



THE ECONOMIC AND SOCIAL IMPACT OF YORK UNIVERSITY

April 8, 2020

Higher Education Strategy Associates
Completed by Jonathan Williams, Alex Usher, Marcos Ramos, Sarah Owocki, Michael Savage and Alexandra
Logue

Table of Contents

Executive Summary	iii
A Ladder to Opportunity	iii
An Engine for Social Progress	iii
A Driver of Economic Growth	iv
The Future Impact of York	v
1. Introduction	1
2. A Ladder to Opportunity	3
2.1 Measuring the Accessibility of York University	3
2.2 The Transformative Impacts of Access	5
2.2.1 Evidence from the Literature	5
2.2.2 Survey Evidence	7
2.3 Factors that Make York Accessible	10
2.3.1 Location and Cost	11
2.3.2 Diversity	12
2.3.3 Social Mandate	14
2.4 Summary	17
3. An Engine for Social Progress	18
3.1 Civically Engaged Graduates	18
3.1.1 Working Professionally in Service to the Public	18
3.1.2 Performing Community Service	21
3.1.3 Attitudes Towards Diversity, Cross-Cultural Communication Skills and Feelings of Belonging	23
3.1.4 Creative Expression	26
3.2 Research and Engagement to Build Resilient Communities	27
3.2.1 Knowledge Mobilisation at York	28
3.2.2 Empowering those with Vulnerable Housing, Mental Health Challenges and/or Addictions	28
3.2.3 Engagement with the Jane and Finch Community	30
3.2.4 Other Activities that Benefit Marginalised Youth	32
3.2.5 Supporting Refugees and Other Migrants	33
3.2.6 Advancing the Rights and Well-Being of Persons with Physical, Mental and/or Intellectual Disabilities	35
3.3 Other Research and Engagement Activities to Build a Better World	36
3.3.1 Strengthening Environmental Stewardship and Resilience	36
3.3.2 Preserving and Advancing Cultural Diversity	38
3.4 Summary	38
4. A Driver of Economic Growth	39
4.1 Areas of Measurable Impact: Access, Immigration and International Students	39
4.2 A Large Spending Footprint	42
4.3 Dynamic Alumni	43
4.4 Summary	45
5. The Future of Impact at York	46
5.1 Expansion in Health and Engineering-Related Fields	46

5.1.1 Promoting Health and Safety	47
5.1.2 Leading Research on Vision	47
5.1.3 A Leader in Space Research.....	48
5.2 Support for Entrepreneurship and Business Incubation	49
5.3 Work-Integrated Learning.....	52
5.4 Summary	53
6. Conclusion	55
Methodological Appendix.....	56
Surveys	56
Alumni Survey	56
Student Surveys	57
Interviews	58
Data and Documentation	59
References	60

Figures

Figure 1 Alumni agreement regarding ways that their careers serve society	19
Figure 2 Share of York alumni who report being members or participants in civic organisations, compared to Toronto CMA population.....	22
Figure 3 Alumni agreement as to whether they improved their inter-cultural communication skills or understanding because of their studies at York.....	24
Figure 4 Percentage share of alumni who actively participated in creative activities in the past 12 months, compared to the Toronto CMA.....	27
Figure 5 Reported participation of alumni in innovation activities.....	44
Figure 6 Start-ups receiving meaningful support from York University 2016/17 to 2023/24	51

Tables

Table 1 Access students among all students and first-generation students.....	4
Table 2 Former access students among total alumni and first-generation alumni.....	5
Table 3 Returns to access among alumni.....	8
Table 4 Share of respondents to the alumni survey who “strongly agree” that they have attributes “because [they] attended York University”, by access status.....	9
Table 5 Rates of agreement and strong agreement among alumni that they feel a stronger sense of belonging to their community/to Canada because they attended York University, by Immigrant and Visible Minority Status.....	26
Table 6 Measurable economic effects of York University, 2018.....	40
Table 7 Upper bound estimate of income tax revenues attributable directly to York's access and immigration effects, 2018	40
Table 8 Upper bound estimate of sales tax revenues attributable directly to York access, immigration effects and international student recruitment, 2018	41
Table 9 Upper bound estimate of total tax revenues attributable directly to York access, immigration effects and international student recruitment, 2018	41
Table 10 YSpace ventures incubated to date	52

Executive Summary

York University serves many of the most diverse and fastest growing communities in Canada, both in Toronto and other parts of the Greater Toronto Area (GTA) such as Markham, Richmond Hill, Vaughan and Brampton. As of 2019, the university boasted over 55,000 undergraduate and graduate students, including 8,500 international students from 178 countries as well as domestic students from across Canada. By enrolment, York is the second-largest university in Ontario, and the third-largest in Canada. This report specifically examines how York acts as: a ladder to opportunity; an engine for social progress; and a driver of economic growth.

A Ladder to Opportunity

To measure access, we asked students and alumni to indicate in surveys what they would have mostly likely done if they had not been able to attend York University, i.e. if they would have attended another university, a college, or not attended post-secondary at all. Our results indicate that 8% of York University students believe that they would not attend university if they could not attend York. Most (59%) of these access students otherwise would not attend post-secondary education at all. An even larger share of alumni aged 25-64 (8.5%) report having been access students, leading us to estimate that 21,226 people aged 25-64 have university degrees and would not otherwise, because of York University providing them the opportunity.

Access students enjoy remarkable benefits. There is strong evidence in the literature, for instance, that first-generation students do as well professionally and academically as non-first-generation peers, while students at the margin of admission to university typically have much better life outcomes than peers who barely miss out on admission – showing the strong benefits of access. Among York access alumni aged 25-64, we estimate that the aggregate marginal benefits of accessibility were equal to over \$1.1 billion in additional income and 1,338 additional jobs in 2018. Accounting for indirect and induced effects, York's effects in expanding access for alumni created approximately \$2,185,068,472 in economic activity and 1,621 jobs.

We also observe that access alumni agree significantly more strongly than other alumni that because they attended York University they are different across various measures reflecting social engagement, such as being a more civically active person, being a more politically engaged person, serving others being a more important motivating factor in their career, etc.

Perhaps most importantly, York students and alumni report that access has greatly improved their lives. Fully 56.9% of post-secondary access alumni and 47.1% of university access alumni indicated they were better off than they would have been if they had not studied at York University, compared to 32.5% of non-access alumni.

An Engine for Social Progress

Universities have a responsibility to the communities in which they are situated, not just the students who pass through their gates. York achieves this partly by producing civically-engaged graduates and partly by engaging in research and other service activities that are broadly in the public interest and designed to foster resilience in local communities.

Almost two-thirds of alumni agree or strongly agree that their career serves society by advancing equality of opportunity, promoting social and cultural inclusion, and by improving health, well-being and safety. Underscoring York's causal effects on increased civic mindedness, 34.6% of alumni agreed with a statement that "because [they] attended York University, serving others has been a more important motivating factor in [their] career than it would have been otherwise."

In terms of civic engagement, 56% of York alumni reported that they had "pursued volunteer activities on behalf of a group or an organisation such as a school, religious organisation, sports or community association" in the past 12 months. Controlling for age, gender and immigration status, York alumni this rate of volunteering is 13.5 percentage points higher than for other university graduates in the GTA. York alumni were also significantly more likely than other GTA university graduates to have participated in every type of civic organisation for which we gathered comparable data – including sports or recreational organisations, cultural, educational or hobby organisations, school groups and political parties or groups. Finally, 12.6% of alumni reported that they had "started a charity or non-profit organisation at any point in [their] life, either alone or working with others." Most (62%) of the charities started are currently active.

A major focus of much York research activity is on people considered the most vulnerable and marginalised in Canadian society, such as people in vulnerable housing and those suffering from mental health challenges and addictions. The Canadian Observatory on Homelessness (COH) is based at York University. Other areas of focus for York research and engagement have included support for the Jane and Finch community, vulnerable and at-risk youth, refugees, and persons with physical, mental and/or intellectual disabilities. For instance, York University created the Community Engagement Centre (CEC) in partnership with TD, hosts the Jean Augustine Chair in Education, Community and Diaspora, is home to the Centre for Refugee Studies, and has various supportive links to the ARCH Disability Law Centre.

A Driver of Economic Growth

York University is an important economic actor for the GTA, Ontario and Canada. The economy is more dynamic because of the skills of York graduates and other activities of the university.

Examining York's economic impact, there are forms of economic activity that York can claim more causality over, based on some reasonable measure of counterfactuals. The most important of these areas is expanding post-secondary access. Many York students also immigrate to Canada or otherwise move to Canada after graduation: we estimate that approximately 7,277 York alumni aged 25-64 are living in Canada because they attended York university. A third important area of economic impact is in attracting international students, which can be thought of as an export industry. There were 8,823 visa students attending York University in 2018-19. Adding these effects together, York could be directly attributed \$2.34 billion in spending and 10,569 jobs in 2018. Including indirect and induced effects, York's impacts in these areas increase to over \$4 billion and 13,480 jobs.

We estimate that provincial and federal government revenues directly attributable to York University in 2018 equalled as much as \$913 million. Estimates accounting for indirect and induced effects would be even higher. By contrast, the university received just under \$425 million in government grants and contracts that year, while York students received almost \$157 million in governments

grants through the Canada Student Loan Programme (CSLP) and the Ontario Student Assistance Programme (OSAP). Even taking our estimate of impact as an upper bound, our analysis suggests strongly that York's direct effects on government revenues exceed the institution's annual subsidies from government.

Using more traditional methods of "impact" analysis, we can calculate the spending footprint of York University, its students and its alumni. The causal basis for this analysis is very weak as no counterfactuals are considered, but it provides a sense of economic activity at least affected by the institution. The total direct spending footprint of York university and its students and alumni exceeded \$23 billion in 2018, with this expanding to over \$43.9 billion once indirect and induced spending are included.

There are other indications of economic impact, in particular driven by alumni activities. In our alumni survey, 31.2% of alumni aged 25-64 indicated that they had started a business at some point in their life, with these respondents starting 1.7 businesses each on average. This translates into a remarkable 78,241 entrepreneurs among York alumni aged 25-64, 38% of whom have started their own business in the past two years. Fully 21% of these alumni entrepreneurs agreed with a statement that they became an entrepreneur because they attended York University, suggesting that York University was instrumental to 16,491 entrepreneurs launching their ventures. Additionally, 30.2% of York alumni entrepreneurs said that their ventures had been more successful because they attended York University, equal to 23,641 more successful entrepreneurs.

The Future Impact of York

Impact, by its very nature, is a lagging indicator. It reflects the long-term effects of what an institution did many years ago, typically not what it is doing today. Even the most promising ideas and activities cannot be measured until they have had some time to percolate through into society and the economy. As a result, our impact findings are largely a reflection of York as it was five, ten, or even twenty years ago. And yet it is clear to even the casual observer that York University has changed a great deal over the past decade, in ways that will likely expand its impacts over the coming years. The most obvious change, from an economic geography perspective, will be the opening of a campus in Markham over the next few years. But three other areas of institutional change are perhaps collectively more important:

- Support for entrepreneurship and incubation.
- Work-integrated learning
- Expansion of activity in the fields of health and engineering

York has, in sum, an accomplished record of impact, one which certainly has its financial impacts, but which above all, is *human* in nature. York's impact, above all need to be generated by its people: the ones it accepts from around the world and from underserved neighbourhoods in Toronto. The ones that go on to thrive in their careers, and who make enormous contributions to their communities through their work and charity. And the ones who work tirelessly with communities across Toronto and around the globe, attempting to put their knowledge and expertise at the service of peoples seeking self-improvement, resilience and justice. It is they who are York's impact, its influence and its strength.

1. Introduction

York University services many of the most diverse and fastest growing communities in Canada, both in Toronto and other parts of the Greater Toronto Area (GTA) such as Markham, Richmond Hill, Vaughan and Brampton. The population of York region, the area situated between the City of Toronto and Lake Simcoe for which York is the principal university, is expected to increase by 1.8 million from 2016 to 2041, with the workforce growing by 900,000 (York Region, 2016).

As of 2019, York boasted over 55,000 undergraduate and graduate students, including 8,500 international students from 178 countries as well as domestic students from across Canada. By enrolment, York is the second-largest university in Ontario, and the third-largest in Canada. The university employs 1,670 full-time faculty and 5,205 other staff.

Incorporated in 1959, York originally distinguished itself primarily as a liberal arts institution. Over the last 25 years, however, York has expanded well beyond this traditional strength. A \$15 million donation to the Faculty of Administrative Studies in 1995 saw the establishment of the Seymour Schulich School of Business, and since 2012 the Faculty of Health and the Lassonde School of Engineering have seen the fastest growth in full-time faculty numbers. Nevertheless, the university's Liberal Arts roots ground its commitment to community service and public impact.

Higher education is usually thought of as having three missions: teaching, research and service to the community. York, like any other institution, participates in all three of these activities. This report, which aims to describe York's impact on its community, draws on all three activities to describe how York impacts the communities that surround it. But activities are not impacts, and so this report specifically examines how York acts as:

- A Ladder to Opportunity
- An Engine for Social Progress
- A Driver of Economic Growth

Above all, York's impact resides in the skills and competencies embedded in its graduates. It is about the way that the university as a whole reaches into local communities – many of them economically challenged – and offers people a route into professional success. And because of the population York serves – mainly racialized students, with a high proportion of immigrants and first-generation students among them – the university plays an enormous role not just in helping young people get a first step on the ladder towards individual career success, but more broadly in terms of ensuring that New Canadians have a solid pathway to integration and prosperity in Ontario. Through its bilingual programming at the Glendon campus, it also provides an on-ramp to a more high-paying set of jobs that require a mastery of the country's two official languages.

Because institutional economic impact tends to lag institutional activity by several years, York's current measurable economic impacts are at least as reflective of what it was doing a decade ago as of what it is doing today. Yet over the past ten years, York has changed enormously; in particular, it has gained an Engineering faculty and taken significant steps to encourage a more entrepreneurial campus. As we look to the future, though, the profile of York's impact is likely to change substantially: we will almost see increased formation of successful new firms, deeper collaboration with the private sector, and more tangible value from intellectual property.

Sixty years ago, although it had begun at Falconer Hall and then at Glendon, a defining image of York University was a photograph of a desk in the emptiness of the Keele campus before ground had broken on the first structures. York was a Toronto institution but at the same time it seemed isolated, situated at the edge of the City, connected only by roads. Today, aided by a subway extension which runs through the main campus, York University is less an institution at the periphery of a large city than it is an axial institution which is knitting together two of the fastest-growing metro areas in Canada: the city of Toronto and York Region. And just as over the past decade it has undergone a physical renewal, both in terms of its own infrastructure and in terms of its physical relationship with the surrounding city, it has also undergone a renewal of purpose and strategy. An Engineering Faculty provides the University with new avenues of inquiry and discovery, as well as new avenues for interaction with the private sector. A new focus on entrepreneurship and incubators will also usher in new ways of linking the University to the economy and accelerating the circulation of ideas between the two.

In short, in much the same way that York offers a springboard from which graduates and communities can launch themselves into new futures, York itself is building on a long history of basic research to jump into a new world of more applied research. Like its students, York travels down the same twin paths of invention and re-invention.

HOW THIS REPORT MEASURES IMPACT

A word is in order here about how we track “impact”, which is a very difficult thing to tease out in the absence of solid counterfactuals. Some institutions – and some impact statements – will try to claim every output as an impact. At one level this is true, but at another level it can be seen as a bit misleading. Certainly, various governments get a useful return on the over \$400 million they put into the institution, but if they chose to give that money to another institution – such as the Humber River Hospital – there would no doubt also be returns which would if not exactly match those from York, then at least resemble them in many ways. To put it pejoratively, there is a tendency in impact assessment to treat costs as benefits.

So, in each of the three chapters that follow (Chapter 2 – *Ladder to Opportunity*, Chapter 3 – *Builder of Communities* and Chapter 4 – *Driver of Economic Growth*), we try to describe York’s impact in two ways. First, in terms of *outputs*: what is it York achieves in each of these areas? A measure of an output would be the number of graduates. And second, in terms of *additional impacts*: what is it that York does which results in outcomes which are *measurably different/additional* to the mere through-put of money? This is difficult to do effectively because counterfactuals necessary to “prove” what would have occurred had York not existed are difficult to tease out. We provide a measure of the share of students who accessed university because of York and would not have otherwise by asking these students what they think they would have most likely done if they had been unable to attend York – asking the students themselves to assess the counterfactual. From the reader’s perspective it is likely best to think of these two types of impacts as “what York does” and “what makes York special”.

2. A Ladder to Opportunity

Since its inception, the expansion of educational opportunity has been an important part of York university's mission, and it manages a number of activities to achieve that end. New evidence shows the success of those efforts. We estimate that 8% of York undergraduates would not have attended university had York not been an option; of these, slightly more than half would not have attended any form of post-secondary education. This has enormous knock-on effects in terms of higher income, better wellbeing and greater civic engagement.

Access has always been a fundamental part of York's mission. The university was founded to meet the City of Toronto's growing educational needs in the 1950s. York acquired a more geographically focused mission to serve as the educational centre for the area north of the 401 with the when the Keele campus opened in the 1960s. This mission is universally understood on campus: when asked who would most be affected if York simply disappeared, the overwhelming response among campus informants was "the families in the surrounding community."

This access mission is not just a core part of York's identity – it is also a major part of its community impact. The core population York serves has a very high proportion of New Canadians – immigrants or the children of immigrants. In acting as an access institution to these particular students, York is not simply offering these students an education and a step on the ladder to career success; it is also performing a vital service as an engine of inclusion in Canadian society.

2.1 Measuring the Accessibility of York University

Since the early 2000s, provincial policy on access has focused on what are called "first-generation" (FG) students. Though the term "first-generation" in this context has echoes of its use in the field of immigration, in higher education it refers to students who are the first in their family to attend post-secondary education. They are a focus of policy because their parents may have fewer resources to help their children make informed decisions about post-secondary education (PSE) and for financing PSE. First-generation and low-income students are also more likely than non-FG students to be immigrants or from racialized groups, and to be mature students – a critical group of historic focus for York University (Arora 2019).

In the 2017–2018 academic year, represented 26.3 % of York University students were FG, up from 24.3% in 2013–2014 (data provided by York University). Meanwhile, 2017 NSSE data indicate that 48% of first-year and fourth-year undergraduate students at York were FG, compared to only 38% and 42% respectively across all Ontario universities.¹ In terms of alumni, our survey data indicate that 47.5% were FG students when they attended York, controlling for race and gender, which is a very high figure. FG alumni are disproportionately older: in our survey alumni aged 55-64 were 29% more likely to identify as first-generation than the average across all alumni aged 25-64.

Yet, while first-generation status can be a marker for access, it is not in and of itself adequate for determining the impact of York. Many first-generation students may have attended post-secondary education at another institution if they had been unable to attend York.

¹ The definition of FG for the NSSE is that neither parents hold a bachelor's degree. This differs somewhat from our other measures of FG status, but we provide the NSSE data here simply to provide a point of comparison.

To track this question, in our student and alumni surveys, we asked respondents to indicate what they would have mostly likely done if they had not been able to attend York University, i.e. if they would have attended another university, a college, or not attended post-secondary at all. Those who would have most likely attended a college or not attended post-secondary at all, we qualify as access students – i.e. students who are accessing post-secondary education or university specifically because of York University. We can further divide these access students into: post-secondary access students who would not have attended post-secondary education at all if not for York, and university access students who would have attended college instead of university if not for York.

Table 1 presents the results of this assessment for current students at York, projecting out our survey results across the entire institutional student population based on 2019-20 enrolments. Our results indicate that 8% of York University students believe that they would not attend university if they could not attend York, with this rate rising to 11.4% among first-generation students. Furthermore, 59% of these access students (both among all students and first-generation students) otherwise would not attend post-secondary education at all.

Table 1 Access students among all students and first-generation students

Access Group	Total Students		First-Generation Students	
	%	Projected count	%	Projected count
Post-secondary access	4.7	2,626	6.7	980
University access	3.3	1,841	4.7	682
Total Access	8.0	4,467	11.4	1,662

We observe various other trends in access status based on student demographic characteristics:

- The share of access students is higher by eight percentage points for those born in 1996 or earlier compared to those born after 1996.
- The share of access students is 0.8 percentage points higher among male students than female students, with the difference driven by a one percentage point higher share of students who would have otherwise gone to college.²
- There is no significant difference in the share of access students among immigrant and non-immigrant students.³
- We do not observe significant differences in the shares of access students by ethnicity, including between white identifying and non-white identifying students.

We also have similar data on alumni ages 25-64, as shown in Table 2. These data show that an even larger share of alumni would report having been access students than is true among current students. This means there are 21,227 people who have university degrees and would not otherwise, because of York University. A greater share of alumni (61%) than current students indicate that they would have attended college instead of university. The share of access alumni is higher still among first-

² However, the share of FG students who are access students is 1.8 percentage points higher among women than men, with the gap again entirely driven by students who would have otherwise gone to college.

³ Among FG students the rate of access status is two percentage points higher among immigrants. The share of access students appears to be higher also among immigrants who arrived in Canada in the past five years, but the sample size is too small to have confidence in this result.

generation alumni, exceeding 11%. This means that first-generation students have historically represented over 62% of access students.

Table 2 Former access students among total alumni and first-generation alumni

Access Group	Total Alumni		First-Generation Alumni	
	%	Projected count	%	Projected count
Post-secondary access	3.32	8,324	4.50	5,356
University access	5.15	12,903	6.59	7,841
Total access	8.47	21,226	11.08	13,197

Again, we can draw further conclusions regarding the relationship between demographic characteristics and access status among alumni from our survey data:

- Men are more likely than women to report that they would not have attended post-secondary education if not for York University by 1.4 percentage points, which explains a 1.2 percentage point gap in the total access rate by gender.
- The share of those reporting that York provided access is highest at 9.3% and 9.6% for those aged 25-34 and 55-64, though this is driven disproportionately by university access for the younger cohort while the share of those would not otherwise have gone to post-secondary education at all rises with age.
- The share of access alumni is 28% (2.2 percentage points) higher among those of visible minority than those of non-visible minority background, which is a statistically significant difference. The difference in the share of university access students is equal to 38% (1.7 percentage points) while that of the share of post-secondary access students is not statistically significant.
- There is no statistically significant difference in access status by immigrant status.

York University has an impressive record for expanding access to post-secondary education. The next section will explain how this makes a difference in the lives of students and alumni.

2.2 The Transformative Impacts of Access

Being able to attend university is transformative. The literature establishes that the benefits are considerable, while students and alumni consistently report that access has improved their lives. This section will review evidence on how access benefits York University students and alumni. In Section 4 on economic impact, we will further discuss the aggregate effects of access across the economy.

2.2.1 Evidence from the Literature

The benefits of post-secondary education are well-established. The most obvious are economic: post-secondary graduates are more likely to be employed, and they earn more than those without a degree (Frénette 2019; Berger et al., 2009). In the Toronto Census Metropolitan Area (CMA) in 2016, university graduate earnings were on average 92% higher than those of high school graduates. Canadians without a high school diploma have been at various points two and a half times more

likely to be unemployed than Canadians with a bachelor's degree (the ratio has been even higher for Indigenous peoples, at three and a half times) (Berger et al 2009). Students also see benefits to attending university over college. University earnings were on average 57% higher than college graduates' earnings in the Toronto CMA in 2016.

The benefits of completing post-secondary education are likely to be even greater for FG students. Chatoor et al. (2019) found that after leaving PSE, FG students do as well in the labour market as their non-FG peers in terms of income, benefits, and job status. Being FG and being from a lower income family are highly correlated. Research by Frénette (2019b) demonstrates that, for youth from all parental income quintiles, median earnings increase with more education, but that this benefit is greater for students from low-income families. Frénette finds that youth who held a bachelor's degree earned on average \$52,238 five years after graduation, compared with an average \$19,744 earned by those with no PSE. The relative premium of 165% is significantly larger than the relative premium for youth from the top income quintile, among whom those with a university bachelor's degree earned on average \$62,420 compared with \$33,489 for those without a degree, representing a relative premium of 86%. "In other words," explains Frénette, "a university education is more strongly associated with higher earnings for youth from lower-income backgrounds in absolute and (especially) relative terms" (p. 11).

