Metrics and Targets

System-Wide Metrics	2019-20 Target
Graduate employment rates	94% to 96%
Number of graduates employed full time in a related job	89% to 91%

Institutional Metrics	2019-20 Target
Percentage of graduating students involved in work-integrated learning activity*	90%

**Work-integrated learning includes co-op, internships, practicums, capstones, research/ teaching assistanceship, and designated courses.*

6.0 Enrolment Strategy and Program Direction

Enrolment Plan and Corridor Midpoints

This section establishes the agreed-upon corridor midpoint that will form the basis of enrolment-related funding over the course of the SMA period.

Corridor Midpoint

For funding purposes, **17,845.72** Weighted Grant Units (WGU) will be the corridor midpoint value for UOIT. This value was determined using the institution's actual enrolment (expressed as WGUs) from the 2016-17 academic year. UOIT will receive funding consistent with this level of enrolment and subject to the policies contained within the *Ontario University Funding Model Technical Manual,* May 2017, Version 1.0.

Projected Funding-Eligible Undergraduate Enrolments

Below is the institutions projected enrolment of funding-eligible undergraduate enrolments for UOIT

	Projected 2017-18	Projected 2018-19	Projected 2019-20
Undergraduate Full-time Headcounts	7,594	7,462	7,513

Note – for this table, Full-time Headcount should be reported for Fall term only.

Graduate Allocation – SMA 2017-2020

Below are the allocation of funding eligible graduate and PhD spaces for UOIT

	Target 2017-18	Target 2018-19	Target 2019-20
Masters	244	255	255
PhD	67	73	82
Total	311	328	337

Note – Allocation shown in FTEs

Projected International Enrolment

Below is the institutions projected enrolment of funding-eligible undergraduate enrolments for UOIT

	Projected 2017-18	Projected 2018-19	Projected 2019-20
Undergraduate Full-time Headcounts	512	579	619
Masters Full-time Headcounts	101	127	134
Doctoral Full-time Headcounts	68	73	82
Total Enrolment Full-time Headcounts	681	779	835

Note: International enrolments include all funding ineligible international students.

International Enrolment Strategy and Collaboration

UOIT's international strategy asserts that internationalization represents more than the presence of international students on campus; it includes opportunities for domestic students to travel abroad for study, research experiences, and/or internship and experiential learning opportunities. Internationalization also includes on-campus learning opportunities through curriculum and co-curricular learning (i.e., cultural activities).

Current international enrolment is approximately 600 students (470 undergraduate). UOIT plans including growing strategically its percentage of international students from six per cent to 10 per cent, bringing it in line with the provincial average. This small increase (approximately 300 students) will provide a more diverse student population and learning environment. At the graduate level, international students contribute significantly to the research enterprise. This supports faculty members' research programs and, in a number of cases, develops entrepreneurial opportunities to take discoveries to market, adding to Ontario's employment base and economic growth.

During the term SMA2, UOIT will focus on inward- and outward-bound student mobility. Through the International Office, UOIT supports students' aspirations to study abroad. It has developed a range of mobility partnerships with top-tier STEM-focused universities in Ireland, Germany, Austria, Italy, China, Singapore, Brazil, Chile and Scandinavia. Through these partnerships, students can have a quality international experience, return with full credit and, often, with a hands-on practice-based research or internship experience. Recognizing that on-campus visiting scholars/students add significantly to domestic students' international experience, UOIT receives more than 100 international undergraduate and graduate students annually. These students are active members of the university community and contribute significantly to its internationalized environment.

As with any international plan, there are inherent risks. For example, over-reliance on one national or regional cohort can prove problematic. A significant challenge is the retention of international students. To mitigate the risk of early withdrawals, UOIT's new English Learning Centre provides high-quality English for academic preparation programs. These programs serve as a conduit for the attraction of highly qualified international students and can help ensure that they obtain strong academic capacity in English. UOIT also works closely with Toronto and Vancouver-based English as a Second Language schools to support the international recruitment strategy.

To mitigate against changing national priorities, political turmoil or economic vagaries, UOIT takes a cautious approach to international recruitment. It works closely with Durham College to offer pathways and constantly assesses risk factors, capacity and regional opportunities (China, India, South America, Caribbean, Pacific Asia). As part of strategic enrolment management, trends are analyzed quarterly to ensure the alignment of diverse recruitment tactics with program capacity.

