PARTNERING TO DRIVE ONTARIO’S RECOVERY THROUGH TALENT & INNOVATION
As the impacts of COVID-19 continue to ripple through the province, Ontarians have grappled with immense change and disruption. In many cases, the pandemic has further exposed challenges that already existed, emphasizing the need for innovative solutions.

We now must work together to find answers to big questions, such as how to be more competitive, how to support the many workers who have been displaced and the many employers struggling to hire, and how to rebuild Ontario’s economy and health-care system.

Finding solutions to these challenges will not be easy. It requires partnership and collaboration. No government, business or institution can solve these complex issues on their own.

Ontario’s universities can and will help. Universities will continue to play a critical role that helps lead our province to a more competitive economy with a highly skilled workforce, sustainable community infrastructure and a health-care system that is prepared for the challenges of today and tomorrow.

Because, as Ontario looks to rebuild and recover from COVID-19, Ontario’s universities are at the forefront of:

- **Rebuilding a World-Class Health-Care System**
  A strong workforce and innovation in health care, life sciences and medical technologies will ensure Ontario has the resources it needs to navigate through COVID-19 and be best prepared to face future shocks within the health-care system.

- **Developing Job-Ready Graduates**
  As the job market continues to change at a rapid pace, Ontario’s employers need an adaptable workforce that is future-proofed with foundational skills and innovative learning experiences for the jobs of today and tomorrow.

- **Driving Regional Economic Development**
  As Ontario’s communities look to rebuild and thrive, they need spaces and institutions that fuel the local workforce and stimulate local economies through employment opportunities, innovation and spending activities.

- **Supporting a Globally Competitive Economy**
  Through ensuring high-quality talent and innovation, Ontario will be better positioned to respond to the changing needs of the job market, while producing the innovative solutions that will continue to help the province throughout the pandemic and beyond.

- **Creating Solutions to Ontario’s Challenges**
  As universities continue to support students, communities and the province through the pandemic and beyond, investing in a high-quality university sector over the long-term will ensure they can continue to make their fullest contribution to a world that is rapidly changing and evolving.

It is why in order to fully unleash this potential, Ontario’s universities are asking that the government – through increases to university revenue sources, such as expanding spaces in high-demand programs — make critical investments in the sector today to rebuild a better Ontario for tomorrow.

Ontario’s success is founded on the capacity of people from many different sectors to work collaboratively to answer big questions and solve challenging problems.

By working together, we can navigate through this pandemic and build a brighter future — not just for the students we teach and the communities we serve, but to unlock the full potential of Ontario’s future and all who live here.
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Ontario’s universities are working to address some of the province’s most critical challenges. They will continue to partner to empower and support students, families and communities; connect people and ideas; and drive the innovation that supports job creation and brings made-in-Ontario solutions to market.

Because of these critical contributions, a sustainable world-class university education system will be more important than ever.

Vibrant universities will continue to develop adaptable talent, foster innovation, support local businesses, drive regional economic development and help rebuild our health-care system. These key ingredients are crucial to rapidly shifting labour market needs, economic growth and community resilience.

It is why in order to fully unleash this potential, Ontario’s universities are asking that the government — through increases to university revenue sources, such as expanding spaces in high-demand programs — make critical investments in the sector today to rebuild a better Ontario for tomorrow.

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Partnering to Drive Ontario's Recovery Through Talent & Innovation

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# Partnering to Drive Ontario's Recovery Through Talent & Innovation

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A healthy economy depends on a healthy population. The COVID-19 pandemic has exposed gaps in our health-care system, along with the need to increase self-sufficiency and resiliency to help protect us against future risks.

The combination of an aging population and the backlog caused by the pandemic will put renewed stress on those already working within the system and underscore the need for innovative solutions. The jurisdictions that are best prepared to face future shocks will be those that support their health-care workforce, while fostering innovation and research in life sciences and medical technologies that protect our health and save lives.