Many FG students do not only finish post-secondary education with bachelor's degrees. Attaining a post-graduate degree or certification has significant benefits, especially for first-generation and low-income students. A university graduate with a post-bachelor's degree earns, on average, \$29,000 per year more than a high school graduate, and that gap widens for individuals whose parents were from the lowest-income quintile (Berger et al. 2009).

Social and academic challenges can leave first-generation and other disadvantaged students with worse academic records prior to PSE, which means they can be disadvantaged by a solely grades-based approach to admissions. Still, the concern with admitting students with lower grades is that they may not be successful. The literature indicates however that FG students' academic performance is as good as that of non-first-generation students once they enter PSE, if not better. The Higher Education Quality Council of Ontario (Chatoor et al. 2019) has found in fact that FG students are *more* likely to complete a programme after entering PSE than their non-FG peers.⁴ Similarly, in 2010 the Canadian Education Project found no significant differences between rates at which first-generation and non-FG students left either college or university in the first two years of study (though it did not investigate completion rates) (Finnie et al. 2010). Earlier literature from 2007 and 2008 found that first-generation students earn higher average grades than their non-FG peers (Canada Millennium Scholarship Foundation 2008; Lehmann 2007). There is also strong evidence from the United States that attending post-secondary delivers considerable benefits for students at the margins of eligibility for admission, as does maintaining academic status for students at the margin of being suspended (see for instance Zimmerman 2014).

The benefits of post-secondary education extend beyond economic gains. Nonpecuniary benefits to PSE include employment in jobs with a greater sense of accomplishment, independence, and opportunities for creativity and sociability compared to those without PSE. PSE students and graduates have better health outcomes and longer life expectancy; marry more educated spouses;

⁴ Earlier research found that first-generation students were more likely to drop out of PSE than non-FG students (Canada Millennium Scholarship Foundation 2008; Lehmann 2007). Given their higher grades, this pattern appeared to have non-strictly-academic causes.

have lower rates of teen pregnancy, divorce, and unemployment; and have better mental health (Frénette 2019a; Oreopoulos and Petronijevic 2013). Completing PSE is also strongly correlated with increased civic engagement, such as volunteering, charitable donations, membership in an organization, political activity and voting, and attending public meetings (Carney and Cox 2016).

Some learners also access post-secondary education as seniors, and for them the nonpecuniary benefits are especially pronounced. Learning builds neural connections that improve cognitive ability and memory in seniors, aiding problem-solving skills. Additionally, learning is a fundamentally social endeavour, helping seniors overcome isolation and build new social connections. This social element is a main reason that seniors attend classes and it has important health benefits. Dozens of studies have demonstrated that there is a clear relationship between increased social engagement and improved health and rates of survival for seniors (Bath and Deeg 2005).

Finally, PSE has a well-documented multigenerational impact. Parents' levels of formal education are linked with good prenatal care, parental involvement in a child's schools and helping with their schoolwork, access to computer resources, and a higher likelihood of reading to a child (Carney and Cox 2016). More direct involvement in a child's education continues throughout their lifetime, including in turn impacting on their access to PSE as previously discussed.

2.2.2 Survey Evidence

Having reviewed evidence from the literature we can connect it to what we observe at York. Our survey evidence reinforces the impression of access benefitting students.

Students believe they will, or have already, benefitted from attending York, especially first-generation students and access students. Over two-thirds (68%) of students in the general sample indicated that looking ahead to their lives more than five years after graduation, they think on balance that they will be “better off” or “much better off” having studied at York University, compared to the life they imagine they would be living otherwise. Among access students, the share saying they were much better off was almost double that of all students – this was entirely driven by students who otherwise would not attend post-secondary education at all, as opposed to students who otherwise would be attending college. FG students are even more positive about their future, especially access students; 78% of whom indicate they would be better off or much better off, again with post-secondary access students the most positive. These results provide a clear indication of the extent to which access students value studying at York and believe it will benefit them.

One access student indicated the following reason for studying at York, which provides a strong sense of the meaning of their education for them: *I'm a foster parent who dropped out of high school. Going back has been my goal, I am working on it now and also to provide a great example for the children I watch.*

In the short-term, however, students are more sanguine. Asked whether they were better off this year attending York University than they would be otherwise, in the general survey 51% of access students indicated that they were better off or much better off, as did 54% of first-generation access students. In the general survey there was no significant difference between access and non-access students, though in the FG survey the share saying they were better-off was higher by 10 percentage points among those who would otherwise be attending college. These results are consistent with a share of students feeling that their studies may require short-term sacrifices for long-term benefits.

Comparing alumni in our two access categories with alumni who indicate that they would have attended university even if they could not have attended York, the results are somewhat consistent with what we observe among students, but also distinct.

Perhaps the most important question in our alumni survey is the following:

Imagine what your life would most likely be like if you had not studied at York University. You might have studied at a different institution, had a different career to date, lived in different places, etc. Do you think that on balance you are better or worse off having studied at York?

On this crucial question, 56.9% of post-secondary access alumni and 47.1% of university access alumni indicated they were better off, compared to just 32.5% of non-access alumni. Clearly access students experience significantly greater benefits from attending York.⁵

We estimate that in 2018, post-secondary access alumni from York on average earned approximately 140% or \$63,253 more than Toronto CMA high school graduates, while university access alumni earned 86% or \$47,395 more than Toronto CMA college graduates, controlling for age and gender.⁶ In the aggregate, these effects are quite considerable as shown in Table 3.

Table 3 Returns to access among alumni

		Post-secondary access	University access	Total Access
Number of alumni		8,324	12,903	21,227
Earnings	Average returns to access	\$66,782	\$51,696	\$57,612
	Aggregate returns to access	\$555,893,368	\$667,033,488	\$1,222,926,856
Jobs	Advantage in employment rate	16.1 pp	2.2 pp	4.3 pp
	Aggregate advantage in employment	1,338	283	1,621

The approximate marginal benefits in 2018 of York’s historic accessibility was equal to over \$1.1 billion in terms of additional income for York alumni and 1,338 additional jobs. Accounting for indirect and induced effects, we estimate that York’s effects in expanding access for alumni created \$2,185,068,472 in economic activity and 1,621 jobs. We will return to a further discussion of these aggregate effects in Section 4.1.

Nevertheless, access alumni do not characterise their economic circumstances in entirely positive ways, when compared to non-access alumni. Post-secondary access alumni are more likely than non-access alumni to report that their current standard of living is lower than that of the household in which they were raised (21.4% versus 12.4%), with no significant difference in the larger share reporting that they are better off (~50%). University-access alumni are also significantly more likely than non-access alumni to disagree (by 7.5 percentage points) and less likely (by 12.3 percentage

⁵ Yet, this pattern largely reflects greater polarization, as a higher share of post-secondary access alumni (21.9%) and university-access alumni (12.9%) than non-access alumni (7.2%) indicated that they were worse off. This polarization is likely to be expected. Basically, for access alumni, being able to attend York has necessarily made a bigger difference than for non-access alumni (who still would have gone to university), so we would expect to have a smaller share who indicate they are roughly the same.

⁶ Figures compare average alumni incomes (excluding incomes above \$1 million) to average incomes at the relevant comparable levels of education in the Toronto CMA, controlling for age and gender by reweighting our sample to match the composition of the Toronto CMA population by education level. Toronto CMA figures are adjusted by inflation and average income growth for those aged 25-56 for 2015 to 2017 (no 2018 income data are available).

points) to agree that “because [they] attended York, [they] “have had a better career in terms of salary, benefits and stability”.⁷ These results are somewhat puzzling, but given may reflect university access alumni being relatively young, as there is some evidence of higher disagreement on this second question among those who graduated more recently.

In other areas reflecting social engagement we observe consistent significant differences in the extent to which alumni strongly agree that they are different across various measures because they attended York University, as shown in Table 4. Systematically, alumni who indicate they would not have attended post-secondary education if not for York are more likely to strongly agree that they are different in a positive way because they attended York University.⁸ Results for university-access alumni are less consistent but also generally positive.

Table 4 Share of respondents to the alumni survey who “strongly agree” that they have attributes “because [they] attended York University”, by access status

	Non-Access	Post-Secondary Access	University Access
I am a more civically active person	7.0%	13.7%*	11.2%*
I am a more politically engaged person	8.2%	15.0%*	11.8%
I feel a greater sense of belonging in my community	3.0%	11.6%*	6.0%*
I feel a greater sense of belonging in Canada**	5.6%	13.5%*	8.9%*
I am better able to communicate with people from different cultures	12.2%	20.0%*	12.2%
I am more supportive of immigration	7.6%	13.4%*	8.9%
I am more appreciative of cultural diversity	13.6%	24.2%*	12.6%
I participate more in cultural creation	5.3%	13.5%*	7.5%***
Serving others has been a more important motivating factor in my career than it would have otherwise been	11.2%	24.0%*	10.1%
I have had more meaningful and motivating work over the course of my career than I otherwise would have	22.0%	31.9%*	18.3%
I am better able to communicate with people from different cultures because of my discussions with a people of a race or ethnicity other than my own while at York University	19.6%	32.2%*	20.6%

* Statistically significant difference relative to non-access students

** Question was only asked to immigrants

*** There is no statistically significant difference in the share of respondents who strongly agreed relative to non-access students, but a significantly larger share of respondents agreed (by between 6.5 and 6.9 percentage points)

Some of the benefits of attending York can depend on the level of degree completed. Asked to reflect on what they planned to do immediately after graduation, 38% of FG students responded that they hoped to pursue postgraduate studies. This share was even higher at 44% among post-secondary access FG students, though lower (22%) among marginal university access FG students. Of course, asking students to reflect on their *immediate* plans after graduation may obscure longer-

⁷ There is no statistically significant difference in responses between post-secondary access and non-access alumni on this question, except that post-secondary access alumni are more polarized in strong agreement and disagreement.

⁸ The scale for these questions is strongly agree, agree, neither agree nor disagree, disagree or strongly disagree. For responses other than agreement, often there is a lower share of access students who neither agree nor disagree and in some cases a lower share who disagree.

term academic goals.⁹ This trend in the share of access students who intend to complete postgraduate studies may be relatively recent, or these expectations may not line up with reality. Among alumni who identified as either post-secondary access or marginal university access, only 19% completed any kind of post-graduate credential above a bachelor's degree.

Qualitative responses from the FG survey provide further texture regarding students' views on the opportunity to study at York. FG students used phrases like “fulfilling dreams” and “achieving goals” to describe their experience at York. Some examples included:

York U is “a gateway to endless opportunities, I'd be much worse off without it.”

“I won't have the same future as my parents, I will have a better job because I attended university.”

“I'm better off because I had a chance to go to University then (sic.) my parents did not have this opportunity.”

While students often identified tangible benefits from their studies like earning a degree or earning higher wages, these were paired with intangible gains like personal growth, self-awareness, critical thinking skills, and civic participation. For example, students wrote:

“York provides their students with so many opportunities which help us learn and grow to be better people. In addition, York has so many services to help their students find job opportunities and career pathways even after they have graduated.”

“I will be more open minded and I will understand different concepts of life. I will be able to think critically in any level of life. I will be able to help my community and my family members and my home country Yemen.”

“Not only academically but I believe I will also experience a lot of personal growth and obtain experiences that will be greatly beneficial.”

“York has led me to believe in my strength and courage as a person and a student.”

Providing access is transformative. The next section will explore what features and activities of the institution explain York's success in this area.

2.3 Factors that Make York Accessible

There are three main reasons why York University is an accessible institution of higher learning. First, because its main campus is located at the northern edge of the City of Toronto and in proximity to the York and Peel Regions, the university is uniquely positioned to serve the communities in this region which contains a number of communities where incomes have been

⁹ Students responded overwhelmingly that “travel” was their immediate post-graduate plan, which suggests our numbers reflect students' immediate goals, rather than longer-term access to graduate programmes or benefits of post-secondary education. As well, some students planned to work full-time to save money to enroll in a graduate programme at a later date, or to take time to decide whether they wanted to pursue a graduate degree. Similarly, other respondents were already enrolled in post-graduate programmes at York, many of which – like business and law school – are terminal degrees, where further educational qualifications are not necessary.

falling relative to the city-wide average over the past few decades, and where the proportion of the population made up of first-generation immigrants has doubled from over 30% to 60%. This makes York an obvious first choice for a large number of students from underserved communities: quite simply, it lives where they do. Second, York's reputation for diversity and inclusion makes it an attractive option for a variety of learners, leading them to choose it over other institutions. Third, the institution has an array of policies and programmes that reach out to qualified students from underserved communities and provide an array of academic, social and financial supports to ensure they complete a post-secondary education.

2.3.1 Location and Cost

York University is located in the Greater Toronto Area, which is the largest metropolitan area in Canada and has the highest proportion of immigrants in the country (Arora 2019). The areas surrounding York University's campuses also have considerable economic diversity, with areas of concentrated disadvantage close to Keele Campus such as in Jane and Finch and Rexdale. York University, therefore, has an ethnically and economically diverse local catchment area, with a large share of first-generation students. High quality public transportation links, such as GO Transit and the newly expanded TTC subway, are therefore key to York's accessibility in a wider sense.¹⁰

The *Report on Adult Education and Training in Canada* found that "location", i.e. distance from an educational institution, is a major situational factor in access to higher education (Strange and Cox 2016). Commuting distance has been shown to be more of a deterrent for Canadian students from low-income families (Mueller 2008). According to the National Survey of Student Engagement (NSSE), 80% of York first-year bachelor's students and 65% of York fourth-year bachelor's students live at home with parents, guardians or relatives, well above the respective Ontario averages of 72% and 54%. This is a feature of being situated in Toronto. According to Statistics Canada (2017a), 47.4% of young adults (aged 20 to 34) in Toronto were living with their parents in 2017 compared to 42.1% across Ontario. This partly relates to high housing costs, which make pooling resources for housing more attractive, and partly relates to higher expectations for living at home among immigrants - census data indicates that immigrants and second-generation Canadians are more likely to live with a parent than were Canadians of third or later generations. These patterns suggest that proximity to family homes is a key reason why many students attend York. Despite its size, it is still in many ways for many students a "neighbourhood university".

The student surveys carried out for this project (see Appendix) bear out the importance of York University's location in making it accessible. The current student survey asked why students chose to study at York University, and "location" was the most common reason given among students – cited by roughly 28%, including among access students. Perhaps most importantly, 38% of access students in the general survey and 24% in the first-generation survey cited proximity to home/commute as making York University uniquely attractive or possible to attend. Qualitatively, respondents often indicated that York's location allowed them to live at home and commute, saving money on accommodation and thereby bringing down the cost of their education.

¹⁰ It is worth noting, however, that in their responses to the First-Generation Student Survey, students commented that they were adversely affected by changes made to GO Transit's York U service in January 2019, complaining that longer commute times, less convenient travel, and higher costs made it difficult to maintain a work-life balance.

These patterns reinforce the importance of York's location, and in particular that of the Keele Campus. These data are also suggestive that the proposed expansion of York to Markham could have benefits in expanding access to higher education to this arguably underserved area of the GTA.

2.3.2 Diversity

As a newer post-secondary institution in the 1960s, York largely avoided the entrenched institutional biases that plagued older universities. As early as 1961 when York appointed Bertrand Gerstein to the Board of Governors (and added Bora Laskin in 1967), the university made strides to become a more diverse institution.

In York's early days, pervasive misogyny, racism, and anti-Semitism made advancement in Canadian academia difficult for members of marginalized groups. Women and minorities from Canada and the US found opportunities for professional advancement at York that would have been denied to them elsewhere, in part because York needed large numbers of qualified faculty. There is evidence that having more diverse teaching staff can help promote learning among students of the same background (Llamas et al., 2019; Villegas and Irvine, 2010; Miller, Sep. 10, 2018). Today, York University has a larger share of women faculty members (46.1%) than the Canadian average (43.9%). York is slightly below average in the share of faculty who are racialized persons/have visible minority status (19.8% versus 21.1 across Canada), though this figure has more than doubled since 2010.¹¹ These patterns may relate as much or more to field of study composition of the institution than anything else.

Openness has remained a powerful characteristic of the institution, which has, as the data below show, one of the most diverse student bodies in the country. Based on data from the National Survey of Student Engagement (NSSE) and other surveys, it is possible to compare the proportion of students who are racialized across institutions. In the 2017 round of NSSE, 30% of York University's first-year students and 41% of its fourth-year students identified "white" as one of their ethnic categories.¹² Thus, two-thirds of the university's students have some kind of non-white or racialized background. This is comparable to figures at other universities in the region. At the University of Toronto, 31% of first-year and 36% of fourth-year students identified "white" as one of their identities in the 2017 NSSE, while Ryerson indicates that 57% of its students are members of racialized identities (it is unclear how Ryerson counted individuals with more than one identity). Across the U15 group of research-intensive universities as a whole, 61% of first-year and 64% of fourth-year students identified as "white". Similarly, in the 2019 Canadian Undergraduate Survey Consortium (a survey whose sample is largely outside the U15), 44% of students indicated that they were a "visible minority".¹³ All of this together suggests that few, if any, institutions in Canada have as diverse an ethnic/racial profile as York.

There are no comprehensive immigration data for the student population that can be compared. A considerably higher share of York students report in the NSSE being permanent residents, but this is at best a partial signal given of course many immigrants have citizenship. Among the general

¹¹ These data are taken from data provided by York University, and the CAUT Almanac of Post-Secondary Education 2019. All data are from 2016, the most recent year tracked by CAUT.

¹² More than one answer was possible, with approximately 15% of respondents indicating multiple ethnicities.

¹³ In the 2019 Canadian Graduate and Professional Student Survey, 55.3% of York students identified as being a member of at least one of six visible minority groups proposed.

student population surveyed as part of this project, 38% identify as immigrants to Canada. Of these students, 32% arrived in Canada in the last five years. One-third of FG students reported being immigrants, with 38% of these having arrived in the past five years.

Although the numbers remain modest, an increasing number of Indigenous students are also being educated at York. In 2013–2014 there were 129 Indigenous students enrolled (0.3% of the total enrollment), but by 2017–2018 that number had grown to 359 (0.69% of total enrollment) (data provided by York University). In our general student survey, 1% of respondents identified as indigenous, as did 2% of FG students and 3% of FG access students. Moreover, York has demonstrated commitment to supporting Indigenous students. It has instituted a new University-wide Indigenous Framework in response to the recommendations of the Truth and Reconciliation Commission (TRC). Hiring Indigenous faculty, together with programmes like Indigenous Studies and the History of Indigenous Peoples Network (HIPN), are important steps to ensure that York meets its University Academic Plan (2015–2020) to better represent Indigenous communities.¹⁴ In 2019, there were new job postings for a tenure-track position in Indigenous Studies, and a Canada Research Chair (Tier 2) in Indigenous History of North America (Department of History). Meanwhile, York University students created an app to link students with elders and other forms of support; the creators were later awarded a \$210,000 Trillium Foundation grant to expand the use of the app to other Ontario post-secondary institutions (York Media Relations 2018). As of this point, 139 out of a possible 200 users have used the app (personal correspondence, April 2020).

Complementing this, our survey data indicate that York University makes students of diverse backgrounds feel more included. Fully 22% of FG access students reference diversity and inclusion as having “made York University uniquely attractive or possible to attend compared to any other university,” ranking diversity and inclusion as second only to location in importance.¹⁵ Asked to identify whether York’s reputation for inclusivity was an important factor in whether to study at York, 42.2% of FG students responded that it was “very important” or “extremely important.” When asked to expand on their answers, students praised York’s reputation for diversity and inclusion, highlighting its multiculturalism.

When asked what makes York uniquely accessible, one first-generation access student cited *the diversity and York’s commitment to serve the communities around the area*.

Another access student stated: *I chose York because the institution is very big and diverse. All professors and students are very driven to help new immigrant students like me who has (sic.) zero knowledge of the Canadian education system.*

Other descriptions included that York *is a very inclusive university that encourages and provides opportunities for everyone* and that it is *a very multicultural university with great values catering to students*.

Of course, much of the diversity of York is due to its location. Although lower-income students are in general less likely to attend PSE, and immigrants and visible minorities are more likely to be lower-income, being an immigrant and/or visible minority on its own raises the likelihood that someone will attend PSE (Mueller 2008). For instance, the 2006 and 2016 Canadian censuses reveal that 43% of children of immigrant parents aged 13 to 17 in 2006 had a university degree in 2016,

¹⁴ In 2016, 1.4% of York faculty were Indigenous which was equal to the national average among university faculty. Again, these data are from the 2019 CAUT Almanac and directly from York.

¹⁵ In the general student survey, only 13% of respondents cite diversity and inclusion, which trails behind programme or courses as a factor in students’ choice, and is even with the campus and related amenities.

compared with 29% of same-aged youths from the third generation or more (Turcotte 2019). It would therefore appear that among youth whose parents did not complete PSE, immigrants would be more likely to attend PSE than non-immigrants. York's high share of first-generation students, in addition to its diversity, is therefore likely a product in large part of its proximity to sizable immigrant communities.

2.3.3 Social Mandate

Finally, York University is accessible because the institution has since inception committed to supporting marginalised students. Early in its history, York created Atkinson College in the 1960s to give students of all ages the opportunity to study part-time, when few other institutions had pursued such a strategy. York has numerous policies to attract and retain learners from diverse backgrounds. In 2018-19 over 4,614 individuals benefitted from access, bridging and pathways programmes that we will describe in this section. York University also provided more than \$84 million in scholarships, bursaries and awards to students in 2018-2019, of which \$59.6 million (71%) was distributed at least in part on the basis of need (York University Budgets & Planning Department email correspondence Jan 2020). We will first review York's general admissions and bridging programmes, then efforts focused on mature and senior students, before closing with a discussion of supports for students with disabilities.

General Admissions and Bridging Programmes

York has pursued several policies and programmes intended to make PSE more accessible, and which directly address the barriers diverse learners face on their path to PSE.

Part of York's commitment to accessibility is reflected in its outreach and admissions policies, which seek to extend opportunities to students with academic backgrounds that are promising but may not gain access to other schools. Seven percent of access students in the general survey and 5% of FG access students indicated that York University was uniquely accessible because it was the only institution that admitted them. Once again, there is strong evidence in the literature that students at the margin of admission to university typically have much better life outcomes than peers who barely miss out. That York can accept these students, develop their talents and set them on the road to success, is an unqualified public policy success.

An additional factor in the accessibility of York University is its openness to transfer students. York has been the largest recipient of transfer students in Ontario, based largely on close collaboration with Seneca College (Smith et al., 2016). From 2000 to 2012, approximately 14,700 students transferred between the two institutions in either direction. This would be especially conducive to facilitating access to university education among students who would otherwise only attend college and we did hear references to transfer from a disproportionate share of these students.

York also has specialized programmes to support students who face barriers. We address some of these in this section, and those focused on mature and senior students in the next section. A number of access students referenced these programmes in their survey responses.

The Faculty of Education's Advanced Credit Experience (ACE) was created in partnership with the Toronto District School Board (TDSB) and the York University Faculty Association (YUFA). Targeting four TDSB secondary schools in the Jane and Finch community, ACE aims to enhance access to university education. Participating students attend lectures on campus, receive open co-op credits, participate in volunteer placements, and can earn \$5,000 in scholarships (Faculty of Education n.d.).

The Faculty of Education's Access Initiative recruits students who "will make excellent teachers and reflect the diversity of our society." Students who identify as Indigenous, Persons with Disabilities, Racialized Persons, and "Other Minoritized Persons", are invited to apply. The Faculty defines "Other Minoritized Persons" as including people living in poverty; of diverse sexual orientation; English Language Learners; and refugees or those impacted by the refugee experience (Faculty of Education n.d.).

York also offers a number of programmes that specifically target newcomers to Canada. The School of Continuing Studies has two such programmes: YUBridge and the York University English Language Institute (YUELI) Pathway programme. YUBridge allows students who have received a conditional offer of acceptance to York to begin their degrees while taking courses to improve their English in order to meet the York entry requirements. The YUELI Pathway programme has over 3,000 student registrations every year and is one of the largest language training centres in Canada. There are additional programmes led by other units within the University. The Faculty of Liberal Arts and Professional Studies has endeavoured to streamline the transition for learners with international training or accreditation through the Bridging Programme for Internationally Educated Professionals certificate programme (School of Continuing Studies 2020). Lastly, Osgoode Hall is the only law school in Canada to offer an Exam Preparation Programme for internationally-trained lawyers who are looking to take their National Committee on Accreditation (NCA) exams (Osgoode Hall Law School 2020a).