Strategic Areas of Program Strength and Expansion

Program Areas of Strength

1. Engineering
2. Digital/Information Science (e.g., software, computer science, analytics)
3. Nursing
4. Social Justice
5. Commerce
6. Energy and Environment
7. Professional Arts
8. Life Sciences
9. Education
10. Health Sciences

The proposed areas of program strength are intended to inform program approval processes.

Program Areas of Expansion

1. Energy and Environment
2. Informatics/Data Science
3. Liberal Studies
4. Sustainability and Urban Ecologies
5. Entrepreneurship

Financial Sustainability

The Ministry and the University recognize that financial sustainability and accountability are critical to achieving institutional mandates and realizing Ontario's vision for the postsecondary education system. To this end, it is agreed that:

It is the responsibility of the governing board and senior administrators of the University to identify, track, and address financial pressures and sustainability issues. At the same time, the Ministry has a financial stewardship role. The Ministry and the University agree to work collaboratively to achieve the common goal of financial sustainability and to ensure that Ontarians have access to a full range of affordable, high-quality postsecondary education options, now and in the future.

The University remains accountable to the Ministry with respect to effective and efficient use of provincial government resources and student resources covered by policy directives of the Ministry, or decisions impacting upon these, to maximize the value and impact of investments made in the postsecondary education system.

System-wide Metrics	2015-16 Actuals
• Net Income / (Loss) Ratio	1.71%
• Net Operating Revenues Ratio	10.97%
• Primary Reserve Ratio	27 days
• Interest Burden Ratio	9.35%
• Viability Ratio	0.06

7.0 Institutional Collaborations and Partnerships

To fulfill its vision, UOIT will need to partner and collaborate with other academic institutions, the private sector, community organizations, government and individuals.

UOIT has a significant partnership with Durham College that extends beyond a common north Oshawa campus location to include shared service delivery, articulation agreements, joint research projects and more. UOIT partnered with Durham College in 2016 to create an Innovative Initiatives Fund to support collaborative initiatives proposed by staff and faculty at both institutions. The underlying spirit of the successful projects should be that students benefit from collaboration and that the campus and its institutions become more than the sum of their parts.

UOIT continues to expand its partnerships with other postsecondary institutions, which includes pathway agreements with almost every college in the province. Future agreements with college and university partners include developing joint course delivery using video-conferencing technologies to strengthen specialty options for research and coursework for students in the sciences (e.g., Northern College).

UOIT continues to expand its significant collaboration with Trent University at the graduate and undergraduate levels, building upon successes in the Master's and PhD programs in Material Science. Recent collaborations with Trent allow its students to directly enter the third year of the Kinesiology program following completion of two years of study at Trent. The senior academic leadership from Trent University and UOIT meets bi-annually to discuss innovative approaches to teaching and research as well as how the two universities might work together.

UOIT also nurtures and pursues new academic partnerships and discussions include new complementary innovative programs with sister universities. One initiative includes combining design and design-thinking expertise at Ontario College of Art and Design University (OCADU) with STEM expertise at UOIT, e.g., material sciences (OCADU) with life sciences (UOIT) and digital futures/integrated media (OCADU) with communications and digital media studies (UOIT). Forms of delivery can include joint appointments, parallel programs and online curriculum. A second initiative includes expanding on the Higher Education in Transformation (HEIT) Symposium with the Technological University for Dublin Alliance. HEIT encourages discussion among academic leaders and Canadian and Irish government officials on such key issues as: higher education programs to meet 21st -century demands; keeping up with rapid technological changes to ensure students receive a cutting-edge education; and building on unique, hybrid postsecondary relationships.

Given UOIT's mandate, collaborations with the local community are essential. UOIT is a founding member of the City of Oshawa's Teaching City initiative, which will result in experiential learning, applied research and innovative teaching partnerships to address current municipal issues. Lakeridge Health is UOIT's number-one placement partner — not just for health sciences students, but also for students across five faculties. UOIT's partnership with OPG and Durham College allow for a holistic approach to talent, training and research needs that benefit the company and the energy sector as a whole. These joint initiatives build capacity at UOIT and in the broader community.

8.0 Ministry/Government Commitments

- The SMA2 process has focused on implementing the first stages of the new funding model and demonstrating the ongoing commitment by all colleges and universities to student success. Future growth will only be funded through negotiated changes to an institution's funded enrolment corridor . Through the SMA2 cycle, the ministry will continue to work closely with institutions to ensure all dimensions of the funding model are implemented.