Amid these challenges, Ontario’s universities are helping rebuild Ontario’s health-care system by:

- Meeting the need for a strong health-care workforce
- Creating Ontario-made innovations in health-care and biomedical technology

As our province moves through the pandemic, universities will continue to educate the doctors, nurses and other health professionals and managers in the health-care sector that provide our communities with the highest-quality care, while conducting the research that will help Ontarians live independent, fruitful lives and reduce the growing burden placed on our province’s health-care system.

Meeting the Need for a Strong Health-Care Workforce

As the people of Ontario continue to require increasingly complex care, the province’s health-care system will depend on the many thousands of qualified, dedicated and adaptable health professionals who support an effective and sustainable system that puts the patient first. The pandemic has brought to light the commitment of health-care professionals every day and demonstrates the important role they play in supporting the health and well-being of Ontarians and our communities.

We have seen these health-care professionals work around the clock to provide critical services to Ontarians and help save lives, while medical and nursing students in these programs have volunteered to support these workers as they deliver patient care and administer vaccines. But we have also seen how many doctors, nurses and other workers are burning out and plan to leave the profession due to the challenges they’ve experienced during the pandemic.

Further compounding this growing challenge is the fact that Ontario’s emergency rooms and hospitals are already stretched to the limit, yet the health-care system will soon need to tackle the growing backlog of elective surgeries, diagnostic tests and routine procedures that were put on hold during the pandemic.

A 2021 report released by Ontario’s Financial Accountability Office estimates that it will take more than three years to eliminate the backlogs and cost approximately $1.3 billion. This need was further highlighted by the province’s $324-million investment to help run hospitals at 115 per cent to catch up on surgeries.

Ontario will need a strong pipeline of health-care workers to address the labour shortage and backlog within the health-care system as the province continues to work through
At the Forefront of Health Care

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Statistics Canada.

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Job vacancies in health
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In fact, between now and 2028, Canada will see an average of 37,971 job openings within the health-care sector per year that typically require a university education, totaling 265,800 by 2028, according to the Canadian
Occupational Projection System (COPS).
In particular, COPS is projecting that demand for physicians, dentists and veterinarians is expected to reach 68,500 job openings, while registered nurses will reach 151,000 job openings. During this same time frame, openings for managers in the health-care sector will reach 12,000.
Through unique programs and collaborations, Ontario’s universities are developing strong, highly skilled talent within the health-care sector. This in-demand talent is ready to meet the need today and into the future, ensuring Ontario’s patients receive critical care.
We are already seeing a growing interest in health-care programs offered at universities and record-high applications to these programs. Ontario’s universities stand ready to train this generation of health-care workers – the doctors, nurses and other health professionals who will help address backlogs in the short-term, as well as support patient care and innovate through future outbreaks and challenges.
These critical programs are working to ensure the province has the supply of health-care talent it needs to respond to the immediate and future needs of the health-care system.
Nurse practitioners, for example, play an important role in increasing access to community health care, and work with other local health professionals to provide a team-based approach to health-care delivery.
Registered nurses, equipped with vital nursing knowledge, clinical experience and foundational science education provide vital complex care and support to health-care teams.
In addition, universities are working to ensure that a steady supply of doctors and medical professionals, such as physician assistants, enter the health-care system to help expand service in communities and specialties where the need is highest, such as long-term care and emergency services.
Because, Ontario will need to advance its health human resource planning to ensure a wide cross-section of health-care talent and professionals are available in all regions of the province. The province’s hospitals, long-term care homes, colleges and universities recently came together to highlight the urgent need to strengthen the health-care workforce in areas such as acute care, long-term care, public health, community and home care and mental health and addictions.
Ontario’s success in fighting the COVID-19 pandemic depends on the capacity of the health-care system to treat patients, immunize the population and continue to provide public health guidance to all Ontarians.
Graduates from Ontario’s universities have and will continue to play a critical role in delivering complex patient care to Ontarians across the province, as well as finding creative solutions and innovations in health care.
These are the public health officials who have led the province through the pandemic, the members of the Science Advisory Table who have provided key insights and the doctors, nurses, physician assistants, rehab science professionals and more who have delivered frontline critical care to patients across Ontario.
All are essential for meeting the needs of patients in today’s complex health-care sector and into the future — well beyond the spotlight of this pandemic.