The refugee experience is the focus of other access programmes. The Department of Sociology, for example, hosts a free bridging programme for students with precarious immigration status (including no status), a pilot project for a university-wide initiative. York partnered with the FCJ Refugee Centre to create Access to Education, the first programme of its kind in Canada, which allows and supports Canadian "dreamers" (i.e. young people without immigration status) to pursue university degrees. Eligible students pay domestic rather than international tuition. There are approximately 80 students currently participating in the programme, who otherwise would likely not be in studies.

Another initiative is offered by the School of Gender, Sexuality, and Women's Studies. The "Women's Bridging Program" helps women who want to upgrade their writing and speaking skills.¹⁶ Participants are also able to explore the possibility of pursuing university education (Bridging Programme for Women 2020). One student who responded to the first-generation survey specifically cited this programme as her pathway to university. Asked whether she felt better or worse off in the long term for having attended York, the student spoke positively about the impact a university education has had on her emotional well-being, ability to empathise, and conflict management skills, concluding: "I feel hopeful for my future."

¹⁶ York was also an early adopter of policies on sexual harassment and pay equity. Women's studies courses began in the first years of the 1970s, and a degree-granting programme in women's studies was approved in 1983. Today, the Gender & Women's Studies programme is reputed as one of the strongest in Canada.

Efforts Focused on Mature and Senior Students

One of York's founding principles, initially embodied in Atkinson College, is its commitment to adult learning. In the 2017 NSSE survey, only 78% of first-year students were aged 19 or younger compared to 86% across Ontario universities, while only 65% of fourth-year students were aged 20-23 compared with 81% across Ontario. As we discussed earlier, our survey data indicate that first-generation and access students tend to be older.

In the survey of first-generation students conducted for this report, students noted York's commitment to expanding educational opportunities for adult learners and noted that being "accepting of mature students" was part of the institution's commitment to diversity. Respondents explained that the number of adult learners in classes and on campus made for a welcoming and collegial atmosphere. One student commented that administrative support made it easier to attend York, noting that there was a "lack of bureaucracy (compared to other universities) for applying as a mature/transferring student."

The academic bridging programme from the School of Continuing Studies is an important programme to support mature learners. It provides courses to help mature learners attain the skills required for admission to York in general or to a specific course or programme. There were 81 enrolments in the programme in 2018-19. The Office of the Vice-Provost Academic also oversees the Transition Year Programme (TYP) for adults over 19 years of age who have not had an opportunity to finish high school and who therefore lack the credentials to qualify for university admission. The TYP serves as a bridge to university in two important ways. First, students enrolled in the TYP will take a combination of university courses and workshops and upon completion of the programme will earn 18 academic credits toward university degree study. Second, upon completion of the programme (and subject to admission requirements), TYP students are eligible to transfer into an academic degree programme at York. Each year, the TYP has supported about 40 people, of whom roughly half attend York as full-time students, while others are directed to college programmes. Members of the first TYP class completed their undergraduate degrees in 2016 (Transition Year Programme 2020). At present, changes to enhance the TYP are under consideration, for implementation in fall 2021.

York differentiates between mature students and senior students. Among other academic admissions criteria, students are considered "mature students" if they are at least 20 years old and have been out of full-time high school studies for at least two years or have returned to upgrade after a two-year absence. Senior citizens are evaluated as mature students unless they have completed previous post-secondary studies. Senior students are eligible for a domestic tuition waiver if they are Canadian citizens or permanent residents over 60 years of age, and the waiver applies only to domestic, non-professional undergraduate programmes. Asked what made York University "uniquely attractive or possible to attend compared to any other university," a number of students cited York's senior tuition waivers. One respondent said that, "as a senior, York is the only school to offer reduced tuition," and another explained that, while Brock and Western offered waivers, York offered the best programme and was accessible by transit.

The relevance of providing access to seniors will only grow as the Canadian population ages. In 2012, fewer than one in seven Canadians were seniors; by 2030, the federal government predicts that almost one in four Canadians will be seniors (Government of Canada, 2014). Within Ontario, there

were 2.4 million seniors in 2018. Ontario's government predicts this number to grow to 4.6 million by 2046, with the most rapid growth occurring before 2031 as the baby boomer population turns 65 years of age (Ontario Population Projections, 2018-2046).

2.4 Summary

Since it was founded in 1959, York University has always been concerned with expanding access to underserved populations. After the establishment of the Keele campus, as the city grew northwards, York's surrounding communities were primarily home to new Canadians. York's place at the heart of these communities has meant that over time it has become a world leader at integrating an ethnically diverse student population, and in providing first-generation students a place from which to launch their professional and/or scientific careers. As we have seen, a substantial portion of students at York would simply not have attended university or college had York not existed: a tribute to the institution's intensive outreach efforts and its welcoming environments. For these thousands of students, York is a genuinely and uniquely transformative institution, a key part of the system that integrates new Canadians into Toronto's economy and society.

3. An Engine for Social Progress

Universities have a responsibility to the communities in which they are situated, not just the students who pass through their gates. York achieves this partly by producing civically-engaged graduates, who volunteer millions of hours and create new charities and non-profits, and partly by engaging in research and other service activities that are broadly in the public interest and designed to foster resilience in local communities.

York University's reputation for community engagement is well-established. In partnering and collaborating with the local, regional, and international communities, York connects community projects to researchers and learners on its campus. The broad range of engagement activities include knowledge mobilization, community-based research, initiatives to support access to post-secondary education, and inter-institutional academic partnerships. York has a demonstrated commitment to community engaged teaching, learning, and research, with the aim of serving the local and wider community. In interviews, staff from across York University conveyed a strong sense that their school was committed to public service in a unique way.

3.1 Civically Engaged Graduates

The first, powerful way in which York has community impact is through its graduates, and the institution's effect on its graduates. We can break down graduate impact in terms of their professional work in service to the public, their civic engagement, their attitudes towards diversity and feelings of belonging, and lastly their creative expression.

3.1.1 Working Professionally in Service to the Public

Many York alumni pursue careers of service, across a vast array of occupations and sectors.

Figure 1 indicates the extent to which alumni agree that their career has served society in a series of ways. Almost two-thirds of alumni agree or strongly agree that their career serves society by improving health, well-being and safety, advancing equality of opportunity and promoting social and cultural inclusion. Protecting the environment and promoting artistic and cultural expression are less common societal benefits of alumni's careers, although more alumni still agree than disagree that their careers serve society in these ways.

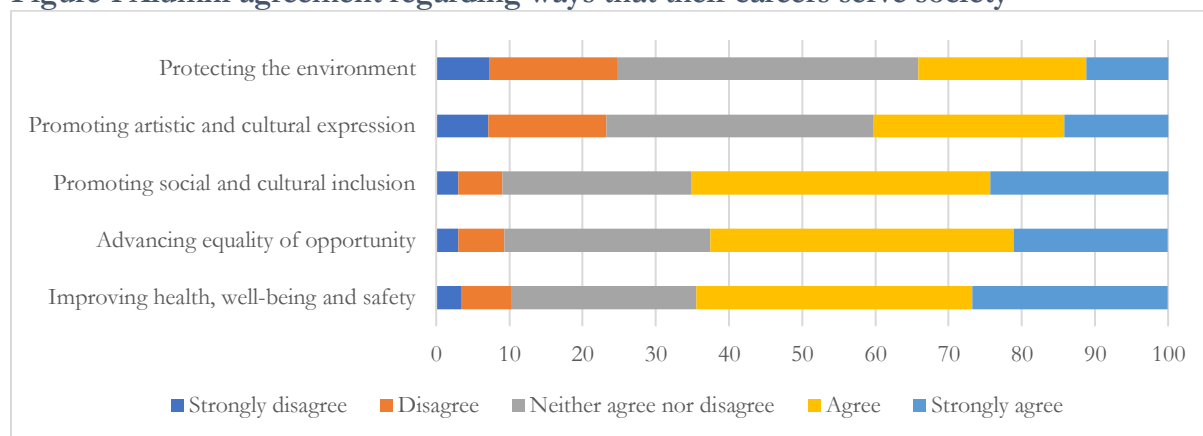
Clearly, alumni are committed to advancing the public good through their careers. To what extent this is attributable to York, however, is difficult to ascertain. Establishing more causality, 34.6% of alumni agreed with a statement that "because [they] attended York University, serving others has been a more important motivating factor in [their] career than it would have been otherwise". This figure rises to 39.2% for FG alumni, a statistically significant difference.¹⁷

York University and many of its faculties are designing their programmes with an explicit focus on preparing students to advance the public good, notably but not exclusively through a growing focus

¹⁷ There is no statistically significant difference in the proportion of access and non-access students giving this response.

on experiential learning. York’s professional faculties are notably committed to designing programmes and courses with equity and social responsibility in mind.

Figure 1 Alumni agreement regarding ways that their careers serve society



In 2018, York University educated 647 new members of the Ontario College of Teachers, the largest figure in the province and 27% of the provincial total – though numbers are in decline across the province since at least 2015 (Ontario College of Teachers 2018). This high level of supply is especially important given that the oversupply of teachers has ended and tilted towards shortages in recent years. (Macdonald 2019). An important further feature of York’s teacher graduates is their considerable ethnic diversity, better reflecting the growing diversity of students in Canadian and especially GTA schools. Various programmes at the Faculty of Education focus specifically on preparing students to serve traditionally marginalized or disadvantaged students, both through more inclusive pedagogy and by training students who are themselves members of these groups.

As one student commented in our survey: *I want to be an educator, specifically working in an urban community, and York offers many opportunities for me to do so before I even start the BEd programme.* This was an important reason why this student felt they would be better off having studied at York.

Waaban is a Bachelor of Education degree with a focus on Indigenous worldviews, launched in response to the TRC’s Calls to Action, in partnership with the Toronto District School Board. The programme is grounded in Indigenous Knowledge and Pedagogy and integrates teachings from Indigenous Elders, educators and community leaders. The programme’s cohort model allows participants to study continuously over four semesters to achieve accelerated completion and includes both community and school practicum placements. Teaching takes place away from York at the Urban Indigenous Education Centre, while students also participate in practicums and internships with Indigenous associations in the GTA. The *Waaban* programme is supported by the Faculty’s *Wüeelham* courses (a Lenape word that means “make good tracks”). *Wüeelham* options were developed in collaboration with Indigenous scholars and communities and engage participants in learning from Indigenous peoples’ experiences and perspectives. These education streams seek to highlight the strengths of urban Indigenous communities and to prepare students for a wide variety of career paths (Faculty of Education n.d., Faculty of Education 2020a).

The Faculty of Education also offers a Master in Leadership and Community Engagement, the first of its kind in Ontario. The programme is a professional master’s degree that prepares graduates for leadership roles in public-sector organizations and communities. It focuses on community

engagement, leadership, policy, programme design, and evaluation and social justice. Enrollees “can gain the skills and knowledge to leverage community-based research and practice for social change.”

York is also the only university in Ontario, and one of the only in Canada, to offer a Deaf and Hard of Hearing Teacher Education Programme (York University Faculty of Education, n.d.).¹⁸ The Post-Baccalaureate Diploma is offered online and in-class to qualified teachers in Ontario, and part-time only to non-Ontario residents who are qualified to teach in their own provinces. Tuition is free for Ontario residents.

York also trains a very large number of nurses. In 2018, 573 first-attempt applicants in the Registered Nurses exam were York University students, the second highest figure in the province and equal to 12% of the provincial total. York’s footprint in nursing, achieved in collaboration with Georgian and Seneca Colleges, has increased markedly, with first-attempt examinees up by 30% since 2015 (College of Nurses of Ontario 2018).

Like the Faculty of Education, Osgoode Hall Law School has adopted measures to better prepare its graduates for reconciliation with Indigenous peoples. In 2017–2018, Osgoode Hall introduced the Indigenous and Aboriginal Law Requirement for students enrolled in the Juris Doctor programme. These students must now complete a course for credit that “focuses on Indigenous and Aboriginal legal issues and engages in a substantial way with Indigenous laws, Aboriginal law, and aspects of professionalism and practice skills relating to serving Indigenous clients” (York Media Relations 2018a). This responds to the TRC’s Call to Action for law schools to require all their students take a course in Aboriginal people and the law, including the history and legacy of residential schools, the *United Nations Declaration on the Rights of Indigenous Peoples*, Treaties and Aboriginal Rights, indigenous law, and Aboriginal-Crown relations. Osgoode Hall also offers an Intensive Programme in Indigenous Lands, Resources and Governments (IPILRG), which is uniquely open to both the school’s own students and students from other institutions (Osgoode Hall Law School, 2020c). Students complete a series of intensive seminars and then complete a seven-week field placement with an indigenous or environmental organization, a first nation, a law firm or a government department. The programme wraps up with another series of intensive workshops for student to reflect on what they learned during their placement.

In 2009, the Aspen Institute – a think tank based in Washington, DC – announced that the Schulich School of Business ranked number one in its global survey of how well business schools were preparing their students to manage the environmental, social and ethical complexities of modern-day business. Schulich was the first Canadian school to ever rank first in such a survey of management education (Schulich School of Business 2018). In their subsequent Beyond Grey Pinstripes ranking in 2011-12 (the most recent available), Schulich maintained an excellent position, trailing only the Stanford Graduate School of Business and coming first in Relevant Coursework (The Aspen Institute Center for Business Education 2012). In 2020, the Schulich School of Business placed in the top-30 of the first Positive Impact Rating for Business Schools.¹⁹ The rating was based on a student survey and focused on three main categories: Energising (governance and culture), Educating (programmes, learning methods, student engagement) and Engaging (institution as a role model, public engagement) (Muff and Dyllick 2020). The Business and the Environment Graduate Diploma, offered in jointly with the Faculty of Environmental Studies, is a critical effort to train

¹⁸ York also introduced the first Critical Disabilities Studies programme in Canada.

¹⁹ This is not a ranking so institutions are grouped rather than specifically ranked, though Schulich was not among the nine schools in Level 4 of the Rating, instead in Level 3.

environmentally responsible graduates, supporting three core and 16 elective sustainability courses that can contribute to MBA requirements. In its Bachelor's and Master's programmes, respectively Schulich students can pursue specialisations in Responsible Business and Business and Sustainability.

Finally, there is the role Glendon College plays as a route into the public service both at the federal or provincial level. As the GTA's main provider of bilingual education, it is a natural source of talent for both levels of government, which require many public servants to have an ability in both official languages. In particular, Glendon's International Studies program has produced a steady stream of graduates to fill positions in Canada's Foreign Service and the Department of International Trade as well as at international agencies such as the United Nations and the World Bank.

3.1.2 Performing Community Service

York alumni widely undertake community service outside of their professional activities.

Volunteerism benefits the wider community in numerous ways. It generates the links necessary for people to organize collectively and act on the behalf of others. Volunteerism produces a stronger sense of community, aiding the creation and maintenance of communities where individuals are concerned for others' well-being, including communities' most vulnerable populations. Volunteers tend to interact with individuals of markedly different backgrounds, helping to challenge stereotypes and prejudices, ultimately promoting the acceptance of diversity.

While volunteerism has selfless and altruistic connotations, it and civic engagement more broadly are also associated with positive health outcomes, especially later in life. For people of all ages, volunteering strengthens social skills, combats feelings of depression, promotes self-confidence, and is associated with physical health (Western Connecticut State University). Among those over the age of 60, volunteers have reduced risks of cognitive impairment (Martinson and Minkler 2006).

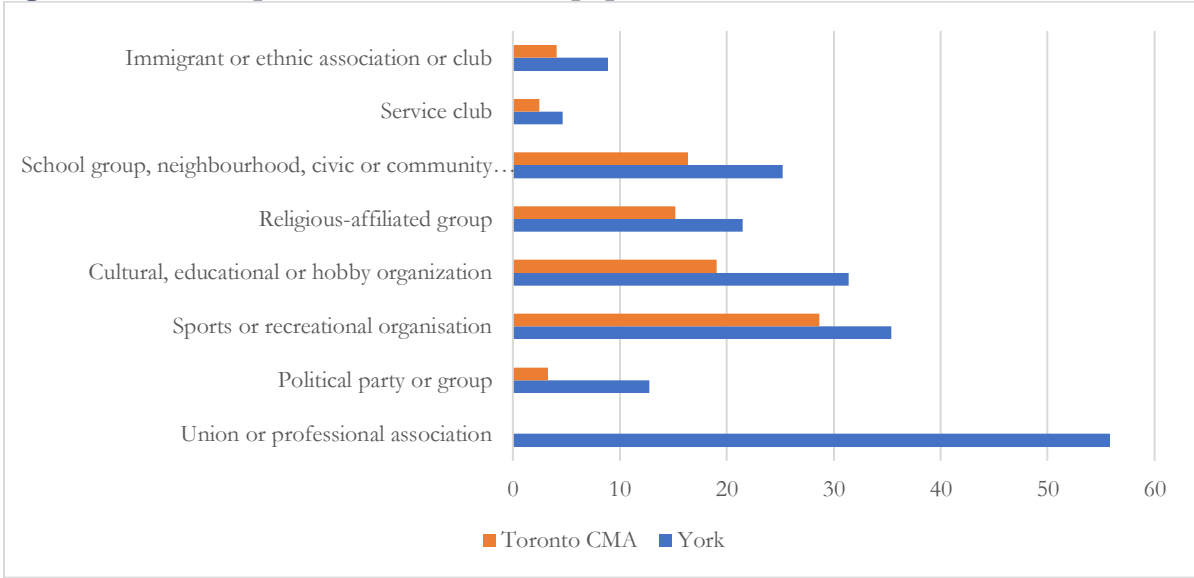
The charitable sector is a significant economic driver in Canada. There are over 170,000 charitable and non-profit organizations in the country, of which 85,000 are recognized charities. Overall, the charitable sector employs two million Canadians. An additional 13 million Canadians volunteer in charitable and non-profit organizations. This is a big industry. The core non-profit sector, which refers to non-profits that are not hospitals and universities, accounts for 2.4% of Canadian gross domestic product (GDP). For the purpose of comparison, this is three times the value of the Canadian motor vehicle industry.

Fifty-six percent of York Alumni reported that in the past 12 months they had "pursued volunteer activities on behalf of a group or an organisation such as a school, religious organisation, sports or community association". This means there are 141,530 York alumni aged 25-64 who volunteer. Comparing this volunteering rate to Statistics Canada data from the General Social Survey, while controlling for age, gender and immigration status, York alumni are 13.5% more likely to have volunteered in the past 12 months than other university graduates in the GTA, a statistically significant difference.

Among York alumni volunteers, 32.3% volunteered at least once a week and 59.8% volunteered at least once a month. These figures are not significantly different than the averages for university graduates across the GTA.

Figure 2 indicates the share of York alumni who report having been members or participants in various types of civic organisations, with comparison data for the Toronto CMA where applicable. Unions or professional associations are the most common organisations for alumni to be involved with, engaging over half (56%) of alumni, followed by sports or recreational organisations (35%) and cultural, educational or hobby organisations (31%). Most interestingly, however, relative to other university graduates in the GTA (controlling for age, gender and immigration status), York alumni were significantly more likely to have participated in every type of organisations for which we gathered comparable data – i.e. for all except unions. Participation in political parties and immigrant and ethnic organisations respectively are more than three-times and two-times as high among York alumni as among Toronto CMA university graduates.

Figure 2 Share of York alumni who report being members or participants in civic organisations, compared to Toronto CMA population



The data presented reflect figures for the Toronto CMA weighted to reflect the demographics of York alumni. Tests of statistical significance, however, were based on Toronto CMA weights.

Donating money is another important way to contribute to positive change in the community. Sixty-nine percent of York alumni report having made “a (financial only) charitable donation” in the previous 12 months. This figure is lower (by 8.6 percentage points) than the average for GTA university graduates with our standard controls. However, York alumni donated on average \$2,021.67, which corresponds to over three-times the weighted GTA university graduate average adjusting approximately for average income growth and inflation.

Our alumni survey also asked alumni whether they had “started a charity or non-profit organisation at any point in [their] life, either alone or working with others”, and 12.6% reported having done so. This would translate into 31,638 York alumni ages 25-64 having participated in starting a charity or non-profit organisation. On average, these alumni have helped to start 1.62 organisations each. Most (62%) of these charities or non-profit organisations are currently active.

It is difficult to translate these charities numbers into impact in terms of active organisations and people employed. Given this, estimates of impact of charities and organisations started by York

alumni provide very much only a ceiling.²⁰ Nevertheless, our figures suggest that there are up to 31,904 active charities and non-governmental organisations started by York alumni ages 25-64. Only 63% of respondents who had started charities indicated charities and organisations that they started had employed anyone in the past 12 months, but they could conceivably employ up to 300,767 people.²¹ Almost 44% of respondents indicated that their associated charities had grown their activities over the past 12 months, while activity had declined for only 7.4%. Fifty-nine percent reported the active charities having operations in the GTA, 16.8% in other parts of Ontario, 14.7% elsewhere in Canada, and 25.5% outside of Canada.

There is perhaps no greater indication of civic engagement in a democratic society than running for office. Three percent of York alumni indicate that they have “ever run for election to a school board, for a nomination within a political party, or to government at the municipal, provincial or federal level”, which translates to 7,389 individual candidates when projected across all York alumni. The rate is twice as high among men (4.2%) as among women (2.1%). Almost half (46.4%) of those who had run had done so for a school board, followed by 21.3% who ran for municipal council and 2.4% for mayor. Looking to the provincial and federal levels, 20.7% ran for a nomination from a political party, but just 10.8% ran for a federal seat and 8.5% for a provincial seat.

Again, establishing causality is the key challenge. In our alumni survey, 27% of respondents indicated that they were “a more civically active person because [they] attended York University”, while 29% indicated that they were “a more politically engaged person”.²² As we outlined in Section 2.2.2, these results are strongest among access alumni. Together, these data suggest many alumni have volunteered, donated money and/or run for office more because they went to York.

3.1.3 Attitudes Towards Diversity, Cross-Cultural Communication Skills and Feelings of Belonging

Canada is becoming an increasingly diverse country. Nowhere is that more apparent than in the GTA, where immigrants represented over 46% of the population in 2016 (Statistics Canada, 2017b). Immigration has been among the most important engines for economic growth in Canada in recent years. A recent Conference Board of Canada (2018) report suggests that immigration will account for almost 50% of annual economic growth from 2018 until 2034.

Research has shown that a diverse workforce is a competitive advantage, as Barton et al. (2016) note: Companies with “the greatest gender, racial, and ethnic diversity are found to be more likely to have financial returns above industry averages” (p. 308). Other studies suggest that a 1% increase in ethnocultural diversity brings with it a 2.4% increase in revenue and a modest increase in

²⁰ We cannot track where multiple York alumni participated in launching the same organisation, and it is difficult to discern what it means exactly to have helped start a charity or non-profit organisation – is this as the founding executive director, as the board chair, or as another volunteer perhaps with only peripheral involvement? There is considerable scope for double-counting where multiple York alumni are involved in the same organization.

²¹ This figure for employment in charities is exceedingly high and may be an over-estimate. Beyond the possible issue of York alumni involved in a single charity being counted multiple times if they all respond, a potential explanation for our figures is a large number of charity staff working overseas. Among the 14 respondents who reported the most employees, with total figures numbering well into the thousands, 12 had operations outside of Canada and four had operations exclusively outside of Canada. Of course, employment in charities should not be taken as entirely comparable to employment in launched businesses – which we discuss later – because the importance of participating in launching a charity may vary considerably between being a leading founder to being a volunteer advisor or secondary board member.

²² Rates of agreement were only slightly higher than rates of disagreement on these two questions.

Similarly, 78% of alumni indicated that they often or very often “had discussions with people of a race or ethnicity other than [their] own” while at York University. Among those who had such discussions, 59% agreed that they “were better able to communicate with people from different cultures because of [these] discussions”. This evidence indicates that the diversity of York University helps to create better inter-cultural communication and understanding.