- In a memo to colleges and universities dated March 7, 2017, the ministry committed to using the SMA2 (2017-20) process as a transitional phase to commence the collaborative and joint development of performance metrics and targets, tied to funding, for SMA3 (2020-23). The ministry reiterates this commitment and reaffirms that metrics and targets included in SMA2 are not tied to funding at this time and are a beginning point for further discussions with the sector prior to their application in SMA3. Colleges and universities will have the opportunity to reset and realign metrics prior to the application of metrics in SMA3. The ministry will also engage other stakeholders as part of discussions on a broad metrics strategy.

    - The ministry commits to establishing a joint working group with each of the sectors and to begin detailed discussions in fall 2017 on metrics/targets and to seek input on the performance measurement methodology for SMA3.

- Colleges, universities and the ministry all benefit from processes that are transparent and non-duplicative. The ministry commits to work with colleges and universities to continue to streamline processes and seek opportunities to further reduce red tape (in part through increased access to other tools) , including reducing or eliminating duplicated reporting requirements.

- Through SMA2 discussions, the ministry has heard concerns about the challenges of delivering breadth in programming for Francophone and Francophile students, including the cost and funding of such delivery. Starting in fall 2017, the ministry commits to consulting institutions who have a formal mandate for bilingual and/or French-language delivery to review the delivery of French-Language programming and consider these concerns.

- In 2016, an extension of the existing tuition policy framework was announced to support a major reform in OSAP. The ministry will engage with both the college and university sectors around the next tuition policy framework, including examining the issue of tuition anomalies in certain professional programs as a result of past changes to tuition policy, and, for colleges, examining tuition levels relative to competitive college tuition frameworks in Canada.

- In recent years and during the SMA process, there has been an increased interest in the creation of a new polytechnic designation in the Ontario postsecondary education system. Starting in fall 2017, the ministry commits to undertake a review that examines whether improved benefits for students and employers are sufficient to make such a change. The ministry commits to working collaboratively with institutions across the sectors on this review.

- The ministry commits to continue to work collaboratively with universities to assess the anticipated need for additional graduate spaces related to programs that are currently under development.

- Starting in fall 2017, the ministry commits to undertake a review of the university Northern Grant working collaboratively with universities to examine whether the criteria for access and allocations of the Northern Grant represent an equitable approach.

Table 1 Undergraduate enrolment 2014/15-2019/20 (Full-time equivalents)

	SMA1			SMA2		
Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
FBIT	1,735.1	1,729.0	1,754.7	1,719.0	1,652.2	1,595.2
FEdu	288.4	183.7	320.3	329.2	310.6	329.4
FESNS	348.9	321.2	310.9	303.1	260.2	285.0
FEAS	1,479.0	1,597.2	1,744.0	1,817.8	1,863.3	1,895.5
FHSci	1,586.2	1,664.4	1,756.2	1,717.9	1,749.1	1,820.4
FSci	1,013.2	981.0	958.2	1,023.0	1,050.0	1,108.4
FSSH	1,783.9	1,624.3	1,526.7	1,521.0	1,487.9	1,440.9
Other	34.3	30.7	46.8	40.1	13.2	9.0
Total	**8,268.9**	**8,131.5**	**8,417.8**	**8,471.1**	**8,386.4**	**8,483.7**

Table 2 Graduate enrolment 2014/15-2019/20 (Full-time equivalents)

	SMA1			SMA2		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Graduate Diplomas						
FEdu	0.6	3.3	3.4	6.0	6.6	6.6
FESNS	12.7	15.1	35.7	47.9	23.6	22.4
FEAS	0.0	1.0	1.0	0.0	0.0	0.0
Masters Level						
FBIT	16.5	20.1	14.5	17.8	25.8	29.4
FEdu	47.2	70.2	51.6	54.2	49.7	45.6
FESNS	26.0	23.5	24.1	24.6	21.0	17.7
FEAS	109.3	108.0	86.4	120.2	128.9	117.1
FHSci	53.0	54.7	49.7	54.5	58.5	52.9
FSci	32.2	31.1	32.8	35.9	37.4	38.4
FSSH	24.0	28.3	37.0	37.0	26.6	26.6
Computer Science	38.0	31.5	32.8	32.8	32.9	33.2
Doctoral Level						
FESNS	14.7	14.3	12.3	14.7	12.9	15.8
FEAS	61.5	64.9	68.2	64.2	51.8	49.2
FSci	19.6	22.3	18.6	22.6	24.2	29.5
FSSH	-	3.0	9.0	14.0	19.9	23.9
Computer Science	21.2	18.5	17.4	17.6	13.5	13.7
Total	**474.5**	**509.4**	**496.5**	**564.0**	**533.3**	**522.4**

Science Totals do not include Computer Science.