Innovations
To help health-care workers extend the life of personal protective equipment early in the pandemic, one Ontario university researcher managed to quickly pivot his work and create a mask-sterilizing device that enables health-care professionals to rapidly and efficiently clean multiple N95 masks at a time using UV light technology.

In addition, critical to frontline health-care workers’ ability to make informed decisions during the pandemic is having access to up-to-date and reliable data resources. An interactive online tool, developed by Ontario university students and researchers, is helping hospitals and other health-care providers estimate their capacity to manage new cases of COVID-19.

65.9% Job vacancies in health care and social assistance
Job vacancies in health care and social assistance went up by 36,400, or 65.9%, during the last quarter of 2020, bringing vacancies to a record-high of 100,300, according to Statistics Canada.

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Ontario’s universities produced the scientists, public health professionals, and policy advisors that are on the front lines in the battle against the COVID-19 pandemic. Ontario’s universities will continue to play a role in our ability to tackle complex, cross-sectoral issues, be they future pandemics, poverty and food insecurity, the consequences of climate change or the development of new energy systems. These issues necessitate the kind of engagement across disciplinary boundaries that universities make possible.

Research provided by the Business Higher Education Roundtable (BHER), Nov. 2021

isolated and grew copies of the virus responsible for COVID-19. This discovery enabled much-needed research into how the virus behaves and how it might be controlled.
University research and industry partnerships were also at the forefront of addressing Ontario’s personal protective equipment (PPE) shortage. These collaborations resulted in retooled industries that helped provide much-needed PPE resources to essential workers and made Ontario more self-sufficient.
These types of advances in health-focused research will continue to be crucial to the future of our health-care system.
By investing in research that improves quality of life and supports the fight against COVID-19, as well as by supporting the training of health-care professionals who deliver quality care to Ontarians, we can ensure each individual has access to strong and reliable care as Ontario rebuilds its health-care system.

Made-in- Ontario Oral Vaccines
To offer an alternative to needle-based vaccines, researchers at an Ontario university, in collaboration with Rapid Dose Therapeutics, are developing a made-in-Canada dissolvable oral strip that can be infused with a COVID-19 vaccine. The light-weight and portable format of the strips would make it easier to transport vaccines nationally and internationally and research shows it has the same efficacy as existing vaccines.

Creating Ontario-Made Innovations for Health-Care and Biomedical Technology

While the training of thousands of qualified health professionals is crucial to strong and accessible health care, Ontario’s health-care system will also need innovative solutions that make health-care delivery more accessible and ensure the province has the resources it needs to protect against future pandemics.
Throughout the pandemic, Ontario’s universities have played an active role in conducting ground-breaking research and making the types of discoveries that are helping the treatment, outcome modelling, testing and vaccine development of COVID-19.
Due to the type of research and innovation that was already taking place at universities, many rapid responses to COVID-19 were made possible. For example, early research in virology at one Ontario university lab in the 1970s has played a key role in informing and advancing the COVID-19 vaccine work done by University of Oxford researchers, which helped support the rapid development of vaccines to address the pandemic.
In addition, early in the pandemic, a team of Ontario university researchers successfully

Up to
17.6%
Increase in applications to Ontario university Bachelor of Science in Nursing programs
74%
Increase in applications to Nurse Practitioner programs
10%
Increase in applications to Ontario Medical Schools

If we are to learn from this crisis and leverage this newfound energy around innovation in health care, Ontario’s health-care system will also need innovative solutions that make health-care delivery more accessible and ensure the province has the resources it needs to protect against future pandemics.
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Innovations to Support Frontline Workers

56.9% Job vacancies in health care and social assistance

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In fact, between now and 2028, Canada will see an average of 37,971 job openings within the health-care sector per year that typically require a university education, totaling 265,800, according to the Canadian Occupational Projection System (COPS).