Asked why she felt she would be better off after attending York, one access student wrote: *The diversity at York allows me to learn more about others as well as myself.*

Increasing numbers of Canadians are bilingual or multilingual. At York, all students admitted to Glendon must satisfy the campus’s bilingual requirement by completing six credits in each official language. Completing this requirement and gaining additional language fluency gives these students distinct lifelong advantages over their monolingual counterparts. Within Canada, bilingual people find it easier to gain employment, make more money, have larger social circles, enjoy wider travel, and possess stronger communication skills (Chibaka, 2017; Swidinsky and Christofides, 2010). There is also important evidence of health benefits from bilingualism (yFile, 2020e).

Eighty-nine percent of alumni held very positive (57.5%) or somewhat positive views on Canadian multiculturalism, whereas just 4.9% held negative views, with these rates almost identical for another question regarding whether immigration has had a positive or negative impact on Canada. Additionally, 84% of alumni agreed that immigrants make Canada a more interesting place to live, while 64% agreed that they were “confident that most refugees who come to Canada will successfully integrate into their new society” (Ipsos Canada 2018). We can roughly compare these results to other Canadians and Torontonians,²⁴ and we find that York graduates likely have more positive attitudes regarding whether immigration has had a positive impact and whether it makes Canada a more interesting place to live. We find no reason to believe attitudes relative to the integration of refugees are more positive among York alumni.

We also tracked integration and feelings of belonging among York alumni, with a focus on those who identify as immigrants to Canada.

A strong sense of belonging is associated with positive physical and psychological wellbeing. For immigrants in particular, positive mental health, full-time work, and home ownership are all associated with a sense of belonging (Kitchen, Williams, and Galina 2015). Belonging to a social community has been found to increase an individual’s sense of meaning in life, while experiences and feelings of social exclusion are associated with lower self-worth and feelings of meaninglessness (Simonsen 2019). All of this, combined with the aforementioned economic benefits accruing from a diverse and welcoming environment, makes cultivating an immigrant’s sense of belonging important.

Almost exactly one-third of alumni identify as immigrants to Canada. We asked these alumni to rank their satisfaction with life in Canada on a scale of 0 to 10 where 0 means they felt “not at all satisfied” and 10 means they are “completely satisfied”. The average result was 8.02.

²⁴ The first question is based off of a 2017 Léger survey (the Association for Canadian Studies 2017). The other results are based on an early 2019 survey by Ipsos (Ipsos Canada 2019). The Ipsos survey tracked results for university graduates across Canada and for all GTA residents, but it did not have a sufficiently large sample to distinguish university graduates specifically in the GTA. In all cases for these surveys, university graduates have more positive attitudes than non-university graduates and GTA residents have more positive attitudes than other Canadians.

A sizable share of alumni agree with statements that they feel a greater sense of belonging in Canada (27%) and in their communities (20.5%) because they attended York University.²⁵ Crossing immigrant and visible minority status, as shown in Table 5, we find that agreement is higher for both immigrant and visible minority alumni.

Table 5 Rates of agreement and strong agreement among alumni that they feel a stronger sense of belonging to their community/to Canada because they attended York University, by Immigrant and Visible Minority Status.

Question Focus	Immigrant-status	Visible Minority	Non-Visible Minority
Community	Immigrant	30.6%	19.9%
	Non-Immigrant	20.7%	12.4%
Canada	Immigrant	41.6%	31.5%
	Non-Immigrant	23.1%	19.7%

However, we found a significantly lower sense of belonging among York University graduates compared to university graduates on average across the GTA, by seven percentage points in terms of a strong sense of belonging in Canada and 11 percentage points in their province. These patterns hold true both for immigrants and non-immigrants. Only in sense of belonging within their community was the difference not statistically significant in terms of strong feelings.

3.1.4 Creative Expression

Creativity is associated with improved self-esteem, cognitive function, moods, and social life. Researchers have found evidence that creativity reduces dementia, improves mental health, and is associated with improved intelligence. It also has links to lower stress and anxiety. Emerging evidence suggests that creativity accomplished through writing is associated with a boosted immune system (Stahl 2018). All of this evidence suggests that encouraging societal creativity may help reduce burdens on the public health system, benefitting society as a whole.

Creativity also has economic benefits. Both creativity and innovativeness as important 21st century economic competencies. Individual creativity is highly linked to firm innovation, suggesting that individual creativity also has beneficial economic effects (Çekmecelloğlu and Günsei 2013).

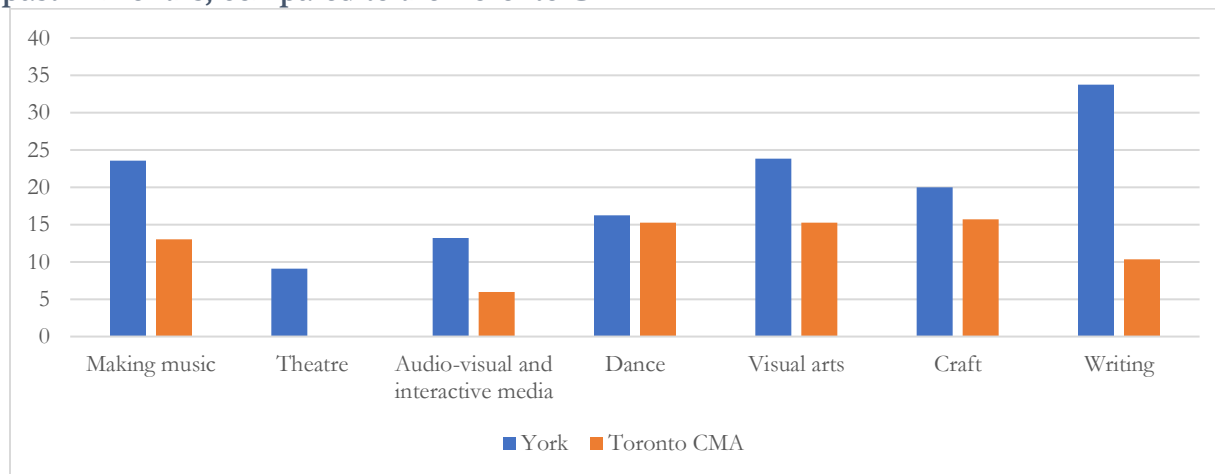
Toronto is an important creative and cultural hub. Within the city itself, there are 83,000 cultural workers, about 6% of the total workforce. Within the region as a whole, there are 130,000 cultural workers, accounting for around 5% of all workers. The city's creative industries are continually growing, aided by Toronto's international cultural attractions. Toronto routinely attracts people from around the world for cultural events and festivals, which helps to enhance the city's vibrant cultural life and strengthens its economy (City of Toronto 2011).

Our alumni survey asked a series of questions regarding creative expression based on the General Social Survey. Figure 4 indicates the share of alumni who indicated they had actively participated in various activities in the prior 12 months, in comparison to the Toronto CMA where applicable. Writing is the most popular of the activities tracked among York alumni, followed by making music

²⁵ Significantly more disagree with these statements – respectively 31% and 33.5%. Disagreement cannot be taken to mean that York harmed feelings of belonging, just that it did not improve them. Disagreement is lower for immigrant and visible minority alumni, though the latter pattern is not as strong as with agreement and not statistically significant.

and visual arts, which is not the case across the Toronto CMA. York alumni are in fact significantly more likely to have participated in writing, making music, visual arts, and audio-visual and interactive media (e.g. making films). There was no significant difference in participation in dance or craft between York alumni and university graduates in the Toronto CMA overall.

Figure 4 Percentage share of alumni who actively participated in creative activities in the past 12 months, compared to the Toronto CMA



The data presented reflect figures for the Toronto CMA weighted to reflect the demographics of York alumni. Tests of statistical significance, however, were based on Toronto CMA weights. The theatre measure is missing for the Toronto CMA because the data were too small for Statistics Canada to report.

As usual, it is difficult to establish York’s causality in these findings. One question in our alumni survey sought to overcome this difficulty – 29% of alumni agreed that they “participate in more cultural creation because [they] attended York University”, though a larger 38.5% share disagreed.

These data strongly suggest that York University makes important contributions to the cultural vibrancy of Toronto. Perhaps no York contribution is greater than that made by the School of Arts, Media, Performance & Design, which is Canada’s largest fine arts school.

3.2 Research and Engagement to Build Resilient Communities

York University received \$45.87 million in partnership research funding in 2018-19 through 810 agreements. Most of this money (\$26.75 million) came from the Government of Canada and its agencies, followed by not-for-profit organisations (\$8.95 million) – much of this from health-related organisations or other universities. Funds supported an array of different activities aiming to advance the public good, with a special focus on many of the most disadvantaged in Canada and around the world. Beyond this research, students have also pursued many initiatives to support different causes and communities in the context of work-integrated and experiential learning.

York’s considerable research and engagement activities have focused on a specific set of disadvantaged areas in order to build more resilient communities. We will first discuss York’s Knowledge Mobilization (KMb) unit, then address specific themes of focus.

3.2.1 Knowledge Mobilisation at York

The work of the KMb unit, part of Innovation York, has helped York to better support its community partners, as the latter confirmed in interviews. KMb builds capacity for knowledge mobilisation, supports knowledge mobilisation strategies for grant applications, and conducts knowledge brokering. To facilitate knowledge brokering, a help desk in KMb assists community or campus-based individuals and organisations to develop community-campus research collaborations, largely in a match-maker capacity. In 2017-18, KMb 122 faculty members, 132 students and 157 partners for projects worth up to \$8.7 million (Innovation York, 2018).

KMb has also been a leader in developing knowledge mobilisation across Canada. York has been the lead institution for Research Impact Canada, which is Canada's knowledge mobilisation network involving 18 member-universities. KMb has also delivered a knowledge mobilisation course to spread understanding of what this kind of work means, and developed tools such as Research Snapshots (lay summaries of academic research outputs that have provided a template for over 10 partner organisations and project teams. The office also contributed to 17 publications focused on knowledge mobilisation, and in 2012 won a Best Practices Award from the Knowledge Economy Network, which is based in the European Union. Dr. David Phipps, who has been a key leader for KMb, was named the most influential knowledge mobiliser in Canada in 2011 and 2012 and received a Queen Elizabeth II Diamond Jubilee Medal in recognition of his leadership in this area (PrevNet, n.d.). Phipps, who was recently promoted to Assistant Vice-President, Research Strategy & Impact, routinely works with international partners to examine more comprehensive models of impact in research, arguing that true impact happens at the level of the end user.

3.2.2 Empowering those with Vulnerable Housing, Mental Health Challenges and/or Addictions

A major focus of much York research activity is on people who would be considered among the most vulnerable and marginalised in Canadian society: those in vulnerable housing, and those suffering from mental health challenges and addictions.

Homelessness is a large and growing problem in Canada. It is estimated that on any given night, 35,000 Canadians experience homelessness. In a single year, an estimated 235,000 Canadians will have experienced homelessness. According to a 2016 study, over 40% of participants first experienced homelessness before they turned 16 years old. Street youth suffer from significant health concerns – their rates of STIs and blood-borne diseases is 10 to 12 times higher than non-homeless youth. Mental illness contributes to homelessness and is also aggravated by homelessness. Between 30% and 35% of homeless people have mental health issues, with this rate as high as 75% among homeless women. Between 20% and 25% of those experiencing homelessness suffer from both addiction and mental illness (Rech 2019).

Indigenous peoples are vastly overrepresented in homelessness. They account for between 28% and 34% of the homeless population, but only 4% of Canada's total population.

The Canadian Observatory on Homelessness (COH) is based at York University. The COH evolved from a 2008 SSHRC funded project called the Canadian Homelessness Research Network, which continues to this day and involves researchers well beyond York University (COH, n.d.). COH activities aim not only to support research, but to help improve capacity and decision-making among service providers and policy-makers. An area of emphasis has been building the evidence base

pertaining to causes and consequences of homelessness. This has led the COH to partner with the Canadian Alliance to End Homelessness to produce State of Homelessness in Canada reports that examine the prevalence of homelessness over time. The COH also conducted the largest pan-Canadian study on youth homelessness, involving a 1,100-respondent survey. Finally, the COH hosts the Homeless Hub, which is the largest online research library on homelessness in the world, with almost 30,000 individual resources.

Under the Network of Centres of Excellence of Canada programme, York University received \$17.9 million for Making the Shift Inc. – A Youth Homelessness Social Innovation Lab – a project led by the COH. The Making the Shift (MTS n.d.) project aims to enable stronger evidence-based strategies to reduce youth homelessness, to foster community partnerships and coordinated care to support homelessness prevention, to improve the effectiveness of public spending in this area, and to build a more equitable society, including for marginalised youth. This single five-year grant accounted for almost 40% of all partnership research funding for York University in 2018-19.

Linda Juergenson of the School of Nursing has led another important project examining social determinants of health and how nurses can better serve marginalised community members. Special areas of focus include marginalisation in the response to HIV/AIDS, tackling stigma surrounding opioid use, and improving the public health response to tuberculosis in Canada's North – this last issue being intimately related to the quality of housing (Faculty of Health 2020a). In another initiative, Professor Yvonne Bohr has established a walk-in infant clinic for mothers and other caregivers to drop in and speak to a specialist in infant mental health when they are having difficulty with their baby crying – with the intent of providing support for parents who are overwhelmed (Research in the Faculty of Health 2020).

Professor Farah Ahmad is another York researcher working in this area. She won an Ontario Early Researcher Award worth \$140,000 in 2014 and millions in other funding from CIHR as a principal or co-investigator for work developing an eHealth primary care interventions to help efficiently address health disparities, with a special focus on intimate partner violence and mental health challenges. Following a successful randomised control trial and qualitative testing with patients, the concept has been transferred to Community Health Centres serving vulnerable communities (Faculty of Health 2020b). A KMB initiative also facilitated research support for an initiative involving York region domestic violence service providers and the Ontario Ministry of Community and Social Services (MCSS), which led to the creation of an evaluation framework addressing service provision in areas of family violence that MCSS adopted (Innovation York, 2017). The framework allowed for easier data tracking, while the project supported the development of a model for hub services that permitted significant increases in service provision and efficiencies.

Outside of research work, Osgoode faculty and students have been leaders in supporting those experiencing poverty and vulnerable housing through the Parkdale Community Legal Services (PCLS) clinic, which works on issues of housing; social assistance, violence and health (SAVAH); immigration; and workplace challenges. The clinic was one of four pilot projects made possible by the Legal Aid Act of 1966, and formed the model for 75 other clinics by 2005. Osgoode Law School provides core funding to support the clinic to reflect its commitment to the community and to providing invaluable clinical opportunities for students. In 2018-19 alone, PCLS supported community members to speak out for their rights in over 2,300 legal cases. The clinic assisted over 850 households with housing concerns, most of which pertained to threats of eviction which can be highly disruptive to tenants and their children (Desmond 2016) and helped workers to recover \$574,482 in unpaid wages. SAVAH opened 400 cases, with some of its leading work focused on

protecting victims of violence by expanding legal interpretations of remedies at the Criminal Injuries Compensation Board, and supported efforts to tackle the opioid crisis by successfully arguing for a would-be safe-consumption site.

Osgoode Hall Law School also supports the Community Legal Aid Services Programme (CLASP) which is based at York and serves the Northwest of Toronto, in particular the Jane and Finch community. Law and social work students participate in the programme. In addition to general forms of assistance similar to those provided by the PCLS, CLASP offers weekly ID clinics and tax dispute clinics to help ensure community members can access public supports to which they are entitled. The Osgoode Mediation Clinic also provides various forms of conflict resolution support to the community, including support to families and various forms of free community training.

Support for the legal aid clinics is not the only area of activity at York with regards to access to justice. Tier 1 York Research Chair in Human Rights and Access to Justice, Professor Lesley Jacobs, is a Fellow of the Royal Society of Canada for his contributions in Canada and abroad to access to justice. His current research centres on establishing an Access to Justice Research Lab that will incubate empirical research on access to justice in Canada.

3.2.3 Engagement with the Jane and Finch Community

York University has taken a strategic, hyper-local approach to community engagement by investing time and resources in the Jane and Finch community. Since the 1970s, Jane and Finch has been a predominantly low-income, high-density residential neighborhood, which is one of the city's most visible-minority concentrated areas. The community has struggled with overcrowded schools, a spatial disconnection with the rest of the city and stereotyping from non-residents.

In our survey, one access student provided the following comment: *I chose to attend York University because I live around the community, specifically the Jane and Finch community. I went to high school outside the community and I really missed the diversity and the support people have for one another. In addition, through the various clubs and services at York, I have the opportunity to give back the community that has shaped me into the person I am today.*

York University has partnered with TD to create the Community Engagement Centre (CEC), which seeks to foster equitable and mutually beneficial collaborative research and partnerships to serve the Jane and Finch neighbourhood. The CEC's core activities are fostering innovation in teaching and learning through community experiential learning opportunities; promoting post-secondary attainment among residents of the community; enhancing the capacity of York faculty, students and community partners to collaborate on community-based research; and providing a coordinating institutional structure to respond to community requests and opportunities for collaborations. The Centre has three core staff who are all York employees but come from the local community, and a much wider team of interns and volunteers.

The CEC has undertaken research and engagement activities surrounding infrastructure expansion, gentrification, and displacement, as well as pathways to post-secondary education, like Newcomer Education and take kids to work events. For Newcomer Education, the CEC organises presentations in high schools and assistance for students' applications, followed by mentorship when students are enrolled at York. In 2020, York introduced a Jane-Finch Student Innovation Hub on

Keele Campus to give students a space for study groups, tutoring and other services, to build upon the SBL programme in helping students to more successfully navigate university life (yFile 2020c). Alumni from the local community often lead many of York's community engagement activities.

The CEC's Success Beyond Limits (SBL) programme aims to reduce the impact of systemic barriers on educational achievement, and which started as a Grade 8 transition initiative in 2006. In addition to a six-week summer programme on York campus and an on-site youth space at Westview Centennial High School during academic year, SBL also has initiatives that provide mentoring, employment, and leadership opportunities for Jane and Finch youth.

York's Community efforts in this part of Toronto are by no means limited to the CEC. The Black Creek Community Health Centre (BCCHC) has a historical partnership with York University, specifically its Health Sciences, Kinesiology, and Social Work programmes which have sent professors, graduates and students to work at or with the BCCHC.²⁶ The BCCHC serves a high demand area, with a vulnerable population that includes many people without immigration status – it served 9,027 clients through 41,275 one-on-one appointments and 17,229 primary care appointments in 2018-19 (BCCHC 2019). The clinic has focused a lot on chronic disease management addressing issues of diabetes, COPD and mental health, and York students and alumni for instance have helped in these efforts through the development of a health maintenance programme. The York Faculty of Education is also partnering with the BCCHC and Promoting Education and Community Health (PEACH) to conduct research and evaluate a peer mental health programme designed to support Black youth in Jane and Finch who are not in education, employment, or training. Additionally, as part of the Advanced Credit Experience (ACE) programme in Jane and Finch discussed earlier, first-year Bachelor of Education students can undertake a placement in Jane and Finch, to gain meaningful, first-hand teaching experience with a “community-centric and urban education lens”, while fulfilling the required “studies in communities and their schools” component of their academic programme.

The York University Faculty Association (YUFA) also sponsors a number of projects in the Jane and Finch Community. YUFA has a mandate to create alliances on social justice issues. In this, one of its strongest allies is Jane Finch Against Poverty (JFAAP), a locally led, grassroots coalition that emerged in 2008 amidst a demonstration in support of the International Day for the Eradication of Poverty. YUFA-CP has supported JFAAP campaigns, including: Toronto Strong Neighborhood Strategy 2020; Campaign to Raise the Minimum Wage; the International Day for the Elimination of Racial Discrimination; Mayworks at the Yorkwoods Library Theatre; the International Day for the Eradication of Poverty; and a panel on Community Assessment of Police Practices in Jane/Finch.

In terms of advocacy and research, the YUFA Community Projects Committee facilitates collaborative research to enhance the effectiveness of its community partnerships. For instance, it supported graduate students to carry out focus group and individual interviews for an evaluation of Success Beyond Limits (SBL) (see above). Similarly, it also supported a focus-group study entitled Fortress York?: The Impact of Racial Bias and Neighbourhood Stigma on Educational Experiences & Outcomes, aiming to assess impacts of stigma on York undergrads from Jane and Finch.

Universities often find it challenging to ensure that their relationships with underserved communities are both respectful and mutually beneficial. Though some in the community have raised concerns in this area over the years, from our interviews, it seems clear that York has taken its

²⁶ Black Creek is another name for the Jane and Finch area.

responsibilities seriously and taken various steps to improve its approach in this area and overall is having a very positive impact. The Jane and Finch Community Research Partnership Committee has been working to facilitate ethical research relationships between York and the community. Furthermore, the CEC is creating an ethics protocol for York with respect to best practices for community-engaged work, and has been working with York University library to help community members to more easily access research on their community.

3.2.4 Other Activities that Benefit Marginalised Youth

Many York University researchers and other members of the university community focus their work on vulnerable and at-risk youth. Indigenous and Black youth face particular equity gaps. In 2016-17, the Indigenous share of admissions to correctional facilities was 46%, meaning that nearly half of all youth in correctional facilities are Indigenous, with the trend heading upwards. There remains a significant gap in high school graduation rates between Indigenous and non-Indigenous youth equal to 32.5 percentage points over four years and 26.3 percentage points over five years. Black youth similarly suffer from similar dropout challenges, with their dropout rate 15 percentage points higher in the TDSB than for white students (Wellesley Institute 2019). Black youth in the TDSB are also 17 percentage points less likely to apply for post-secondary education. Pulling these patterns together, Black youth in 2006 were less likely than the rest of their counterparts to have achieved a post-secondary diploma, certificate, or degree by 2016 (Turcotte 2020).

Fortunately, many within the York community are dedicated to addressing the challenges faced by marginalised youth in order to advance a more equitable society. The Jean Augustine Chair in Education, Community, and Diaspora (JACECD) in the Faculty of Education aims to advance access, equity and inclusivity to education through community engagement and collaborative action. The JACECD collaborated in the development of Peel District School Board's "We Rise Together Action Plan" to address anti-Black racism and the achievement gap among the Board's Black students, and has partnered with the TDSB to present the *Black Student Success and Excellence: Youth Participatory Action Research Summer Institute*.

Elsewhere in the region, the Faculty of Education and the York Region District School Board launched a pilot project in 2008 aimed at expanding the dialogue between linguistic and cultural minority families and their children's public schooling. The project engaged with evidence suggesting that marginalized populations were at a greater risk of underachieving and dropping out of school. It was based at Armadale Public School in Markham, ON and was supported by incentive grant funding from the Knowledge Mobilization Unit at York University.

Not all of York's work in this field is rooted in specific local communities. Professor Uzo Anucha is a Tier 2 York Research Chair in Youth and Contexts of Inequity and is also the Provincial Academic Director of the Youth Research and Evaluation eXchange (YouthREX) (York University Research & Innovation 2020). The Ontario government has provided millions of dollars in funding for YouthREX since 2014 to support capacity-building and knowledge exchange in the grassroots youth services sector by gathering and disseminating research and evaluation evidence. Since 2016, YouthREX has provided 1,146 curated and created resources, reached over 3,400 participants through webinars, provided critical youth work certificates to 233 learners, and provided online programme evaluation certificates for 655 learners (Youth Research and Evaluation eXchange 2019).

In another initiative, Psychology Professor Yvonne Bohr has partnered with five communities and four agencies in Nunavut to develop an Indigenous-focused fantasy video game focused on supporting mental wellness in Inuit youth, who as a community experience high rates of stress, anxiety, depression and suicide. The interactive game aims to use Inuit cultural values to create a familiar context, and cognitive behaviour therapy principles to help youth regulate their emotions. Another set of initiatives, designed by Professor Debra Pepler have centred around social issues affecting children and youth, and especially bullying. In particular, Pepler's Promoting Relationships and Eliminating Violence Network (PREVNet), created in 2006, now includes 120 researchers, 150 graduate students and 62 youth-serving organisations from all across Canada. Its aim is to help stop violence caused by bullying to help children grow up "happy, healthy and safe" (yFile 2020a).