Table 3 Undergraduate international enrolment 2014/15-2019/20,(%)

	SMA1			SMA2		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
FBIT	4.7	4.6	5.1	4.6	5.0	5.6
FEdu	0.3	0.0	0.4	0.3	0.3	0.3
FESNS	6.8	6.6	7.2	6.6	4.6	3.4
FEAS	16.1	15.9	14.6	13.6	12.9	13.9
FHSci	3.0	2.5	2.2	1.2	1.3	1.8
FSci	4.2	4.0	5.1	8.0	11.3	14.5
FSSH	1.5	1.5	1.6	1.7	1.6	1.6
Total	**5.6**	**5.7**	**5.9**	**5.6**	**6.0**	**6.8**

Table 4 Graduate international enrolment 2014/15-2019/20, (%)

	SMA1			SMA2		
	2014/15	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
Masters Level						
FBIT	42.4	34.8	55.2	39.3	49.6	53.5
FEdu	-	-	1.8	1.6	-	-
FESNS	7.7	17.0	16.6	28.5	31.7	21.7
FEAS	65.0	64.8	47.5	62.1	51.3	57.4
FHSci	3.8	5.5	4.0	1.8	-	-
FSci	43.5	48.2	39.6	36.4	39.3	39.4
FSSH	8.3	-	-	-	-	-
Cross Faculty (Comp. Sci)	28.9	30.8	36.6	36.6	37.5	38.8
Doctoral Level						
FESNS	12.7	7.0	8.1	27.2	37.2	40.1
FEAS	58.5	65.2	64.5	53.9	63.5	71.6
FSci	15.3	23.5	21.5	13.3	14.0	12.4
FSSH		33.3	11.1	7.1	9.8	11.9
Cross Faculty (Comp. Sci)	37.7	44.9	40.2	34.1	40.8	42.5
Total	**30.8**	**30.2**	**25.8**	**32.5**	**32.0**	**47.5**

International students did not enroll in graduate diploma programs during SMA1 and we are not currently projecting any through SMA2.

Table 5 Tenured/Tenure Track (upper) and Teaching (lower) Faculty 2014/15-2019/20

	SMA1			SMA2		
Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
FBIT	38.75 16.00	38.75 16.00	39.75 18.00	39.75 21.00	39.75 22.00	41.75 22.00
FEdu	17.50 2.00	16.50 2.00	15.50 2.00	16.50 2.00	16.50 3.00	16.50 3.00
FESNS	13.50 1.00	13.50 1.00	13.50 1.00	13.50 1.00	13.50 1.00	13.50 1.00
FEAS	37.75 8.00	38.75 8.00	42.75 9.00	44.75 9.00	46.75 11.00	48.75 12.00
FHSci	30.00 18.25	30.00 19.00	31.00 19.00	33.00 19.00	34.00 20.00	35.00 20.00
FSci	31.00 16.00	30.00 15.75	30.00 16.75	31.00 16.75	32.00 16.75	33.00 17.75
FSSH	39.00 7.00	39.00 7.00	39.00 7.00	39.00 7.00	40.00 8.00	41.00 8.00
Total Tenured/Tenure Track	**207.50**	**206.50**	**211.50**	**217.50**	**222.50**	**229.50**
Total Teaching Faculty	**68.25**	**68.75**	**72.75**	**75.75**	**81.75**	**83.75**

Table 6 Percentage of course sections taught by sessional or contract faculty 2014/15-2019/20

	SMA1			SMA2		
Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
FBIT	27.7%	19.3%	21.0%	32.5%	15.0%	10.8%
FEdu	67.1%	45.2%	53.4%	63.0%	50.0%	47.0%
FESNS	47.4%	30.2%	34.1%	27.0%	25.0%	25.0%
FEAS	5.4%	7.5%	6.8%	21.0%	10.0%	8.0%
FHSci	25.5%	17.1%	27.3%	30.0%	30.0%	30.0%
FSci	20.2%	16.6%	15.0%	15.0%	15.0%	15.0%
FSSH	41.2%	22.8%	29.0%	26.1%	29.0%	31.8%
University-wide	**32%**	**22%**	**27%**			