3.2.5 Supporting Refugees and Other Migrants

Refugees and other migrants form another group that has received considerable attention from York researchers. In 2018, Canada welcomed 28,100 out of 92,400 refugees resettled around the world. That year, Canada also gave citizenship to the second largest number of people who had arrived as refugees – 18,000 (Canadian Press 2019). Among municipalities, Toronto resettles the most refugees. Significant numbers of refugees reside elsewhere in Southern Ontario as well. Thousands make their new homes in Mississauga, Kitchener, and Hamilton (Duffin 2019). Challenges persist in Canada's settlement of refugees, however. They have relatively lower skills than other immigrants to Canada and many have additional needs relating to childcare, mental health, and finances that affect their adaptation to their new environment (Baskanderi et al., 2020).

York University has hosted the Centre for Refugee Studies (CRS) since 1988, demonstrating a longstanding research commitment to refugee issues. CRS is an interdisciplinary research institute focused on advancing the well-being of refugees and other displaced people through research, education and policy engagement. At its inception, the CRS was only the second centre of its kind in the world, following the University of Oxford, and it quickly gained prominence, for instance being designated as a Canadian International Development Agency (CIDA) Centre of Excellence in 1991.

Professor Christopher Kyriakides is a Tier 2 Canada Research Chair in the Faculty of Liberal Arts and Professional Studies. His research examines racialization and racism, and newcomer settlement. The largest project Kyriakides is involved with is titled *Civil society and the global refugee regime: Understanding and enhancing impact through the implementation of global refugee policy*, which has \$3.5 million in funding, including a \$2.5 million SSHRC Partnership Grant. The project is examining global refugee policies and the role of civil society avenues to improve refugee outcomes across seven different countries. Another project with eCampusOntario funding, SMARTT – Social Mobilities Application for Refuge, Trust and Transition, is seeking to develop online interventions to support newly arrived Syrian refugees by providing them a useful tool and empowering them to design and use digital technologies that meet their needs. One more initiative is examining patterns of Syrian refugee settlement in rural Northumberland County, Ontario with support from SSHRC and in collaboration with the local Member of Parliament (eCampusOntario 2020).

Psychology Professor Michaela Hynie is leading a team of 20 researchers who are participating in the five-year pan-Canadian study: *Refugee Integration and Long-Term Health Outcomes in Canada*, with \$1.35 million in support from CIHR. The project is assessing refugees' integration levels from 2016 to 2021 by tracking their social connections, employment, housing, social services usage, and sense of

belonging. Hynie explains that “we have very little longitudinal data on the integration of refugees in Canada. By monitoring their long-term physical and mental health, we can identify what improvements might need to be made to best meet newcomers’ needs (Faculty of Health 2019).

Professor Farah Ahmad, mentioned earlier, also focuses much of her research on healthcare for vulnerable immigrants in Canada. She piloted her eHealth tool with Dari/Farsi speaking Afghan refugees, for instance. She has also undertaken extensive work on breast cancer screening among women of minority ethnicity and successfully piloted an intervention using ethnic newspapers to promote screening which has been replicated by the Cancer Care Ontario health promotion team (Faculty of Health 2020b).

Additionally, York University also hosts the Dahdaleh Institute for Global Health Research (DIGHR). The DIGHR was established in 2015 through a \$20 million initial endowment from York University alumnus Victor Phillip Dahdaleh and is led by Dr. James Orbinski, former International President of Médecins Sans Frontières (MSF – Doctors Without Borders). The Institute has 18 affiliated researchers, 13 interns and five other staff including Orbinski, which represents considerable combined capacity. The DIGHR is not focused explicitly on refugees, but one of its three research themes is Global Health and Humanitarianism. Work under this theme centres on improving the public health effectiveness of humanitarian response and understanding the root causes of large-scale suffering and the role of the humanitarian sector. Research projects have studied chemical water quality and malnourished child health, improving the use of data in humanitarian response, and developing a Safe Water Optimisation Tool (SWOT) for humanitarian agencies, all in collaboration with operational humanitarian organisations (Council of Ontario Universities 2015, Dahdaleh Institute 2020).

The Borderless Higher Education for Refugees Project (BHER) aims to provide training for teachers who are working in refugee camps with little or no formal qualifications, through a unique programme that brings post-secondary education directly to where refugees live. Professor Don Dippo is the co-lead on the project, and members of York’s Faculty of Education travel to the camps to teach courses. BHER training helps teachers improve their job prospects in the camps, in local areas, and upon resettlement or repatriation, while also benefitting the students they serve. The project is indirectly impacting the learning opportunities of more than 18,000 students in elementary and secondary education and up to 1,000 students in higher education (BHER 2020, Faculty of Education n.d.). For instance, in October 2015, 59 students living in the world’s largest refugee camp in Dadaab, Kenya, received York University Certificates of Completion in Educational Studies. One of BHER’s mandates is to improve equity in access to education, so that young women have greater access to employment opportunities and may take on active roles in local decision-making processes, and women make up a large share of programme participants (yFile 2015).

Professor Sapna Sharma founded SEEDS, a programme to engage Syrian and other refugee children new to Canada with additional educational opportunities in science and math.²⁷ SEEDS has provided science outreach for more than 350 refugees from Asia and Africa. Engaging activities have included trips to the Zoo, Ripley’s Aquarium, the Royal Ontario Museum, and participating in science experiments at Science Rendezvous (Faculty of Science 2019).

²⁷ Professor Sharma is also a prominent researcher, as a Tier 2 York Research Chair in Global Change Biology and a 2017 Ontario Early Researcher Award winner.

3.2.6 Advancing the Rights and Well-Being of Persons with Physical, Mental and/or Intellectual Disabilities

Finally, considerable research and engagement work at York University has focused on persons with physical, mental and/or intellectual disabilities. According to StatsCan, 22% of Canadians over the age of 15 have one or more disabilities. Disabilities relating to mental health are more prevalent among the younger population, while women are four percentage points more likely than men to have a disability (Morris, Fawcett, Brisebois, and Hughes 2017). Excluding mental health, the prevalence of disability increases with age, reaching as high as 47% among those above the age of 75. Population aging therefore means the prevalence of disabilities is only set to rise.

Professor Marcia Rioux over time has secured nearly \$11 million in funding from governments in Canada, Sweden, and parts of Asia for efforts to provide greater support to persons with disabilities. Rioux is a co-founder of Disability Rights Promotion International (DRPI) along with the former UN Special Rapporteur on Disability. DPRI is a comprehensive system to monitor discrimination against the one billion people globally who have a disability, which also provides training and tools to grassroots organisations and volunteers in 60 countries. Roux has published her findings to date in *DRPI: The People's Indicators*, a book for the UN to help promote adherence to the Convention on the Rights of People with Disabilities. Dr. Roux also studies media coverage of disability (DRPI 2020, School of Health Policy & Management 2020, Faculty of Health 2019).

Another leading York researcher is Professor Jonathan Weiss of the Faculty of Health. He is both the CIHR Chair in Autism Spectrum Disorders Treatment and Care Research and a Tier 2 York Research Chair. His research focuses on the prevention and treatment of mental health problems among people with autism and/or intellectual disabilities. For context, research involving Weiss has shown that half of young adults aged 18-24 with autism spectrum disorders have at least one psychiatric diagnosis, compared to just 20% of the general population at this age (ICES 2017, Faculty of Health 2019). In Fall 2019, the Autism Mental Health Promotion (AMHP) project co-led by Professor Weiss and external colleagues received \$599,300 in funding from the Public Health Agency of Canada's Autism Spectrum Disorder Strategic Fund. Weiss is leading the project's first component, focused on developing mental health literacy resources for autistic adults, families and service providers, which should help to prevent mental health problems, identify self-help strategies for mild-to-moderate problems, and explain to others how they can help (yFile 2019bI).

Considerable research at York University focuses on the elderly, who often experience various forms of impairments. The SSHRC Partnership for Age-Friendly Communities within Communities, which is based at York, is a seven-year \$2.5 million project studying promising practices for seniors taking into account gender, language, cultural, racialization, poverty, indigeneity and sexual orientation. In Fall 2019, York University and the Alzheimer Society of York Region announced a \$2.26 million partnership to study Alzheimer's and dementia care programmes, with funding from the Carswell Family Foundation (yFile, 2019f). The partnership supported the creation of the Helen Carswell Research Chair in Dementia Care (with \$1 million in additional funding from York University), a programme of evaluation and knowledge dissemination efforts as a collaboration between the Chair and the Alzheimer Society of York Region and graduate research fellowships in dementia care. Professor Ellen Bialystok, Walter Gordon Research Chair of Lifespan Cognitive Development, leads a neuroscience laboratory focused on the neurological effects of bilingualism.

Her research has shown that bilingualism is protective against Alzheimers, among other important findings that even address childhood learning.

Beyond these research activities, members of the York University community have also sought to support persons with disabilities through the ARCH Disability Law Centre (ARCH). ARCH is a specialty legal clinic practicing exclusively in disability rights law, which represents individuals and organisations in precedent-setting and systemic cases while also undertaking legal education and community development activities. In 2018-19, ARCH provided direct legal assistance to over 2,000 individuals across Ontario, while its Respecting Rights workshops had over 900 attendees and its rights education activities over 3,500. ARCH's leadership and community partners made submissions to Parliament and Senate which resulted in significant amendments to the *Accessible Canada Act*, including most significantly accession to the Optional Protocol of the Convention on the Rights of Persons with Disabilities (ARCH Disability Law Centre 2019).

Since 2012-13, between 10 and 12 law students each year have participated in Disability Law Intensives at ARCH, working at the clinic for the full academic year to pursue activities relating to both direct client services and law reform. It is not uncommon for these students to work for ARCH after graduation. Osgoode also provides funding for student placements, policy research, and articling positions. Beyond Osgoode, ARCH has a relationship with the York University Critical Disability Studies department, involving collaboration on lectures, research and policy projects. Social work connections with ARCH also provide value. Many members of the ARCH Board of Directors are closely affiliated with York University as either faculty or students (ARCH Disability Law Centre 2019, School of Health Policy & Management 2020).

3.3 Other Research and Engagement Activities to Build a Better World

Beyond research and engagement work focused on specific traditionally disadvantaged groups, other important work has tackled challenges relating to improving environmental stewardship and preserving and enhancing cultural diversity.

3.3.1 Strengthening Environmental Stewardship and Resilience

Another clear area of focus at York has been on environmental stewardship.

Many of the benefits of a healthy environment are obvious – clean air and drinking water, for example – but many are not. Looking at the consequences of environmental mismanagement underlines the fundamental importance of environmental stewardship. Such mismanagement is associated with accelerating global climate change as well as global conflict and insecurity. Responsible environmental stewardship, particularly on the part of business, is central to preserving our environment and ensuring a livable world for future generations.

The Advanced Disaster, Emergency and Rapid Response Simulation (ADERSIM) is a research and training centre based at York University, which seeks to evaluate and drive improvements in disaster and emergency planning and response in Canada and around the world (ADERSIM 2020). Canada Research Chair in Industrial and Applied Mathematics Jianhong Wu leads the ADERSIM, working in collaboration with faculty from across York University and other institutions. Recent projects

have sought to develop a framework for managing volunteers in the event of major disasters and emergencies in Ontario (in partnership with the NGO alliance of Ontario and the City of Brampton), a rail safety toolkit (with the support of Transport Canada), etc. In 2019, collaboration between Professors Solis and Asgary of ADERSIM and the City of Vaughan's Fire and Rescue Service won the Bronze Innovative Management Award from the Institute of Public Administration of Canada for helping to generate modelling and simulation tools to improve the performance of fire rescue services (ADERSIM 2019).

Another professor involved in the ADERSIM is Dr. Jane Hefferman, who is a Tier 2 York Research Chair and director of the Centre for Disease Modelling (CDM), whose work focuses on better predicting the spread of disease to improve prevention and treatment (York Institute for Health Research n.d.). One recent CDM project developed an Antimicrobial Resistance Diversity Index (ARDI), aiming to better inform public health initiatives and infection control.

The Dahdaleh Institute for Global Health Research (DIGHR) also has an area of focus centered on planetary health, connecting environmental challenges such as climate change to human health. Work has concentrated on the effects of climate change as well as strengthening food security in Canada, for instance, especially in Canada's North. This work is in early stages but very promising for important future impacts (Dahdaleh Institute 2020, Faculty of Health 2019).

The recently re-named Faculty of Environmental and Urban Change is focused on conducting education and research with impact. The Sustainable Energy Initiative (SEI) is an engine for this work, seeking to provide research and analysis in support of environmentally sustainable policies and projects, support teaching and student research, build and strengthen partnerships, and provide learning opportunities for professionals. The SEI has notably generated various submissions to government. Co-Chair of the SEI Mark Winfield is author of Blue-Green Province: The Environment and Political Economy of Ontario. Since 2019, the Faculty has been the global datacentre for the National Ecological Footprint Accounts; an effort to appropriately track and communicate data on the environmental effects of societies and individuals around the world.

A number of initiatives have focused on work with local government and community organisations. Various faculty members have been working with the Toronto and Region Conservation Authority (TRCA), the Town of Caledon and the Region of Peel to develop the West Bolton Sustainable Neighbourhood Action Plan. The plan is focused on developing a network of trails and destinations while supporting the town's broader Community Climate Action Change Plan. Professor Rod McRae, with assistance from KMB and the United Way York Region, assisted in the development of the York Region Food Charter (YRFC) in 2012, with support from students and community organisations organised in the York Region Food Network (YRFN) (Phipps et al., 2015). The charter provides guidance for the development of food related policies and programmes in the region and has been adopted by four out of the nine local municipalities. Since the creation of the YRFC, collaboration has continued with the YRFN to support stronger food policies (Innovation York, 2016). The work has leveraged over \$375,000 in funding for initiatives and secured an Ontario Centres of Excellence grant in 2013 to develop an Aquaponics lab as a social venture.

Deborah McGregor, Associate Professor and Canada Research Chair in Indigenous Environmental Justice, has been working at York since 2015 as a cross-appointment between Osgoode Hall and the then-Faculty of Environmental Studies. Her research work is extensive and tackles important challenges relating to environmental protection, governance and Indigenous knowledge. She is currently the primary investigator for a SSHRC Insight Grant addressing Indigenous environmental

justice and a SSHRC Insight Development Grant addressing Indigenising the First Nations land management regime, along with partners at York and other universities. Professor McGregor remains actively involved in a number of Indigenous communities as an advisor and community-based researcher (Faculty of Environmental Studies 2020, Osgoode Hall Law School 2020b).

3.3.2 Preserving and Advancing Cultural Diversity

York researchers and other units have engaged in a series of initiatives aiming to preserve and promote diverse cultural heritage in Canada.

Preserving diverse cultural heritage is an official government imperative in Canada. The Canadian government's official multiculturalism policy aims to ensure the full and equitable participation of all people in the continuing evolution of Canadian society. As was highlighted by the TRC, cultural preservation is especially relevant for Canada's Indigenous history. There is also a strong interest in protecting the cultures that immigrants have brought to Canada, both today and in the past. The cultural preservation work being done at York both contributes to and preserves the country's composite national identity.

Tier 2 York Research Chair in Inuit Cultural Mobilisation Anna Hudson led the six-year \$3.5 million SSHRC-supported collaboration *Mobilizing Inuit Cultural Heritage* (MICH), alongside a host of partners including Qaggiavuut, the Nunavut Arctic College, and the Nunavut Department of Education. MICH aimed to recover, preserve, document, facilitate and disseminate Inuit knowledge, culture and creativity through a multi-media multi-platform project which employed a dozen Inuit and non-Inuit community members. MICH helped in the launching of *SakKijajuk*, the first Inuit Fine Art and Craft Exhibition from Nunatsiavut, as well as *Ahqabizju* a granite sculpture by artists Ruben Komangapik and Koomuatuk (Kuz Curley) on the York Keele Campus.

Finally, the Clara Thomas Archives and Special Collections Department of the Library has pursued numerous initiatives to help preserve and share the stories of a variety cultural groups. For instance, York University Library is preserving the records of the Mariposa Folk Foundation, which runs an annual festival and has sought to preserve Canadian folk art. The Foundation's board includes former fine arts faculty members which facilitated the institution's collection. Other projects have sought to preserve historical materials relating to the Portuguese-Canadian, Greek-Canadian, Italian-Canadian and Coptic-Canadian communities, in collaboration with community organisations (York University Libraries n.d.).

3.4 Summary

York University graduates extremely active in the community, having created many new charities and leading GTA universities in terms of the production of new works of art/creation. This is a tribute to York students and their commitment to community, but also to York University itself for having played a role in inculcating such commitment and helping students to learn how to put their talents into action on behalf of their communities. But York's commitment to community is not expressed solely through its graduates. Every day, in multiple ways, York is engaged with local communities to develop increased resiliency, and with communities around the globe to work on problems in health and the environment.

4. A Driver of Economic Growth

We can attribute to York causal economic impact in three ways: alumni who accessed post-secondary education or university education because of York, alumni who immigrated to Canada because they studied at York University, and spending in Canada by York's international students. Adding these effects together, we estimate that York was directly responsible for \$2.24 billion in economic output and 10,569 jobs in Canada in 2018, with these figures expanding to over \$4 billion and 13,480 jobs when accounting for indirect and induced effects. An upper bound estimate of attributable tax revenues generates a figure of \$913 million, well in excess of the \$582 million spent on York by governments. Using a more traditional approach less able to account for causality, the total spending footprint of York, its students and its alumni was \$23 billion in 2018, with this expanding to almost \$44 billion when accounting for indirect and induced spending. In addition, York graduates have started over 100,000 businesses since graduating, with one in five entrepreneurs attributing their desire to start a business as stemming from their experiences at York.

4.1 Areas of Measurable Impact: Access, Immigration and International Students

There are forms of economic activity that York can claim more causality over, based on some reasonable measure of counterfactuals. This improves upon traditional forms of impact analysis.

The most important of these areas in terms of long-term impact is in the macro effects of expanding post-secondary access. We outlined these effects in Section 2.2.2.

Another benefit of York is that many of its students may immigrate to Canada or otherwise move to Canada after graduation. In the alumni survey, 10% of respondents indicated that their primary residence before attending York was outside of Canada, and 65.5% of these alumni were now living in Canada. Even more importantly, we asked how many of these alumni would have been unlikely to be living in Canada if not for attending York, meaning that York played a crucial role in their residency in Canada. The share was 44.2%, which across all York alumni translates into approximately 7,277 people aged 25-64 living in Canada who would not if not for attending York. The average incomes of these alumni were \$128,080 in 2018. This translates into a total direct output impact of \$932,038,160 in 2018, which would correspond to \$1,789,513,267 when including indirect and induced spending. In terms of jobs, the employment rate of these alumni was 92.7%, meaning that these alumni would include 6,747 workers, with a further 63 induced jobs.

Finally, a third important area of economic impact is in attracting international students.²⁸ There were 8,823 visa students attending York University in 2018-19. We estimate that the total direct expenditures of these students, including fees and other student spending for living costs net of scholarships and bursaries, was equal to \$238,340,909 (82% of this taking the form of tuition).²⁹

²⁸ Educating international students is akin to an export industry, so these expenditures come closest to pure economic impact, only we cannot determine what share of these international students might have studied at another higher education institution in the GTA, Ontario or Canada if not at York, and so these figures provide an upper range. In other words, the counterfactual analysis for this element is weak, so this is not as strong an assessment of impact as for the access and immigration elements we just discussed.

²⁹ These figures exclude spending on flights.

Indirect and induced spending was equal to \$386,042,713. These expenditures supported 2,067 jobs directly, and 2,494 jobs when accounting for indirect and induced spending.

Adding these figures together, we can pull together some baseline estimates of York’s causal economic impact in 2018. We recognise both that survey data cannot prove causality conclusively and that there are many dimensions of York’s activity that we are leaving out – though we suspect we have captured the most significant effects of York on economic activity. The results of this analysis are indicated in Table 6. Through accessibility, the downstream effects of having facilitated immigration to Canada and international student education, York could be directly attributed \$2.34 billion in spending and 10,569 jobs in 2018. The attributable direct annual output effects of York exceeded its 2018 operating expenditures well more than two-fold. Including indirect and induced effects, York’s impacts in these areas increases to over \$4 billion and 13,480 jobs.

Table 6 Measurable economic effects of York University, 2018

	Economic Output		Jobs	
	Direct	Direct, indirect and induced	Direct	Direct, indirect and induced
Access	\$1,138,056,496	\$2,185,068,472	1,621	2,918
Immigration	\$932,038,160	\$1,789,513,267	6,747	7,810
International Students	\$268,708,544	\$36,195,458	2,201	2,752
Total	2,338,803,200	\$4,010,777,197	10,569	13,480

We can also calculate the tax implications at least of this *direct* economic activity. Firstly, we calculate a rough measure of income taxes paid based on the earnings above under the access and immigration categories – it is too complex for our purposes to try to calculate figures for international students’ work earnings, which would be modest in any case. Our income tax measure provides an upper bound, calculating all income as employment income with no deductions or credits, and basing figures on the average only without accounting for the distribution.³⁰ Table 7 presents the results, which indicate that aggregate income taxes paid could be in excess of \$700 million, again without accounting for indirect or induced effects.

Table 7 Upper bound estimate of income tax revenues attributable directly to York's access and immigration effects, 2018³¹

	Per person			Aggregate		
	Federal	Provincial	Total	Federal	Provincial	Total
Access	\$12,771	\$6,957	\$19,728	\$271,090,533	\$147,683,955	\$418,774,488
Immigration	\$26,594	\$13,455	\$40,049	\$193,524,538	\$97,912,035	\$291,436,573
Total	NA			\$464,615,071	\$245,595,990	\$710,211,061

To this, we can add rough estimates of revenues from sales taxes, shown in Table 8. Assuming that the alumni in our access and immigration categories spent the Canadian household average on shelter and food purchased from stores for cities of one million or more (29.4% of total consumption) and equalling income to total consumption, we can again obtain rough upper bound

³⁰ We assume all the relevant alumni are in Ontario for purposes of these calculations. The source of our tax estimates is the 2018 SimpleTax calculator: <https://simpletax.ca/calculator-2018>

³¹ Federal tax revenues include payments for CPP and EI.

estimates of tax revenues.³² We can include approximate sales taxes paid by international students, removing expenditures on food and housing.

Table 8 Upper bound estimate of sales tax revenues attributable directly to York access, immigration effects and international student recruitment, 2018

	Per person			Aggregate		
	Federal	Provincial	Total	Federal	Provincial	Total
Access	\$749	\$1,199	\$1,948	\$43,168,095	\$69,068,952	\$112,237,047
Immigration	\$4,521	\$7,234	\$11,755	\$32,900,015	\$52,640,024	\$85,540,039
International students	\$224	\$358	\$582	\$1,976,176	\$3,161,881	\$5,138,056
Total	NA			\$78,044,286	\$124,870,857	\$202,915,143

Adding these figures together, as shown in Table 9, we estimate that revenues directly attributable to York University in 2018 equalled as much as \$913 million. While these estimates are again in many respects an upper bound, estimates accounting for indirect and induced effects would be even higher. By contrast, the university received just under \$425 million in government grants and contracts that year, while York students received \$157 million in governments grants through the Canada Student Loan Programme (CSLP) and the Ontario Student Assistance Programme (OSAP). Even taking our estimate of impact as an upper bound, our analysis suggests strongly that York’s direct economic effects just as a facilitator of access and immigration, and a magnet for international students, exceed the annual cost of directly subsidising the institution for government.

Table 9 Upper bound estimate of total tax revenues attributable directly to York access, immigration effects and international student recruitment, 2018

	Federal	Provincial	Total
Access	\$314,258,628	\$216,752,907	\$531,011,535
Immigration	\$226,424,553	\$150,552,059	\$376,976,612
International students	\$1,976,176	\$3,161,881	\$5,138,056
Total	\$542,659,357	\$370,466,847	\$913,126,204

We explored whether we might be able to quantify also effects in terms of savings for governments from improved health and lesser reliance on government services and supports, but the methods for pursuing such estimates that we identified are too imperfect for use. Regardless, we can confirm that access effects in particular would likely also bring savings for governments on top of tax revenues.