Figure 1 Total student course enrolments in a Faculty's academic programs ("Faculty Teaching") and students programs delivered by another Faculty ("Service Teaching")

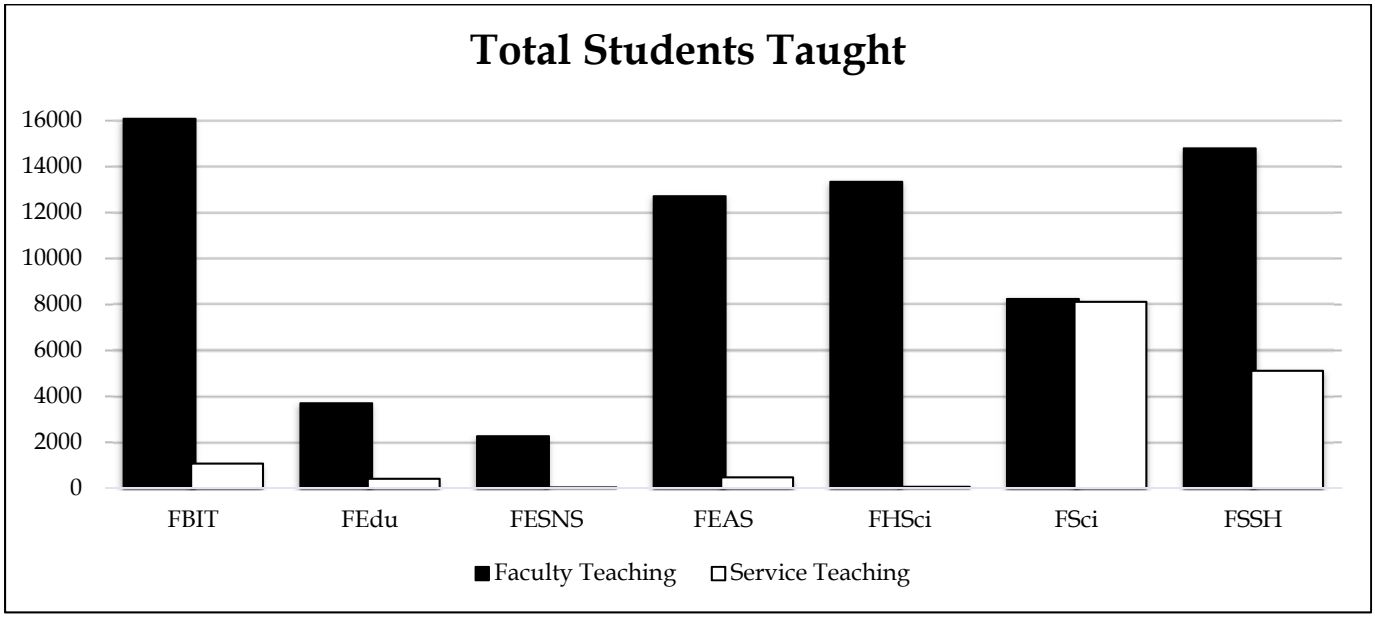

Table 7 Percentage of Students Graduating with Experiential Learning Experience

	SMA1			SMA2		
Faculty	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**2018/19**	**2019/20**
FBIT	94.8	95.8	98.6	93.5	100.0	100.0
FEdu	98.4	96.4	58.3	89.0	90.0	95.0
FESNS	89.7	88.1	81.6	86.8	*	0.0
FEAS	98.8	100.0	100.0	100.0	100.0	100.0
FHSci	71.5	70.0	78.2	70.9	72.0	72.5
FSci	24.5	21.9	27.9	31.0	32.0	33.0
FSSH	31.8	26.2	20.5	35.3	38.0	40.0
Total	**70.8**	**68.1**	**65.4**	**71.3**	**80.5**	**90.0**

Strategic Mandate Agreemement Metrics and Targets (2017-18 to 2019-20)

Legend:

System-wide Metric (All Institutions)
Institution Specific Metric (UOIT)