The important economic ramifications from access and immigration demonstrate the cumulative, long-term nature of York’s impact. In other words, the university’s impact mostly takes the form of dividends on earlier investments, rather than flow from current activities. If York disappeared today, economic activity based on international students would end immediately, but York’s effects in its graduates’ lives would only fade out over time as graduates aged out of the workforce. Without York, the GTA, Ontario and Canada would lose out considerably in the long-term.

York University also has effects on the distribution of economic activity and people within Canada. Among students in the control survey, only 24.5% reported that their primary residence before

³² Shelter expenses and most food expenses from stores are exempt from sales taxes. Figures are from the 2017 Survey of Household Spending - <https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=1110022601>. These are not perfect reflections of sales-tax-exempt expenses, but approximate.

studying at York was outside the GTA, but among these more than half (51.2%) indicated that they would have been unlikely or very unlikely to come to the GTA if not for their studies at York.

4.2 A Large Spending Footprint

Using more traditional methods of “impact” analysis, we can calculate the spending footprint of York University, its students and its alumni. This is the most common form of impact analysis undertaken by universities, but its causal basis is very weak as no counterfactuals are considered. Still, this provides at least a sense of economic activity at least affected by the institution.

The first factor in York’s footprint is spending by the institution itself, on salaries and on other costs. Next, we calculate students’ approximate spending on living costs – i.e. excluding moneys paid to York University to avoid double-counting as these are in turn spent by the university itself. Finally, we calculate alumni spending as reflecting their average incomes in excess of the incomes of high school graduates – controlling for age and gender.

The total direct spending footprint of York University, its students and alumni exceeded \$23 billion in 2018, with this expanding to over \$43.9 billion once indirect and induced spending are included. The bulk of this spending (\$21.75 billion in direct spending and \$41.77 billion adding in indirect and induced) relates to alumni earnings, which are the most tenuously related to York – unaffected by current activity and likely most vulnerable to counterfactual analysis. Student spending would account for \$376 million, but again students would be spending much of this money even were they not attending York. Direct institutional spending was equal to \$914 million, with indirect and induced effects raising the institutional spending footprint to over \$1.4 billion.

The total footprint would account for 18,327 direct, indirect and induced jobs. Most of these jobs (9,399) come from institutional spending, with 6,875 people employed directly by York University. Student spending would account for 6,000 direct, indirect and induced jobs. Finally, alumni incomes account for 2,918 jobs – a smaller figure despite their higher spending impact as outlined above because most of the higher spending effect is to amplify wages.

York has recently taken steps to try to amplify the community impact of its spending. Its Social Procurement Policy, passed in December 2019, aims to increase the number of job, apprenticeship and training opportunities that York facilitates for local community members, equity-seeking communities and Indigenous peoples. Social procurement will be moving forward through pilot projects, of which the construction of the new Markham Campus will be the most important. Under the new policy, \$3 million of the total \$45 million investment will be reserved for local purchasing from diverse entities, while various additional criteria have been set for project contractors. Additional efforts have sought to enable Indigenous caterers to serve the York community, and to facilitate access among social enterprises to different work on campus, starting with projects of under \$25,000. Clearly it is early days for this policy, but its promise is self-evident. York is among the first post-secondary institutions in Canada to pursue such an approach.

4.3 Dynamic Alumni

There are other indications of economic impact not captured in figures that we were able to pull together, in particular driven by alumni activities. Our alumni survey provided substantial evidence with regard to alumni involvement in entrepreneurship and innovation more generally. We will first discuss entrepreneurship among alumni, then other forms of engagement in innovation.

Entrepreneurship is an important driver of the Canadian economy. Nowhere is this truer than with so-called “gazelles,” young, high-growth, innovative companies that transform markets with radically innovative products, processes, and services (Wells and Hungerford 2011). Recognizing the considerable growth potential of entrepreneurial small and medium enterprises, in 2017 Canada’s federal government launched the \$1.2 billion Strategic Innovation Fund and \$950 million Innovation Superclusters Initiative to support business investment in research and development. A related initiative is the government’s Global Skills Strategy, which supports access to talent from around the world in order to allow the continued rapid growth of both new and established firms (Government of Canada 2017).

In our alumni survey, 31.2% of alumni ages 25-64 indicated that they had started a business at some point in their life, controlling for age and gender, with these respondents starting 1.7 businesses each on average. This translates into a remarkable 78,241 entrepreneurs among York alumni aged 25-64, 29,760 (38%) of whom have started their own business in the past two years.

For all estimates of the implications of this entrepreneurship in terms of enterprises, we have to assume that no businesses were started by multiple York alumni as partners – to the extent that some likely were, our figures are probably over-estimates. We would estimate that York alumni aged 25-64 have started as many as 129,766 businesses. Not all of these business are still active – an estimated 70,533 are. Fully 77.5% of entrepreneurs indicated businesses that they started had employed someone in the past 12 months, with these employing up to 478,105 people, or 7.1 people per active firm. Among those with active firms, 30.5% reported that they were growing in terms of the size of their workforce in the past 12 months, while only 8.8% had declining workforces.

Among entrepreneurs who employed workers, 61.5% said they employed people in the GTA, 12.7% people elsewhere in Ontario, 11.8% people in Canada outside of Ontario, and 19.3% people outside of Canada.³³ Among the 15 entrepreneurs employing the most people (9,706 in total), 11 indicated that they employed people in Canada and 12 indicated that they employed people outside of Canada.

Among alumni entrepreneurs, 21% agreed with a statement that they became an entrepreneur because they attended York University, suggesting that York University was instrumental to 16,491 entrepreneurs launching their ventures. Additionally, 30.2% of York alumni entrepreneurs said that their ventures had been more successful because they attended York University, equal to 23,641 more successful entrepreneurs.³⁴

Other surveys provide some sense of greater prevalence of entrepreneurship at York. In the 2018 Graduate Programmes Outcomes Survey, 12% of York respondents indicated that they both expected to be and subsequently were self-employed, compared to 10% on both measures across Ontario, a statistically significant difference. A higher share of these entrepreneurs also employed others by four percentage points. Respondents to the Ontario University Graduate Survey (OUGS)

³³ These figures may exceed 100% because entrepreneurs’ companies often employ people in multiple locations.

³⁴ Respectively 44% and 34% of entrepreneurs disagreed with these statements.

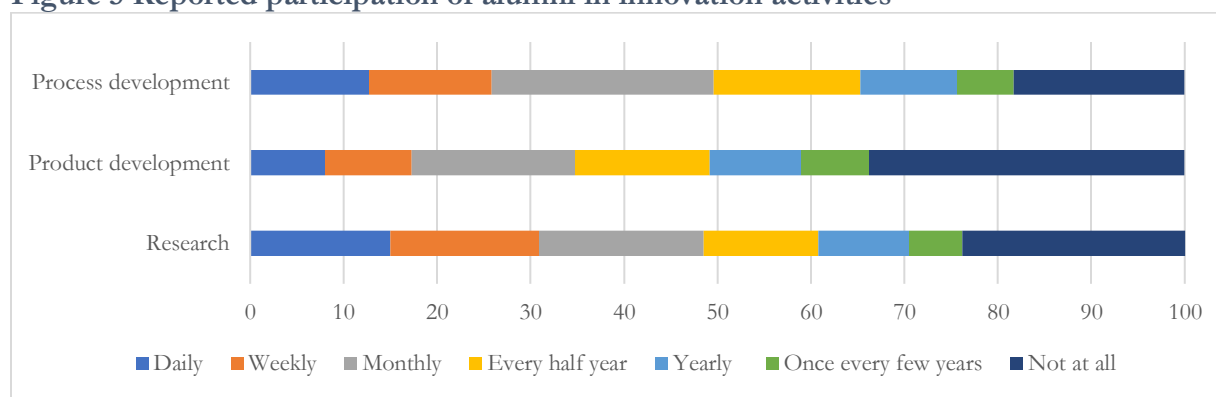
in the 2015 graduating cohort also reported slightly higher rates of self-employment both six months and 30 months after graduation.

These patterns of higher rates of entrepreneurship among York graduates could hypothetically have as much to do with the composition of the student body at York than the university itself. Immigrants who have been in Canada for 10 to 20 years are 21% more likely to own a private incorporated company with employees than the Canadian-born (Statistics Canada 2018). However, the alumni survey found no statistically significant differences by immigration status in various measures of entrepreneurship prevalence after controlling for age.

York University alumni are verifiably engaged in innovation beyond starting firms. Figure 5 shows the share of alumni who reported conducting research to gather evidence that can inform how their organisation completes its work, the development of new products and services, and the development of new processes for completing our organisation’s work to improve efficiency or quality. These are all direct activities of innovation. Over 30% of alumni conduct research at least weekly, while just over one-quarter engage in process development at least weekly and 17% do product development at least weekly.

Fully 3.51% of alumni have been part of a successful patent application, with these alumni on average participating in 2.4 patent applications each. Alumni who are immigrants are significantly more likely to have been part of a successful patent application (by 37%). They are also significantly more likely to agree and strongly agree that they were more effective in improving or developing new products, services or processes in their work because they attended York University (by 16%).

Figure 5 Reported participation of alumni in innovation activities



These data on general innovation provide limited insight, however, because they are not comparable with other institutions and offer little sense of causality. To try to get some sense of causality, the alumni survey asked to what extent alumni agreed with the statement: “I am more effective in improving or developing new products, services or processes in my work because I attended York University”. Thirty-five percent of York alumni agreed with the statement, while 23% disagreed.

One last point worth reiterating is the diversity of York’s student body, and consequently its alumni. As noted earlier, greater diversity is associated with stronger businesses and immigration is a critical driver of economic growth in Canada. This means our finding on York’s strengthening diversity and feelings of belonging has important economic implications.

4.4 Summary

There are impressive direct-to-private sector impacts associated with York's activities: between the increased income/expenditure of those individuals who would to have gone to university (or possibly any post-secondary institution) but for York, the expenditures of current international students and the expenditures of former students who have since become permanent residents or citizens, the impact of York University on the Ontario economy is equal to over \$4 billion, or about 0.6% of provincial GDP. Thinking about impacts in these ways is a reminder that institutional impacts – much like institutional reputations – are not the function of activity taking place in a single year, but rather the culmination of a series of investments over a long period of time. York has also had remarkable success in supporting entrepreneurs, with alumni aged 25-64 having started as many as 70,533 businesses. Fully 21% of alumni entrepreneurs indicate that they became entrepreneurs because of York, while 30% say their ventures have been more successful because of York.

5. The Future of Impact at York

York's current impact is more an artifact of the institution as it was decade ago than it is of the institution today. But York has changed enormously over time: it is today more focused on entrepreneurship, external partnerships and the more applied sciences than it has ever been. Over the next decade, these orientations will significantly alter the way York interacts with the community and grow both its economic and social impact.

Impact, by its very nature, is a lagging indicator. It reflects the long-term impact of what an institution did many years ago, not what it is doing today. Even the most promising ideas and activities cannot be measured until they have had some time to percolate through into society and the economy. As a result, what we have examined to date is largely a reflection of York as it was five, ten, or even twenty years ago.

And yet it should be clear to even the casual observer that York University has changed a great deal over the past decade, in ways that will likely have very significant impacts on its impacts over the coming years. The most obvious change, from an economic geography perspective, will be the opening of a campus in Markham over the next few years. One can certainly expect that over time, this will have integrative city-building effects much the same as the Keele Campus has had, though if anything the timeline for those effects to be felt might be much shorter given the presence of an incubator and the institution's entrepreneurial focus.

But three other areas of institutional change are perhaps collectively more important. The first is the general expansion of activity in the fields of health and engineering, both of which by nature have substantially greater interaction with external social and economic partners than do traditional arts and sciences, which have long been the mainstays of York's programme offerings. The second is increased support for entrepreneurialism and an expansion of the university's incubator activity, which promises significant new interactions between the university and young high-growth companies. And the third is increased emphasis on work-integrated learning for students, which one could reasonably expect to improve graduate outcomes. Between these three areas, we can expect the institution to significantly grow its economic impact in knowledge-intensive industries in ways that would not have been possible before.

5.1 Expansion in Health and Engineering-Related Fields

York was first conceived as a truly comprehensive university with programme offerings in all fields of study, including Engineering and Medicine. A three-decade pull-back in government funding starting in the early 1970s put that dream on hold for quite some time: but since the turn of the century, York has opened a Faculty of Health and a School of Engineering. These fields of study, which are by nature more applied than the basic sciences, are always the ones which tend to generate the most commercial applications and the greatest interactions with private companies and public authorities. Thus, it is only recently that the institution was able to make the full range of economic and social impacts that its initial backers envisioned.

In 2018-19, York University had 178 industry partnerships, with these generating private funding equal to \$4,601,702. These figures are primed to grow.

5.1.1 Promoting Health and Safety

The largest York University industry partnership in recent years has been with Sanofi Pasteur. Sanofi Pasteur committed in 2018 to providing \$1.5 million over five years, on top of \$1 million from NSERC, to support the NSERC/Sanofi Industrial Research in Vaccine Mathematics, Modelling and Manufacturing, occupied by Distinguished Research Professor Jianhong Wu (York Media Relations 2018c). This work aims to develop new statistical methods for identifying populations vulnerable to infectious diseases and to improve speed and efficiency in manufacturing. In another pharmaceutical collaboration, chemistry Professor Art Orellana has been working with Hoffmann-La Roche to generate small molecules called pyrimidines that are used in drug discovery and development, with over \$308,000 in funding in 2018-2019 (yFile 2019e).

Another large project, associated with ADERSIM has connected AUG Signals Limited with the Lassonde School's Civil Engineering; York's Advanced Disaster, Emergency and Rapid-response Simulation Facility; and Defence Research and Development Canada's Centre for Security Science, among others, with additional financial support of \$1.44 million from Public Safety Canada (Lassonde School of Engineering 2019). The purpose of the project is to develop an all-weather radar-based system to help improve roadway safety for first responders. ADERSIM is also working with various partner start-ups, providing to modelling and simulation infrastructure.

York University has also partnered with the Southlake Regional Health Centre and the University Health Network in implementing the Health Ecosphere. The Health Ecosphere received \$15 million from the Federal Economic Development Agency of Southern Ontario (FedDev Ontario) and \$19.45 million from over 30 other partners. From 2016 to 2019, the Health Ecosphere had led to the commercialisation of 77 new products in 62 new markets and fostered almost 100 new partnerships, while creating and maintaining over 150 well-paid jobs. The Health Ecosphere evolved from the Connected Health and Wellness Project (CHWP) funded with \$15.5 million again from FedDev Ontario, which sought to support small and medium-sized businesses and major healthcare institutions looking to develop new mobile health information technologies and technology assisted health coaching and training. The CHWP led to 40 new products, processes and services, and the creation of 122 jobs, 16 partnerships and 27 spin-off collaborations.

5.1.2 Leading Research on Vision

According to the CNIB Foundation, 1.5 million Canadians identify themselves as having sight loss. An estimated 5.59 million more possess eye diseases that could cause sight loss. Within Ontario, 681,000 people have vision impairment that can be classified as mild or worse. Cataracts, age-related macular degeneration, glaucoma, and diabetic retinopathy are the leading causes of vision loss in Canada (CNIB 2020). There is tremendous potential for continuing the development of new automated technologies to addressing vision loss. York is at the cutting edge of research in this area.

York boasts the Centre for Vision Research (CVR) and has concentrated remarkable capacity in this area. There are 33 research faculty, seven research scientists and 18 adjunct faculty associated with the CVR, as well as 70 graduate students and six post-doctoral fellows. Among faculty members, seven Canada Research Chairs at York (five Tier 1 and two Tier 2) and seven York Research Chairs (four Tier 1 and three Tier 2) do work relating to human vision. The mandate of the Centre is to

pursue interdisciplinary research and training in the visual sciences and their applications (CVR 2020). York ranks third in the world in the area of biological and computational vision. The CVR indicates that its research has real-world consequences, tackling “problems of strokes, migraines, brain disorders, autism and visual deficits in Canada’s aging population”.

In 2016, the CVR won seven years of funding under the Canada First Research Excellence Fund (CFREF) worth \$120 million over seven years for its *Vision: Science to Applications (VISTA)* initiative. VISTA is a partnership with over 50 academic and non-academic partners around the world, with the goal to explore how “neural and/or machine systems [can] be integrated to provide adaptive visual behaviour in real-world conditions,” or in other words, how technology can be used to permit or enhance vision (VISTA 2020). One crucial element of VISTA is providing \$50,000 seed grants for projects to pursue their initial development before securing further resources externally.

Currently, VISTA projects are still in their early stages and so it is difficult to talk about impacts, but many initiatives appear very promising. Two start-ups have emerged with VISTA support. The most successful of these is DropletLab, which has sold its affordable technology for measuring droplet surfaces internationally including in Italy, Singapore and South Korea. The other start-up is in an earlier stage but is focused on artificial intelligence solutions for filming sports. Other technologies emerging from VISTA work include a tool for assessing mobility decline in aging patients and a high sensitivity roadside test for cannabis use. Both these technologies are currently in the validation phase, including testing on humans.

Vision research is one of the university’s clearest areas of research strength. It will continue to merit attention moving forward.

5.1.3 A Leader in Space Research

York is home to the Centre for Research in Earth and Space Science (CRESS). CRESS’s mission is to facilitate and strengthen collaborative and interdisciplinary research across the fields of astronomy and astrophysics, atmospheric science, earth science, planetary science, geomatics engineering, and space engineering. This cutting-edge research is done within the areas of planetary exploration, climate and environment, and space technology.

CRESS conducts extensive research in space. For example, in December 2018 when Canadian astronaut David Saint-Jacques arrived at the International Space Station, York Professor Laurence Harris’s space research began. Harris, Professor of Psychology, Kinesiology and Health Sciences, and Biology, led a virtual reality experiment named VECTION that is investigating the effects of microgravity on astronauts’ perception of their motion. While in space, astronauts performed three virtual reality tasks that focused on their perception of orientation. Helping us to understand how humans perceive information in space, the team’s goal is to produce a model of an astronaut’s perception of motion and how the perceived distance to objects changes in outer space. This research promises to have significant impacts closer to home as well. According to Harris, the experiment may help researchers understand disorders that affect movement such as Parkinson’s disease, while virtual reality applications may aid people recovering from a stroke or from damage to organs that affect balance. In the long run, there is significant potential for this research to aid our knowledge of the effects of aging on perception and provide insight into improving remotely

operated robotic technologies, such as those used in surgery. According to astronaut Saint-Jacques, “everything that is developed in space for remote medicine can be applied on Earth.”

Research at CRESS also helps provide a better understanding of the impacts of climate change. In 2018, York Professor George Z.H. Zhu and his team of researchers from York’s Lassonde School of Engineering won a \$200,000 grant to support their involvement in the Canadian Space Agency’s CubeSat Project. Professor Zhu’s team was responsible for testing a Canadian-developed wide-angle camera that observes snow and ice coverage in Canada’s northernmost reaches. This camera will be attached to a satellite that will be sent to the International Space Station in 2020 and subsequently ejected into orbit. From the ground at York, Zhu’s team will operate the satellite. In addition to allowing students the rare opportunity to design, build, and operate a satellite, the project will provide an opportunity to conduct observations at a greatly reduced cost and increased frequency.

Not only do CRESS researchers track snow at home, they have even tracked snow on Mars. Using a LIDAR instrument on a spacecraft launched as part of the Nasa Phoenix mission to Mars, York Professor Jim Whiteway led a team of scientists that discovered snow falling from Martian clouds. This major discovery rested on work done decades before at York University. LIDAR technology, which emitted pulses of laser light into the Mars sky, was itself developed at York university in the 1970s. With the significant discovery of Martian snowfall, the next generation of Mars LIDAR research seeks to detect the deposition of water on Mars.

York’s excellence in space research is reflected in the classroom, particularly in its Space Engineering program. Unique in Canada, this program provides students with the technical skills needed to design solutions to problems using space-based assets and the principles of systems engineering. At the undergraduate level, the program leads to a specialised Honours Bachelor of Applied Sciences, reflecting the integration of theoretical and practical experience in the classroom. Through an optional co-op program following the second year, undergraduate students can gain valuable professional experience within space agencies and other related fields involving the design of complex systems. Due to York’s considerable contributions to space research, both undergraduate and graduate students benefit from learning from and working with leading experts in the field.

While this teaching and research has clearly made an impact already, its future contributions promise to be especially widespread, touching on a wide array of issues, from climate change to remote medicine to space exploration.

5.2 Support for Entrepreneurship and Business Incubation

York has implemented a series of initiatives to promote innovation and entrepreneurship among students. Many of these initiatives are in their early stages which makes it difficult to speak of impact, but they are oriented towards supporting greater economic growth.

Innovation York delivers various programmes to support entrepreneurial students, alumni and other community members under the rubric of its LaunchYU programme (LaunchYU, 2020). The LaunchYU Accelerator is a four-month programme to support full-time entrepreneurs in the ideation and discovery stage of a for-profit or social enterprise. Bootcamps, workshops, mentorship and other supports assist in building, launching and scaling ventures. The programme was recently revamped to further strengthen learning interactions for participants. LaunchYU offers additional,

free-of-cost one-on-one coaching for start-ups outside of the Accelerator programme. BIOSA Technologies, a graduate of the LaunchYU Accelerator programme, recently took the top prize in the Aird & Berlis StartupSource Market Entry Award, worth \$25,000. The start-up company has developed an innovative way to boost production quality in an array of industries by optimizing enzymes to extend their shelf life.

The Lassonde School of Engineering launched the Bergeron Entrepreneurs in Science and Technology (BEST) programme in 2012 with a \$2 million donation from Douglas and Sandra Bergeron. The programme aims to support entrepreneurship, especially among engineering students. Much of the initiative centres on helping students to develop business skills through curriculum and experiential learning that culminates in a BEST certificate. Lassonde has developed and delivers much of the content through partnerships with the Schulich School of Business and Osgoode Hall Law School. Experiential learning components include workshops and design challenges involving industry experts, entrepreneurial-style coop opportunities and international entrepreneurial experiences. Programme participants can also access scholarships and venture seed funding. In fact, support for specific ventures has recently expanded. Technology innovators can receive access through BEST to York facilities, access to mentors and advisors, access to BEST Early Stage Venture Funding (of between \$5,000 and \$50,000) from the programme and alumni, and fast track access to angel funding through York Angels.

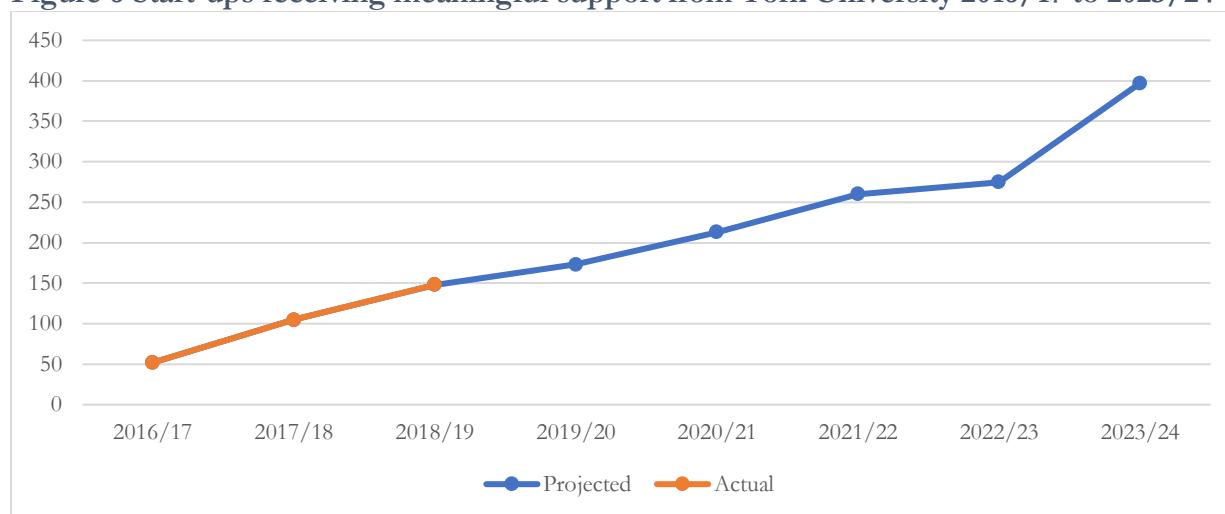
As well, the Glendon Entrepreneuriat et Innovation A L'international (GENIAL) programme in some ways resembles the BEST programme and is open to Glendon students and faculty, as well as Ontario francophones. Firstly, BEST offers training in entrepreneurship and innovation. The Entrepreneurial Skills Passport (ESP) is a non-credited experiential learning initiative through which student entrepreneurs undertake experimentation to discover business opportunities and develop related solutions, to build a proof of business concept in creating a real e-commerce business, and to communicate the value of their business to potential funding partners, all over 15 weeks. Students can also access new for-credit courses in entrepreneurship, while the initiative also offers workshops and conferences as well as incubator space and equipment (Glendon 2020). Research initiatives have begun to develop in partnership with the programme.