	Actual Values				Target
Metric Name	Latest Available Data (Year)	Metric Value at (Year - 2)	Metric Value at (Year - 1)	Metric Value at (Year)	Target Metric Value for 2019-20
Student Experience					
Year 1 to Year 2 retention rates	2015-16	79.4	80.3	79.9	79-81
Proportion of fourth-year students with two High-Impact Practices (HIPs)	2014	54.0	54.0	54.0	52-56
Average number of HIP per senior-year student	2014	1.793	1.793	1.793	1.8
Proportion of operating expenditures on student services	2015-16	5.3	6.1	6.6	5-7
Percentage of undergraduate students accessing peer support porgrams	2016	n/a	n/a	28.0	30-35
Innovation in Teaching and Learning Excellence					
Graduation rate	2015-16 (2009 cohort)	59.6	64.3	65.0	65-69
Proportion of programs with explicit curriculum maps and articulation of learning outcomes	2016-17	100.0	100.0	100.0	100.0
Composite score on NSSE question related to students' perceived gains in higher order learning outcomes	2014	28	28	28	27-30
Percentage of graduating students involved in a work integrated learning activity	2016	70.7	68.1	54.4	90.0
Access and Equity					
Number of first generation students enrolled at institution	2016	4886	5098	5219	5219
Proportion of first generation students enrolled at institution	2016	58.3	56.4	56.8	56.8
Number of students with disabilities enrolled at institution	2015	486	465	581	581
Proportion of students with disabilities enrolled at institution	2015	5.9	5.5	6.4	6.4
Number of Indigenous students enrolled at institution	2016	80	83	83	83
Proportion of Indigenous students enrolled at institution	2016	1	0.9	0.9	0.9
Number of French-language students enrolled at institution					n/a
Proportion of French-language students enrolled at institution					n/a
Share of OSAP recipients at an institution relative to its total number of eligible students	2015		70.8	72.3	72.3
Number of transfer applicants and registrations	2015-16	1348/369	577/94	1383/382	1400/400
Number of college transfer registrants, as captured by UOIT	2015	369	592	684	650
Research Excellence and Impact					
Number of papers per faculty member (cummulative over 5 years)	2011-2015			1536	1800-2000
Number of citations per paper (cummulative over 5 years)	2011-2015			10590	12000-13500
CIHR funding - share to total Ontario universities	3 yr average 2013/14 to 2015/16			0.07	0.1
SSHRC funding - share to total Ontario universities	3 yr average 2013/14 to 2015/16			0.91	0.9
Total Tri-Council funding - share to total Ontario universities	3 yr average 2013/14 to 2015/16			0.61	0.6
NSERC funding - share to total Ontario universities	3 yr average 2013/14 to 2015/16			1.13	1.1
Total sponsored Research	2015	$ 9,677,000	$ 9,820,000	$ 10,562,000	$9.5M-$11.5M
Innovation, Economic Development and Community Impact					
Of those graduates who are working full-time, what proportion are working in related jobs (2 years)	2016-17	89	92	89	0.89-0.91
Graduate employment rates	2016-17	2 yr: 96.2; 6mo: 84.5	2 yr: 92.9; 6mo: 85.6	2 yr: 94.3; 6mo: 84.6	2yr: 94-96; 6mo:85
Percentage of undergraduate e-learning courses (hybrid/online)	2016	n/a	19.4	20.5	20-22
Financial Sustainability					
Primary reserve ratio	2015/16	4 days	14 days	27 days	
Net operating revenue ratio	2015/16	15.60%	11.10%	10.97%	
Interest burden ratio	2015/16	10.80%	10.00%	9.35%	
Viability ratio	2015/16	-0.009	0.03	0.06	
Net income / (loss) ratio	2015/16	6.00%	4.50%	1.71%	