The Faculty of Health has also its Agents of Change Project, which provides up to \$500 in start-up funds, as well as training, for students to launch health promotion initiatives in the community. The project has seeded some very successful community organizations. [Fix the Six](#) also emerged as an independent entity that supports those experiencing homelessness by repurposing donated gift cards for use by shelters or individuals, and sharing the stories of those experiencing homelessness. The [Autism Teenage Partnership](#) offers weekly social programming for youth aged 12-25 with autism spectrum disorder (ASD) to promote inclusion, confidence building and social skill development. Finally, the [Ascend Network](#) emerged from one project as an independent organization that hosts an annual three-day retreat to help students become stronger community leaders.

Bringing together York's entrepreneurial initiatives, Innovation York data show a considerable increase in start-ups meaningfully supported since 2016/17. As shown in Figure 6, they project this growth will continue for the foreseeable future.³⁵

³⁵ The first three years include only data from Innovation York programmes, from 2020/21 on, tracking will include the full set of programmes supporting entrepreneurial ventures. Meaningful support is "support for the development and/or growth of a start-up venture throughout a three-month period or equivalent" (personal correspondence).

Figure 6 Start-ups receiving meaningful support from York University 2016/17 to 2023/24



Beyond support for students, York has recently expanded its activities to promote entrepreneurship in the Northern GTA. In 2017, York established its YSpace, 10,000-square-foot community innovation centre in Markham Centre. YSpace supports entrepreneurs by providing a co-working space, access to industry advisors, education, workshops and technologies. By 2019, the YSpace incubated 32 ventures that raised \$5.8 million in funding, with the incubator itself generating \$3.1 million in revenues. YSpace indicates that these activities created 87 jobs.

To participate in the YSpace incubator programmes, founders must have products in market or ready for launch within three months and must be committed to working on their venture full-time and in the YSpace for at least three days per week. Further, the start-up should have potential to grow and scale; the team should be focused on solving a societal problem using innovative methods; and the project team must be driven, coachable and collaborative. YSpace has also launched a consumer-packaged goods Food and Beverage Accelerator programme with the goal of tripling company sales through mass-market distribution. The project supported eight ventures in its first year and will continue for two additional years to support 18 more ventures (ySpace Markham 2019). Examples of ventures incubated in YSpace to date are outlined in Table 10.

There are additional YSpace activities that merit attention.

- Idea Consultations are 30-minute discussions that aim to help community entrepreneurs use design thinking and lean startup methodologies to further develop their ideas. YSpace completed 61 such consultations in its first year, leading to two incubated companies.
- YSpace is partnering with the York Region District School Board (YRDSB) to deliver a summer school course encouraging high school students to pursue entrepreneurship, called Youth Innovation by Design. From 2017 to 2019, 67 students participated, undertaking 47 experiential placements.
- Fully 121 attendees participated in the 13-week Founder’s Fundamentals educational programme designed to help community entrepreneurs gain knowledge and skills to launch a start-up, while 27 individuals participated in the YSpace Fabrication Certification programme to learn to use 3D printers, laser cutters and CNC mills.

YSpace is expanding the Founder Fundamentals programme to Newmarket and York’s Keele Campus in 2020, while it will be offering Idea Consultation office hours at new locations in

Markham and Richmond Hill. Of course, the YSpace initiative is still in its earlier days. Its impact remains in large part to be seen, but its developments to date would appear promising.

Table 10 YSpace ventures incubated to date

Venture	Product	Indicators of success
Able Innovations (graduated)	Technology to support patient mobility in healthcare	Two collaborative research projects, over \$600,000 in funding raised
Creation Crate	E-learning platform combining digital course content and hands-on projects to teach STEM skills	Over 17,000 subscriptions sold in 65 countries
Eatable	Snacks, including all-natural gourmet popcorn with cocktail, wine and spirit inspired flavours	Sold in over 50 locations, nine magazine features
Mero Technologies (graduated)	Providing smart property management solutions	Deployed in 10 facilities including Pearson International Airport and Hilton Hotels and Resorts, 30% initial client efficiency savings
Screenfluence	All-in-one hardware solution to help businesses control their display content remotely and easily	Deployed in over 150 locations, 111% annual growth since 2017
Suku Vitamins	Natural gummies that provide beauty and wellness benefits and are sugar and gelatin free.	Sold in over 250 locations, 58.12% month-over-month growth

There are also Osgoode clinics that support firms to grow effectively. The IP Osgoode Innovation Clinic also provides services relating to intellectual property on a needs-basis for individuals or start-up companies. Students participating in the Osgoode Venture Capital Clinical Project (OVC) assist early stage entrepreneurial ventures in their financing and equity structuring stages of growth with support from Wildeboer Dellelce. These services can be really helpful at a stage when many firms cannot afford to cover the costs of legal advice.

5.3 Work-Integrated Learning

The second area of interest relates to education partnerships with industry. Increasingly, institutions have added elements of work-integrated learning (WIL) into their offerings. While WIL is an umbrella term that encompasses a variety of elements, such work placements and applied research projects, it is a model of education which formally and intentionally integrates a student's academic studies within a workplace or practice setting.

Increasingly, post-secondary institutions and governments have found it advisable to invest in WIL. Not only is WIL a facilitator of institutional relationships with industry, WIL improves the employability of graduates, thereby increasing graduate employment rates and helping to raise overall student satisfaction. Additionally, WIL increases alumni engagement, helps relevant faculty keep their industry knowledge current, and provides opportunity to improve curriculum (Sattler 2011). Founded in 2015, the Business/Higher Education Roundtable (BHER) aims to ensure that 100% of Canadian post-secondary students partake in some form of WIL prior to graduation. The federal government has endorsed WIL, most notably by providing BHER funding for some of its

initiatives. Budget 2019 pledged \$631.2 million over five years to expand the Student Work Placement Programme to all students. It also provided a \$150 million over four years to create partnerships with innovative businesses and another \$17 million to support BHER to create a platform to link students, educational institutions, and employers (BHER 2019).

Important developments in WIL and experiential learning are occurring at York. In 2018-19, 9,069 York students (19% of the full-time undergraduate total) participated in some form of a work placement. Moreover, 21% of students participated in an experiential learning opportunity outside the classroom. Other data indicate a 15.5% increase in the number of students participating in experiential learning from 2016-17 to 2018-19.

In the Fall of 2018, the Lassonde School of Engineering launched a four-year Honours Bachelor of Computer Science degree in partnership with Shopify, known as the Dev Degree, with a starting cohort of eight students. Students in the programme are embedded within Shopify development teams through a 4,500-hour paid internship (double the length of a traditional co-op) over the course of their studies, while Shopify also pays the students' tuition over the full length of the programme (York Media Relations 2018b). This programme falls under the Industry Partnership Stream of Lassonde's Computer Science Honours programme, which places a special emphasis on experiential learning and allows students to earn practicum credits.

Finally, starting in 2019, York began delivering third and fourth-year Bachelor of Commerce courses at the IBM Canada headquarters in Markham. This initiative aimed to situate students' learning within a dynamic business environment. Students would benefit from joint networking and learning events alongside IBM employees, as well as the engagement of IBM staff within the classroom (York University at Markham 2020). Additional efforts have sought to expand work-integrated learning opportunities and provide York students with access to IBM micro-credentials. The company reports that it hired 41 students from York University in 2018, mostly from Lassonde and Schulich, for co-op and internship opportunities. The value of IBM's in-kind contributions to York add up to \$1.8 million, providing some indication of how the company values the partnership.

Beyond opportunities to learn from and about a large innovative company such as IBM, another benefit of locating programmes within the IBM headquarters campus has been to place students in proximity to the ventureLAB technology incubator and the IBM Innovation Space. These are dynamic hubs in the development of new technology ventures, with ventureLab for instance currently hosting over 45 companies and having supported more than 2,000 entrepreneurs (VentureLab 2020).

Again, at this stage it is difficult to speak of impact from these initiatives, especially given their relative newness. However, they signal a growing and promising commitment to economic impact.

5.4 Summary

As York achieves its intended shape as a fully comprehensive university offering instruction and research across the entire academic spectrum, the kinds of impacts it is capable of generating change as well. The addition of Health and Engineering to the school's palette of programs is significant, since these two fields (the former in collaboration with other life sciences) tend to have the most immediate impacts in terms of interaction with industry/employers, creation of new high-technology

jobs, and various forms of intellectual property. Though these fields at York are still in their early days academically speaking, some clear possibilities for future impact are easily identifiable. The university's pivot to focus increasingly on entrepreneurship, and its recent foray into the world of business incubation, in this context, are parallel and complementary initiatives which will help to solidify the institution's potential as an economic engine for the Greater Toronto Area. Additionally, a more recent focus on Work-Integrated Learning will almost certainly build on the institution's already solid record of producing graduates with strong, middle-class incomes, and acting as a ladder into opportunity, particularly for students from under-served communities.

6. Conclusion

Over the preceding pages we have attempted to describe the ways in which York University impacts the community both economically and socially. We make no claims to comprehensiveness: had we wanted to provide something exhaustive on impact, it would have required a tome many times the size of this one. Instead, what we have endeavoured to describe are the *primary* ways in which York impacts the world around it, and to place the activities that lead to those impacts in some kind of cohesive narrative.

There is, obviously, an important tale to tell with respect to York's strictly economic footprint, and the billions of additional dollars in economic activity generated by the institution and its students, and the tens of billions of dollars of additional income created by its alumni. But this is in a sense a generic story that many institutions can tell regardless of what they do. The important stories for York, are the economic effects created by its ability to attract international students who tend to stay and enrich the province both economically and socially. It is about the tens of thousands of businesses created by York graduates, many of whom attribute their entrepreneurial drive and instincts to their time at the institution. And it is the many thousands of students over time who say they would not have gone to post-secondary education (or at least not to university) had York not admitted them, and who, thanks to a York University education, have been able to access the kinds of stable, middle-class jobs that higher education makes possible. York is an economic engine, certainly, but maybe more importantly, it is a ladder to opportunity.

But perhaps what make York truly unique is the way it pairs these missions of growth and opportunity with a deep desire for inclusion. This is not simply a matter of having one of Canada's most diverse student bodies (though this is certainly the case). It is the way that so much of its research has been devoted to causes of social inclusion. For the sick, and the elderly. For low-income communities that border the campus. For immigrants and refugees. It is about ensuring that the benefits of being in Canadian society accrue not just to those lucky enough to attend university, but to expand those benefits to all, though the creation of strong, resilient communities.

And now, as we look to the future, York intends to build on these impacts by adding a new layer of activities. Globally, York has long been an important player in the development of new, innovative and ethical business programs and a supplier of management talent to firms across the Globe. With the comparatively recent additions of Health and Engineering faculties, York is creating a series of new bridges to the world of work for its students, as well as new venues for collaborators with practitioners and entrepreneurs, particularly through its entrepreneurship and incubation supports.

York has, in sum, an accomplished record of impact, one which certainly has its financial impacts, but which above all, is *human* in nature. York's impact, above all need to be generated by its people: the ones it accepts from around the world and from underserved neighbourhoods in Toronto. The ones that go on to thrive in their careers, and who make enormous contributions to their communities through their work and charity. And the ones who work tirelessly with communities across Toronto and around the globe, attempting to put their knowledge and expertise at the service of peoples seeking self-improvement, resilience and justice. It is they who are York's impact, its influence and its strength.

Methodological Appendix

In this Appendix we detail the variety of methods to conduct its review of the economic and social impact of York University. These are primarily two surveys, extensive interviews, and a review of institutional data and documentation.

Surveys

HESA developed and implemented two surveys in partnership with the Office of Institutional Planning and Analysis, and these were among the most important sources of evidence for the review. One survey was of York alumni. The other was of current students, with a special focus on first-generation students.

Alumni Survey

HESA developed its alumni survey to explore York alumni's civic and economic activities. Sections addressed the following more specific topics:

- Civic engagement
- Sense of belonging
- Appreciation of diversity and cultural competence
- Employment
- Entrepreneurship
- Research and development
- “General life” – access to higher education, life satisfaction, etc.
- Demographics
- Income

The survey was designed to allow comparison on many questions between York alumni and other university graduates in the GTA. Many questions were based on the General Social Survey (GSS), while a handful were compared to Census Data or surveys by Léger and Ipsos. Unfortunately, the GSS data is from 2013, but fortunately a new round of the survey is being completed in 2019, which should provide the basis for additional comparison once it is released. Additionally, questions asked alumni to indicate to what extent having studied at York University had shaped their lives, preferences, or activities in the relevant area.

York University has 322,535 alumni in total. HESA focused its research on alumni between the ages of 25 and 64 who identify according to the traditional gender binary, e.g. male or female. These respondents were then separated by gender and ten-year age groupings to permit analysis to account for gender and age bias; this then included 250,608 alumni. The survey was sent out to 85,259 alumni, based on an estimated 3% response rate. Eventually, our target was to receive just over 380 responses per age and gender grouping so that, were the responses to be random (which cannot be the case in a voluntary survey), there would be a 5% margin of error at 95% confidence. Ultimately, we conducted very little analysis at this level of specificity, however, though we still benefit from the sizable overall sample when examining cuts by ethnicity and immigration status for instance.

The Office of Institutional Planning and Analysis first launched the survey on November 12, 2019. Reminders were sent subsequently on November 18, November 25 and December 16. The last survey reminder was sent only to our four male samples based on relatively lower response rates. The survey closed on January 6, 2020.

Response rates to the survey were very strong, averaging 7.1% overall, despite it taking approximately 17 minutes to complete. By demographic group, they ranged from 4.8% for men aged 25-34 to 12.6% for women aged 55-64, with a general pattern of higher participation among women and higher ages. Overall responses surpassed the target in every age demographic.

The only voluntary question in the survey was regarding income, which was also the last question in case it caused participants to drop out. Only 61% of respondents reported their incomes in the survey. Men were more likely than women to report their income levels across all age groupings, which helped to ensure the target for respondents to the income question could be met. Still, the sample of respondents providing income is very substantial, sufficient to permit considerable analysis.

The income data were ultimately concerning, however, because of very high reported incomes that were essentially not credible. Potential explanations could include bias in the sample of alumni contacted (if York has contact info disproportionately for higher-income alumni); bias in responses to the survey or to the income question specifically; or error due to the mechanism for reporting income. Respondents reported their income on a slider that tracked \$1,000 increments from \$0 to \$2,000,000, which may have caused some confusion among respondents – a different mechanism of reporting income would likely be worth trying out in the future. To adjust for these results, in analysis of incomes we exclude values over \$1 million – a choice made based on the close approximation between the relative positions of the median and the mean for results with this cut-off compared to all university graduates in the Toronto CMA (a 42% difference for our sample compared to 46% in the Toronto CMA).

Analysis of the survey results strives wherever possible to control for age (in ten-year increments), gender and immigration status. Control took place not at the individual level, but by adjusting the weights of samples to match. Readers should assume these controls are in place unless otherwise indicated.

Student Surveys

HESA also developed a survey of first-generation York students to dig into why they attend York University and to what extent they benefit from their experiences as students at York. The survey included a mix of open and closed-ended questions and took approximately nine minutes to complete.

This survey was not designed for comparison purposes. First-generation students' responses would speak for themselves. However, there were mistakes in the initial implementation of the survey that created something of a (highly imperfect) control group. The survey was initially sent to students who had previously identified as *not* being first generation students, rather than first generation students. When this issue came to our attention, HESA added a screening question to filter out non-first-generation students. Subsequently, HESA re-ran the survey with a second sample of students who had previously identified themselves to York as first generation, with the screening question.

HESA therefore has three separate samples of responses for its “first-generation” student survey, as presented in the following Table.

Sample	Characteristics	Responses	Response rate	Launched	Closed
Flawed general	Students previously identified by York as non-first-generation students	1,238	2.7%*	Sep. 25	Sep. 30
First-gen sample 1	Students previously identified by York as non-first-generation students but who identified as first-generation students in the screening question	286	NA	Sep. 30	Oct. 12
First-gen sample 2	Students previously identified by York as first-generation students and who also identified as first-generation students in the screening question	715	7.7%	Oct. 15	Oct. 28

*Response rate as of the point when this survey was closed.

Among students in the first survey who responded to the screening question after it was introduced, 76.1% reported that at least one of their parents attended university or college. This represents only a slightly higher share of non-first-generation students than across York University as a whole (73.7%). Assuming this same rate applied constantly (the sample with the screening question included 1,238 responses), the respondents from before the screening question was introduced could be considered a reasonable approximation of the overall student body at York University. Of course, the invitation to the survey explicitly indicated that it was targeted at first-generation students which may have discouraged some non-first-generation students from participating.

How to use the responses to the first sample after the screening question was introduced poses a conundrum, as these students have communicated mixed messages at this point as to whether they are or are not first-generation students. The incentive opportunity for a one-in-five chance to win a \$50 prize might have encouraged some ineligible students to participate, affecting responses once the screening question was included. However, the incentive was very modest, translating into an expected hourly wage of only about 60 cents. Given this, HESA is inclined to believe the students’ responses are genuine. Therefore, throughout this report we treat these students’ responses as representative of York University students as a whole – and we will refer to it as the general student population survey, in contrast with the first-generation student survey. This is the best available option to make use of the time 1,238 students provided in responding to this survey.

Interviews

HESA also conducted extensive interviews in support of the review, with members of the following groups:

- York staff (50+ interviews)

- Community partners (12 interviews)
- Employers and research and development partners (8 interviews)

Interviews with York University staff aimed to identify institutional accomplishments for further investigation, as well as stakeholders or other staff for further interviews. HESA identified community partners and employers based on stories and recommendations provided in interviews with institutional staff. Data from these interviews were taken as a more objective accounting of the impacts of York University's activities in the community precisely because they came from parties outside of the university.

Data and Documentation

HESA also relied on considerable data and documentation. Much of this was helpfully provided by York University staff or available on York's public websites. Other data included Statistics Canada research, as discussed largely with regards to the alumni survey.

References

- ACT for Youth CBR Presentation. n.d. "An Overview of Development in Jane-Finch: 1950s to Present." Retrieved from http://www.yorku.ca/act/CBR/AnOverviewofDevelopmentJaneFinch_AlexanderLovell.pdf
- Advanced Disaster, Emergency and Rapid Response Simulation. 2019. "News & Events." Retrieved from <https://adersim.info.yorku.ca/news-2/>
- Advanced Disaster, Emergency and Rapid Response Simulation. 2020. "ADERSIM." Retrieved from <https://adersim.info.yorku.ca/>
- ARCH Disability Law Centre. 2019. "Annual Report 2018-2019." Retrieved from <https://archdisabilitylaw.ca/wp-content/uploads/2019/10/Annual-Report-2019-FINAL-2019-09-30.pdf>
- Arora, Anil. 2019. "A Data Story on Ethnocultural Diversity and Inclusion: A Discussion with Statistics Canada." *A Presentation Series from Statistics Canada About the Economy, Environment, and Society*. April. Statistics Canada Catalogue no. 11-631-X.
- The Aspen Institute Center for Business Education. 2012. Beyond Grey Pinstripes Top 100 MBA Programmes Rankings, 2011-2012. Retrieved from https://assets.aspeninstitute.org/content/uploads/files/content/docs/pubs/BGP%202011-2012%20Global%20Report-small.pdf?_ga=2.69649238.716676156.1580916194-84785705.1580916194
- The Association for Canadian Studies. 2017. "Selected Views on Diversity in Canada." Retrieved from <https://www.scribd.com/presentation/348921795/Diversity>
- Barton, Dominic, Dezso Horvath, and Matthias Kipping, eds. 2016. *Re-Imagining Capitalism: Building a Responsible Long-Term Model*. Print.
- Baskanderi, A., Davey, K., Flatt, J., Isimbi, S., McVicar, J., and Jonathan Williams. 2020. More Than a Place of Refuge: Meaningful engagement of government-assisted refugees in the future of work. Ottawa: The Public Policy Forum. Obtained from <http://www.actioncanada.ca/project/place-refuge-meaningful-engagement-government-assisted-refugees-future-work/>
- Bath, Peter A., and Dorly Deeg. 2005. "Social Engagement and Health Outcomes Among Older People: Introduction to a Special Section." *European Journal of Ageing*. Vol. 2, Issue 1. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5547666/>
- Berger, Joseph et al. eds. 2009. *The Price of Knowledge: Access and Student Finance in Canada*, 4th Edition. Montreal: Canada Millennium Scholarship Foundation.
- BCCHC, Black Creek Community Health Centre. 2019. "2018/2019 Annual Report." Retrieved from <https://www.bcchc.com/wp-content/uploads/2019/07/2019-BCCHC-AnnualReport-FINAL.pdf>

BHER, Borderless Higher Education for Refugees. 2020. "About BHER." Retrieved from <http://bher.apps01.yorku.ca/about-bher/>

Business/Higher Education Roundtable. 2019. "Business, post-secondary leaders celebrate unprecedented federal investments in preparing Canadian students for the workforce." Retrieved from <http://bher.ca/news/business-post-secondary-leaders-celebrate-unprecedented-federal-investments-in-preparing-canadian-students-for-the-workforce>

Bridging Programme for Women. 2020. "Welcome to Bridging Programme for Women." Retrieved from <https://bpw.gsws.laps.yorku.ca/>

The Canada Millennium Scholarship Foundation. 2008. "Research Paper 2 — First-Generation Students: A Promising Concept?" Retrieved from <https://eduq.info/xmlui/bitstream/handle/11515/35132/first-generation-students-transitions-note-2-eng-CIRST.pdf?sequence=2>

Canadian Observatory on Homelessness. n.d. *About us – Canadian Observatory on Homelessness*. Obtained from: <https://www.homelesshub.ca/about-us/about-the-coh>

Canadian Press. 2019. "Canada resettled more refugees than any other country in 2018, UN says." Retrieved from <https://www.cbc.ca/news/politics/canada-resettled-most-refugees-un-1.5182621>

Çekmecelloglu, Hülya G. and Ayşe Günsel. 2013. "The Effects of Individual Creativity and Organizational Climate on Firm Innovativeness." *Procedia – Social and Behavioral Sciences*. Vol. 99. Retrieved from https://www.researchgate.net/publication/270848618_The_Effects_of_Individual_Creativity_and_Organizational_Climate_on_Firm_Innovativeness

The Centre for Vision Research (CVR). 2020. "Introduction." Retrieved from <http://www.cvr.yorku.ca/home/index.html>

Chatoor, K., MacKay, E. & Hudak, L. (2019). *Parental Education and Postsecondary Attainment: Does the Apple Fall Far from the Tree?* Toronto: Higher Education Quality Council of Ontario

Chibaka, E. F. 2017. *Advantages of Bilingualism and Multilingualism: Multidimensional Research Findings*. Obtained from <https://www.intechopen.com/books/multilingualism-and-bilingualism/advantages-of-bilingualism-and-multilingualism-multidimensional-research-findings>

CNIB Foundation. 2020. "Blindness in Canada." Retrieved from <https://cnib.ca/en/sight-loss-info/blindness/blindness-canada?region=on>

College of Nurses of Ontario. 2018. "Nursing Registration Exams Report 2018." Retrieved from <https://www.cno.org/globalassets/2-howweprotectthepublic/statistical-reports/nursing-registration-exams-report-2018.pdf>

The Conference Board of Canada. 2018. *Imagining Canada's Economy Without Immigration*. Obtained from: <https://www.conferenceboard.ca/press/newsrelease/2018/05/15/imagining-canada-s-economy-without-immigration>

Council of Ontario Universities. 2015. "York University establishes The Dahdaleh Institute for Global Health." Retrieved from <https://cou.ca/articles/york-dahdaleh-institute-for-global-health/>

Dahdaleh Institute for Global Health. 2020. "Safe Water Optimization Tool." Retrieved from <https://dighr.yorku.ca/projects/safe-water-optimization-tool/>

Desmond, Matthew. 2016. *Evicted: Poverty and Profit in the American City*. Print.

Disability Rights Promotion International (York University). 2020. "Who We Are." Retrieved from <https://drpi.research.yorku.ca/who-we-are/>

eCampusOntario. 2020. "Digital Inclusion Funding." Retrieved from <https://www.ecampusontario.ca/digital-inclusion-funding/>

Elnasri, Amani and Kevin J. Fox. 2015. "R&D, Innovation and Productivity: The Role of Public Support." *KDI Journal of Economic Policy*. Vol. 37, No. 1. Retrieved from https://www.researchgate.net/publication/312874605_RD_Innovation_and_Productivity_The_Role_of_Public_Support

Faculty of Education (York University). n.d. "This is impact [The campaign for York University]."

Faculty of Education (York University). 2020a. "Bachelor of Education (BEd) - WAABAN Indigenous Teacher Education." Accessed from <https://edu.yorku.ca/waaban/>

Faculty of Education (York University). 2020b. "The Jean Augustine Chair in Education, Community and Diaspora." Retrieved from <https://edu.yorku.ca/research/jean-augustine-chair/>

Faculty of Health (York University). 2019. "Health [Impact Report 2018-2019]."

Faculty of Health (York University). 2020a. "Health [Impact Report 2019-2020]."

Faculty of Health (York University). 2020b. "Farah Ahmad." Retrieved from <https://health.yorku.ca/health-profiles/index.php?mid=977852>

Faculty of Health (York University). 2020c. "Tamara J Daly." Retrieved from <https://health.info.yorku.ca/health-profiles/index.php?mid=214876>

Faculty of Health (York University). 2020d. "Gordon L Flett." Retrieved from <https://health.yorku.ca/health-profiles/?mid=3719>

Faculty of Science (York University). 2019. "Annual Review: Faculty of Science, 2018."

Faculty of Science (York University). 2018. "Annual Review 2017."

Finnie, R., Childs, S., and Wismer, A. (2010). *First Generation Post-Secondary Education Students*. The Canadian Education Project: A MESA Project L-SLIS Research Brief.

Frénette, Marc. 2019a. “Are the Career Prospects of Postsecondary Graduates Improving?” Statistics Canada Catalogue no. 11F0019M – No. 415

Frénette, Marc. 2019b. “Do Youth from Lower- and Higher-Income Families Benefit Equally from Postsecondary Education?” Statistics Canada Catalogue no. 11F0019M – No. 424.

Glendon (York University). 2020. “This is Glendon 2020/2021.”

Government of Canada. 2014. *Action for Seniors Report*. Retrieved from <https://www.canada.ca/en/employment-social-development/programmes/seniors-action-report.html>

Government of Canada. 1988. “Canadian Multiculturalism Act.” R.S.C., 1985, c. 24 (4th Supp.).

Government of Canada. 2017. “News Release: Canada’s entrepreneurs and innovators will benefit from the Government’s Innovation and Skills Plan.” Retrieved from https://www.canada.ca/en/innovation-science-economic-development/news/2017/07/canada_s_entrepreneursandinnovatorswillbenefitfromthegovernments.html

Homeless Hub. 2020. “About us: Canadian Observatory on Homelessness.” Retrieved from <https://www.homelesshub.ca/about-us/about-the-coh>

Horn, Michiel. 2009. *The Way Must be Tried*. Montreal: McGill-Queen’s University Press.

ICES, The Institute for Clinical Evaluative Sciences. 2017. “Half of young adults with autism have at least one psychiatric diagnosis.” Retrieved from <https://www.ices.on.ca/Newsroom/News-Releases/2017/Half-of-young-adults-with-autism-have-at-least-one-psychiatric-diagnosis>

Imagine Canada. 2020. “Sector Impact – Charitable and Nonprofit Sector.” Retrieved from <http://sectorsource.ca/research-and-impact/sector-impact>

Innovation York. 2018. *Annual Report 2017-2018: Knowledge Mobilization at York University, From Research to Impact*.

Innovation York. 2017. *Knowledge Mobilization at York University: Annual Report 2016-2017*. Retrieved from <https://innovationyork.ca/files/2018/06/2016-2017-KMb-at-YorkU-Annual-Report.pdf?x88032>

Innovation York. 2016. *Knowledge Mobilization at York University: Annual Report 2015-2016*. Retrieved from <https://iy.info.yorku.ca/files/2019/11/2015-2016-KMb-at-YorkU-Annual-Report.pdf>

Ipsos Canada. 2018. “2018_1. Would you say that immigration has generally had a positive or negative impact on Canada?” Retrieved from https://www.ipsos.com/sites/default/files/ct/news/documents/2019-01/immigration-tables-1_0.pdf

Ipsos Canada. 2019. "Canadians becoming more nervous about immigration." Retrieved from <https://www.ipsos.com/en-ca/news-polls/canadians-nervous-about-impact-of-immigration-on-canada>

Kitchen, Peter, Alison M. Williams and Melissa Gallina. 2015. "Sense of Belonging to Local Community in Small-to-Medium Sized Canadian Urban Areas: A Comparison of Immigrant and Canadian-Born Residents." *BMC Psychology*. Vol. 3, No. 28. Retrieved from <https://bmcp psychology.biomedcentral.com/articles/10.1186/s40359-015-0085-0>

Lassonde School of Engineering. 2019. "Lassonde Professor is part of team leading \$2.2 Million Roadway Safety System research." Retrieved from <https://lassonde.yorku.ca/articles/lassonde-professor-part-team-leading-22-million-roadway-safety-system-research>

Llamas, J. D., Nguyen, K. and Alisia G.T.T. Tran. 2019. "The case for greater faculty diversity: examining the educational impacts of student-faculty racial/ethnic match". *Race Ethnicity and Education*. Obtained from <https://www.tandfonline.com/doi/ref/10.1080/13613324.2019.1679759?scroll=top>

LaunchYU. 2020. "LaunchYU." Retrieved from <https://launchyu.ca/news/>

Lehmann, W. (2007). "I just didn't feel like I fit in": *The role of habitus in university dropout decisions*. Canadian Journal of Higher Education Revue. 37(2), 89-110.

Macdonald, Moira. 2019. "Teacher supply goes from glut to scarcity in a few short years." University Affairs. Retrieved from <https://www.universityaffairs.ca/news/news-article/teacher-supply-goes-from-glut-to-scarcity-in-a-few-short-years/>

Making the Shift. n.d. *A Youth Homelessness Social Innovation Lab*. Obtained from: <http://makingtheshiftinc.ca/>

Martinson, Marty and Meredith Minkler. 2006. "Civic Engagement and Older Adults: A Critical Perspective." *The Gerontologist*. Vol 46, No. 3. Retrieved from <https://academic.oup.com/gerontologist/article/46/3/318/565270>

Miller, Anne, Brenda Simpson and Josh Lieben. 2011. "Understanding the Role of Volunteerism in Creating Social Isolation." SouthWest Communities Resource Centre. Retrieved from <http://swcrc.ca/wp-content/uploads/2013/09/Understanding-the-Role-of-Volunteerism-in-Creating-Social-Inclusion-Final-Report-for-SWCRC-September-2011.pdf>

Miller, Claire Cain. Sep. 10, 2018. "Does Teacher Diversity Matter in Student Learning?" *The New York Times*. Obtained from: <https://www.nytimes.com/2018/09/10/upshot/teacher-diversity-effect-students-learning.html>

Momani, Bessma and Jillian Stirk. 2017. "Diversity Dividend: Canada's Global Advantage." Pierre Elliott Trudeau Foundation, and the Centre for International Governance Innovation. Retrieved from <https://www.cigionline.org/publications/diversity-dividend-canadas-global-advantage>

Morris, Stuart, Gail Fawcett, Laurent Brisebois and Jeffrey Hughes. 2018. "A demographic, employment and income profile of Canadians with disabilities aged 15 years and over, 2017." *Canadian Survey on Disability*. November. Statistics Canada Catalogue no. 89-654-X.

Muff, Katrin and Thomas Dyllick. 2020. "Positive Impact Rating for Business Schools: When Students Rate the Positive Impact of Business Schools..." Positive Impact Rating Association, Lucerne, Switzerland.

Mueller, Richard E. 2008. *Access and Persistence of Students from Low-Income Backgrounds in Canadian Post-Secondary Education: A Review of the Literature*. A MESA Project Research Paper. Toronto, ON: Educational Policy Institute.

York University Budgets & Planning Department, Email correspondence. Jan. 2020.

Office of the Vice-President Research & Innovation (York University). 2019. "Centre for Refugee Studies Annual Report 2018-2019." Retrieved from <https://crs.info.yorku.ca/files/2019/07/CRS-Annual-Report-2018-19-final-May-24.pdf?x55821>

Ontario College of Teachers. 2018. "2018 Annual Report: Setting the Standard for Great Teaching." Retrieved from https://www.oct.ca/-/media/PDF/Annual%20Report%202018/2018AnnualReport_complete_EN_web.pdf

Ontario Ministry of Finance. 2019. "Ontario Population Projections, 2018-2046." Retrieved from <https://www.fin.gov.on.ca/en/economy/demographics/projections/>

Oreopoulos, Philip and Uros Petronijevic. 2013. "Making College Worth It: A Review of the Returns to Higher Education." *National Bureau of Economic Research* 23 No. 1.

Osgoode Hall Law School. 2020a. "Online NCA Exam Prep." Retrieved from <https://www.osgoodepd.ca/graduate-programmes-and-courses/internationally-trained-lawyers/online-nca-exam-prep/>

Osgoode Hall Law School. 2020b. "Deborah McGregor." Retrieved from <https://www.osgoode.yorku.ca/faculty-and-staff/mcgregor-deborah/>

Osgoode Hall Law School. 2020c. "Intensive Programme in Indigenous Lands, Resources & Governments." Retrieved from <https://www.osgoode.yorku.ca/programmes/juris-doctor/jd-program/clinics-intensives/indigenous-intensive/>

National Survey of Student Engagement. 2017. Bloomington, IN: Indiana University Center for Postsecondary Research.

PCLS - Parkdale Community Legal Services. 2019. "Annual Report 2018-2019." Retrieved from <https://www.parkdalelegal.org/wp-content/uploads/2019/09/2018-2019-Annual-Report-Final-.pdf>

The Peak. 2019. "Accessing Education for Precarious Migrant Students." Retrieved from <http://peakmag.net/navigating-deportation/accessing-education-for-precarious-migrant-students/>

Phipps, D., Johnny, M. and Jane Wedlock. (2015). "An Institutional Process for Brokering Community-Campus Research Collaborations". *Building Engaged Scholarship in Canada* 1(1), pp 69-86.

PrevNet. n.d. Dr. David Phipps. Obtained from: <https://www.prevnet.ca/about/team/board-of-directors/dr-david-hipps>

- Rech, Natalie. 2019. "Homelessness in Canada." *The Canadian Encyclopedia*. Retrieved from <https://thecanadianencyclopedia.ca/en/article/homelessness-in-canada>
- Research in the Faculty of Health (York University). 2020. "Yvonne Bohr." Retrieved from <https://health.research.yorku.ca/six-connected-themes/yvonne-bohr/>
- Sattler, P. 2011. *Work-Integrated Learning in Ontario's Postsecondary Sector*. Toronto: Higher Education Council of Ontario.
- School of Arts, Media, Performance & Design. 2020. "Anna Hudson." Retrieved from <https://ampd.yorku.ca/profile/anna-hudson/>
- School of Continuing Studies. 2020. "YUBridge Programme." Retrieved from <https://continue.yorku.ca/english-language-institute/programmes/bridging-program/>
- School of Health Policy & Management. 2020. "Faculty." Retrieved from <https://cds.gradstudies.yorku.ca/research/faculty/>
- Schulich School of Business. 2018. "Spotlight on Research: 10th edition."
- Schulich School of Business. 2020. "Re-Imagining Capitalism." Retrieved from <https://schulich.yorku.ca/re-imagining-capitalism/>
- Senate of Canada. 2016. "Finding Refuge in Canada: A Syrian Resettlement Story." Retrieved from https://sencanada.ca/content/sen/committee/421/RIDR/Reports/RIDR_RPT_SyrianResettlement_FINAL_E.pdf
- Silver, Daniel ed. "From the Ground Up: Growing Toronto's Cultural Sector." Martinson Prosperity Institute, University of Waterloo, University of Toronto at Scarborough, and OCAD University. Retrieved from <https://www.toronto.ca/legdocs/mmis/2011/ed/bgrd/backgroundfile-41204.pdf>
- Simonsen, Kristina Bakkær. 2019. "Us' or 'Them?' How Policies, Public Opinion, and Political Rhetoric Affect Immigrants' Sense of Belonging." Migration Policy Institute. Retrieved from <https://www.migrationpolicy.org/article/policies-public-opinion-rhetoric-immigrants-sense-belonging>
- Smith, R., Lin, S., Sidhu, R., Decock, H. and Ursula McCloy. 2016. *Transfer Pathways in Postsecondary Education: York University and Seneca College as a Case Study*. Toronto: Higher Education Quality Commission of Ontario. Retrieved from: <http://www.heqco.ca/en-ca/Research/ResPub/Pages/Transfer-Pathways-in-Postsecondary-Education-York-University-and-Seneca-College-as-a-Case-Study.aspx>
- Stahl, Ashley. 2018. "Here's How Creativity Actually Improves Your Health." *Forbes*. Retrieved from <https://www.forbes.com/sites/ashleystahl/2018/07/25/heres-how-creativity-actually-improves-your-health/#70b61fdd13a6>
- Statista. 2019. "Number of permanent resident refugees in Canada in 2017, by province or territory." Retrieved from <https://www.statista.com/statistics/549635/number-of-permanent-resident-refugees-canada-by-province-or-territory/>

- Statistics Canada. 2018. "Research Blog: Immigrant entrepreneurs in Canada." Retrieved from <https://www.statcan.gc.ca/eng/blog/cs/immigrant-entrepreneurs>
- Statistics Canada. 2017a. "Young adults living with their parents in Canada in 2016." *Census in Brief*. August. Statistics Canada Catalogue no. 98-200-X2016008.
- Statistics Canada. 2017b. *Focus on Geography Series, 2016 Census*. Ottawa: Statistics Canada. Obtained from: <https://www12.statcan.gc.ca/census-recensement/2016/as-sa/fogs-spg/Facts-cma-eng.cfm?LANG=Eng&GK=CMA&GC=535&TOPIC=7>
- Strange, C. Carney and Donna Hardy Cox (eds). 2016. *Serving Diverse Students in Canadian Higher Education*. Montreal and Kingston: McGill-Queen's University Press.
- Swidinsky, R. and Louis N. Christofides. (2010). "The Economic Returns to the Knowledge and Use of a Second Official Language: English in Quebec and French in the Rest-of-Canada". *Canadian Public Policy* 36(2): 137-158.
- Transition Year Programme (York University). 2020. "Ready for a unique opportunity?" Retrieved from <https://transitionyear.info.yorku.ca/>
- Turcotte, Martin. 2019. "Results from the 2016 Census: Education and labour market successes and challenges for children of immigrant parents." *Insights on Canadian Society*. November. Statistics Canada Catalogue no. 75-006-X.
- Turcotte, Martin. 2020. "Results from the 2016 Census: Education and labour market integration of Black youth in Canada." *Insights on Canadian Society*. February. Statistics Canada Catalogue no. 75-006-X.
- VentureLab. 2020. "York Region's Leading Tech Hub." Retrieved from <https://venturelab.ca/who-we-are/>
- VISTA (York University). 2020. "Vision: Science to Applications." <https://vista.info.yorku.ca/about-vista/>
- Villegas, Ana María and Jacqueline Jordan Irvine. 2010. "Diversifying the Teaching Force: An Examination of Major Arguments". *Urban Review* 42: 175-192.
- Wellesley Institute. 2019. "Towards Understanding and Supporting Marginalized Children and Youth in Ontario: The Case of Growing Up Indigenous." Retrieved from <https://www.wellesleyinstitute.com/wp-content/uploads/2019/06/Towards-Understanding-and-Supporting-Marginalized-Children-and-Youth-in-Ontario-The-Case-of-Growing-Up-Indigenous.pdf>
- Wells, Shannon and Geordie Hungerford. 2011. "High-growth entrepreneurship: The key to Canada's future economic success." Institute for Research on Public Policy. Retrieved from <https://policyoptions.irpp.org/magazines/innovation-nation/high-growth-entrepreneurship-the-key-to-canadas-future-economic-success/>
- Western Connecticut State University. 2020. "Benefits of Community Service." Retrieved from <https://www.wcsu.edu/community-engagement/benefits-of-volunteering/>

yFile: York University's News. 2014. "Four York profs receive Ontario Early Researcher Awards." Retrieved from <https://yfile.news.yorku.ca/2014/07/30/four-york-profs-receive-ontario-early-researcher-awards/>

yFile: York University's News. 2015. "Students in Dadaab refugee camps first to graduate with York U certificate." Retrieved from <https://yfile.news.yorku.ca/2015/10/20/students-in-dadaab-refugee-camps-first-to-graduate-with-york-u-certificat/>

yFile: York University's News. 2017. "Glendon researchers awarded funding for brain health education." Retrieved from <https://yfile.news.yorku.ca/2017/11/23/glendon-researchers-awarded-funding-for-brain-health-education/>

yFile: York University's News. 2018. "Seven York University researchers receive Early Researcher Award." Retrieved from <https://yfile.news.yorku.ca/2018/04/08/seven-york-university-researchers-receive-early-researcher-award/>

yFile: York University's News. 2019a. "Anti-bullying project on LGBTQ youth, a vital resource in schools and beyond." Retrieved from <https://yfile.news.yorku.ca/2019/05/02/anti-bullying-project-on-lgbtq-youth-a-vital-resource-in-schools-and-beyond/>

yFile: York University's News. 2019b. "York University to lead Autism Mental Health Promotion Project." Retrieved from <https://yfile.news.yorku.ca/2019/09/04/york-university-to-lead-autism-mental-health-promotion-project/>

yFile: York University's News. 2019c. "York University gains one renewed and five new Canada Research Chairs." Retrieved from <https://yfile.news.yorku.ca/2019/06/19/york-university-gains-one-renewed-and-five-new-canada-research-chairs/>

yFile: York University's News. 2019d. "York University announces nine York Research Chair appointments." Retrieved from <https://yfile.news.yorku.ca/2019/04/30/york-university-announces-nine-york-research-chair-appointments/>

yFile: York University's News. 2019e. "NSERC grant could lead to more sustainable drug discovery, development." Retrieved from <https://yfile.news.yorku.ca/2019/08/07/nserc-grant-could-lead-to-more-sustainable-drug-discovery-development/>

yFile: York University's News. 2019f. "Professor Emeritus Allan Carswell's gift to accelerate research in dementia care at York University." Retrieved from <https://yfile.news.yorku.ca/2019/09/17/professor-emeritus-allan-carswells-gift-to-accelerate-research-in-dementia-care-at-york-university/>

yFile: York University's News. 2020b. "Schulich ranked among world's top 30 schools in responsible business." Retrieved from <https://yfile.news.yorku.ca/2020/01/28/schulich-ranked-among-worlds-top-30-schools-in-responsible-business/>

yFile: York University's News. 2020c. "New Social Innovation Hub gives Jane and Finch students a space to call their own". Retrieved from <https://yfile.news.yorku.ca/2020/02/12/new-social-innovation-hub-gives-jane-and-finch-students-a-space-to-call-their-own/>

yFile: York University's News. 2020d. "Neuroscience research adds key insights on communication between neurons." Retrieved from <https://yfile.news.yorku.ca/2020/02/06/neuroscience-research-adds-key-insights-on-communication-between-neurons/>

yFile: York University's News. 2020e. "Can bilingualism protect the brain even with early stages of dementia?" Retrieved from <https://yfile.news.yorku.ca/2020/02/17/can-bilingualism-protect-the-brain-even-with-early-stages-of-dementia/>

York Institute for Health Research. n.d. "Centre for Disease Modeling." Retrieved from <https://yihr.info.yorku.ca/centre-for-disease-modeling/>

York Media Relations. 2018a. "Osgoode Hall Law School adopts new Indigenous and Aboriginal Law Requirement." Retrieved from <https://news.yorku.ca/2018/04/06/osgoode-hall-law-school-adopts-new-indigenous-and-aboriginal-law-requirement/>

York Media Relations. 2018b. "Shopify, York University partner to offer innovative computer science degree programme." Retrieved from <https://news.yorku.ca/2018/09/24/shopify-york-university-partner-to-offer-innovative-computer-science-degree-program/>

York Media Relations. 2018c. "Sanofi Pasteur and NSERC invest in \$2.6 million collaboration at York University to combat infectious diseases with Math." Retrieved from <https://news.yorku.ca/2018/01/23/sanofi-pasteur-nserc-invest-2-6-million-collaboration-york-university-combat-infectious-diseases-math/>

York Media Relations. 2018d. "York U students' Indigenous Friends App set to expand social network for Indigenous students." Retrieved from <https://news.yorku.ca/2018/04/16/york-u-students-indigenous-friends-app-set-to-expand-social-network-for-indigenous-students/>

York Region. (2016). "Municipal Comprehensive Review". Retrieved from https://www.york.ca/wps/portal/yorkhome/yorkregion/yr/municipalcomprehensivereview/lut/p/z1/tVVNc4IwEP0tPFIIZAkG4jGhH4BVO7VWzcWhmEqqBMSO9d83flyF6Si5ZJJ5-bt28wGcTRGXMBvOY-1zFW8NOcjD6chewmDoANRv0V9YNBnEfYo0I6HRkcAxi03sH2IIOhTCJ-9N_JIAxs6GPHq-E_EES8SOUMTIIsD1EkwsIDPXarXbjkVdAdbsi2JwSZJ4xDmgE6ULnaLjvpwmudJC6XvY5-XCHNZa6s3xIs0zcbouxdzUcg_ZRslEFvEyybOiFKlQa7kVpdhKsTuXUaHzUAZcWAzO8RUAXmcjr0txAlxy2ic1ANOKiRHpXVQxsNHo6MVQ5WVmej_4Z2sCqMvgXZmhmh7jZulJs_TNmhPaN6GPQvBtZuhfnCcHGA59-uBEtNeDZtU7jdKzZl8Oa9Ycdu3Lieqmk_kF5M9qxZkZvoeJ-6vR-JbT1_Djsut350Z2rFNLqu8cjStDimyYUWcvrcU73X18p_Ns2n1ySNW23L6yuz_tOPpg/dz/d5/L2dBISEvZ0FBIS9nQSEh/#.Xl2hm0N7ITY

York University at Markham. 2020. "IBM Partnership." Retrieved from <http://markham.yorku.ca/ibm-headquarters>

York University Faculty of Education. n.d. *Deaf & Hard of Hearing Teacher Education*. Obtained from <https://edu.yorku.ca/academic-programs/deaf-hard-of-hearing-education/>

York University Libraries. n.d. "Dean's Report 2015-2019."

York University Research & Innovation. 2020. "York Research Chairs." Retrieved from <https://research.info.yorku.ca/research-chairs-2/york-research-chairs/>

Youth Research and Evaluation eXchange. 2019. "YouthRex at FIVE: Research & Evaluation eXchange." YouthREX at York University. Retrieved from <https://youthrex.com/wp-content/uploads/2019/08/YouthREX-at-Five.pdf>

ySpace Markham. 2019. "2019 Annual Report." Retrieved from <https://indd.adobe.com/view/2eb64358-333e-4646-a33c-050953025169>

Zimmerman, Seth. 2014. The Returns to College Admission for Academically Marginal Students. *Journal of Labor Economics*, vol. 32 no. 4.