Metric Name	Metric Definition
Student Experience	
Year 1 to Year 2 retention rates	Year 1 to Year 2 Retention rates are based on first-time, full-time undergraduate students who commenced studies in the previous year and have continued to study at the same institution in the reporting year.
Proportion of fourth-year students with two High-Impact Practices (HIPs)	Based on High-Impact Practices (HIPs) in National Survey of Student Engagement (NSSE): - Learning community or some other formal program where groups of students take two or more lasses together - Courses that included a community-based project
Average number of HIP per senior-year student	
Proportion of operating expenditures on student services	Student services expenditure metric is defined per Table 6 COFO Financial Report of Ontario Universities.
Percentage of undergraduate students accessing peer support porgrams	Number of unique students accessing peer supports divided by the total fall undergraduate student population
Innovation in Teaching and Learning Excellence	
Graduation rate	Graduation rate (based on Consortium for Student Retention Data Exchange [CSRDE])(6 year rate)
Proportion of programs with explicit curriculum maps and articulation of learning outcomes	Definition under discussion through SMA2, due to absence of standardized approach to this metric
Composite score on NSSE question related to students' perceived gains in higher order learning outcomes	Q17: "How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?" Areas include clear and effective writing, speaking, critical thinking, numerical and statistical analysis.
Percentage of graduating students involved in a work integrated learning activity	Number of undergraduate hybrid, virtual and full on-line courses divided by the total undergraduate course offereings
Access and Equity	
Number of first generation students enrolled at institution	Total first generation students enrolled at institution as a share of total full-time headcount enrollment. ***First generation is a student whose parent(s)/guardian(s) has/have not attended a postsecondary institution.
Proportion of first generation students enrolled at institution	
Number of students with disabilities enrolled at institution	Total number of full-time students with disabilities registered with the Office for Students with Disabilities as a share of total full-time enrollment at institution.
Proportion of students with disabilities enrolled at institution	
Number of Indigenous students enrolled at institution	Total full-time Indigenous students enrolled at institution as a share of total full-time enrolment at institution. ***Indigenous is a collective name for the original people of North America and their descendants.
Proportion of Indigenous students enrolled at institution	
Number of French-language students enrolled at institution	Total number of full-time French-language students enrolled at institution as a share of full-time enrollment at institution.
Proportion of French-language students enrolled at institution	
Share of OSAP recipients at an institution relative to its total number of eligible students	Share of full-time OSAP recipients at an institution relative to its total number of full-time grant eligible enrollment. ***The number of OSAP awards includes any undergradaute and graduate student who has applied for full-time OSAP assistance and qualify
Number of transfer applicants and registrations	As captured by the Ontario University Applications Centre
Number of college transfer registrants, as captured by UOIT	Total number of new college transfers (TC) over 3 term entry points
Research Excellence and Impact	
Number of papers per faculty member	Total numbers of papers (5 years)/Full-time faculty
Number of citations per paper	Total number of citations (5 years)/Total full-time faculty
CIHR funding - share to total Ontario universities	CIHR funding per university / Total CIHR funding Ontario universities (TBC - 5 years; based on CUDO data)
SSHRC funding - share to total Ontario universities	SSRCH funding per university/Total SSHRC funding Ontario Universities (TBC - 5 years, based on CUDO data)
Total Tri-Council funding - share to total Ontario universities	As reported in CUDO, total for 5 years - TBC with the sector; Tri-council funding per university/Total Tri-Council funding Ontario universities
NSERC funding - share to total Ontario universities	NSERC funding per university/Total NSERC funding Ontario universities - TBC (5 years; CUDO database)
Total sponsored Research	Amount of total revenue from all sources reported in COFO Table 2 under Sponsored Research – Restricted Expendable Funds.
Innovation, Economic Development and Community Impact	
Of those graduates who are working full-time, what proportion are working in related jobs (2 years)	Proportion of university graduates of bachelors or first professional degree programs in the labour force employed full-time in a job related to skills developed in the university program, two years after graduation.
Graduate employment rates	Percentage of university graduates of bachelors or first professional degree programs in the labour force employed six months and two years after graduation
Percentage of undergraduate e-learning courses (hybrid/online)	Number of undergraduate hybrid, virtual and full on-line courses divided by the total undergraduate course offereings
Financial Sustainability	
Primary reserve ratio	The Primary Reserve Ratio is a measure of financial viability that compares expendable net assets to total expenses by determining how many days an institution could function using only its financial resources that can be expended without restrictions.
Net operating revenue ratio	The Net Operating Revenues Ratio is a financial performance metric that provides an indication of the extent to which institutions are generating positive cash flows in the long run to be financially sustainable.
Interest burden ratio	The Interest Burden Ratio is a measure of debt affordability that compares the level of current debt service with the institution's total expenses. It examines the percentage of total expenses used to cover an institution's cost of servicing its debt.
Viability ratio	The Viability Ratio is a basic determinant of an institution's financial health, as it provides an indication of the funds on hand that can be used should an institution need to settle its long-term obligations.
Net income / (loss) ratio	The Net Income/Loss Ratio is a financial performance metric that measures the percentage of an institution's revenues that actually contribute to its net assets. It provides insight into how well an institution is able to manage its expenses.