In particular, COPS is projecting that demand for physicians, dentists and veterinarians is expected to reach 68,500 job openings, while registered nurses will reach 151,000 job openings. During this same time frame, openings for managers in the health-care sector will reach 14,200.

Through unique programs and collaborations, Ontario’s universities are developing strong, highly skilled talent within the health-care sector. This in-demand talent is ready to meet the need today and into the future, ensuring Ontario’s patients receive critical care.

We are already seeing a growing interest in health-care programs offered at universities and record-high applications to these programs. Ontario’s universities stand ready to train this generation of health-care workers — the doctors, nurses and other health professionals who will help address backlogs in the short-term, as well as support patient care and innovate through future outbreaks and challenges.

These critical programs are working to ensure the province has the supply of health-care talent it needs to respond to the immediate and future needs of the health-care system.

Nurse practitioners, for example, play an important role in increasing access to community health care, and work with other local health professionals to provide a team-based approach to health-care delivery. Registered nurses, equipped with vital nursing knowledge, clinical experience and foundational science education provide vital complex care and support to health-care teams.

In addition, universities are working to ensure that a steady supply of doctors and medical professionals, such as physician assistants, enter the health-care system to help expand service in communities and specialties where the need is highest, such as long-term care and emergency services.

Because, Ontario will need to advance its health human resource planning to ensure a wide cross-section of health-care talent and professionals are available in all regions of the province. The province’s hospitals, long-term care homes, colleges and universities recently came together to highlight the urgent need to strengthen the health-care workforce in areas such as acute care, long-term care, public health, community and home care and mental health and addictions.

Ontario’s success in fighting the COVID-19 pandemic depends on the capacity of the health-care system to treat patients, immunize the population and continue to provide public health guidance to all Ontarians.

Graduates from Ontario’s universities have and will continue to play a critical role in delivering complex patient care to Ontarians across the province, as well as finding creative solutions and innovations in health care.

These are the public health officials who have led the province through the pandemic, the members of the Science Advisory Table who have provided key insights and the doctors, nurses, physician assistants, rehab science professionals and more who have delivered frontline critical care to patients across Ontario.

If we are to learn from this crisis and leverage this newfound energy around innovation in health care, hospitals and other care providers need dedicated personnel and resources to see it through. It’s time we give health innovation a proper home and make someone responsible for it.

Matthew Bromwich, CHEO, and Mitchell Kutney, Bruyère, Policy Options, July 2021

Made-in-Ontario Oral Vaccines

To offer an alternative to needle-based vaccines, researchers at an Ontario university, in collaboration with Rapid Dose Therapeutics, are developing a made-in-Canada dissolvable oral strip that can be infused with a COVID-19 vaccine. The light-weight and portable form of the strips would make it easier to transport vaccines nationally and internationally and research shows it has the same efficacy as existing vaccines.

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University research and industry partnerships were also at the forefront of addressing Ontario’s personal protective equipment (PPE) shortage. These collaborations resulted in retooled industries that helped provide much-needed PPE and resources to essential workers and made Ontario more self-sufficient.

These types of advances in health-focused research will continue to be crucial to the future of our health-care system.

By investing in research that improves quality of life and supports the fight against COVID-19, as well as by supporting the training of health-care professionals who deliver quality care to Ontarians, we can ensure each individual has access to strong and reliable care as Ontario rebuilds its health-care system.
How Ontario's Universities are Partnering to Rebuild Ontario's Health-Care System

strengthening Ontario’s health-care workforce

● With the needs of the local community and northern Ontario in mind, Algoma University launched a minor degree in Health, Wellness and Addictions to help students gain a holistic understanding of individual and community health and well-being. The minor integrates cross-cultural learnings and teachings through both Indigenous and non-Indigenous perspectives as they relate to their lived experiences and navigating the Canadian health-care system.

● New and expanded learning and research opportunities for both students and faculty have been created through a partnership between Brock University and Niagara Region Public Health and Emergency Services to help support the health and vitality of local communities. The expanded partnership leverages and engages expertise available across the university and Niagara Public Health to help identify new research areas and address complex issues affecting the health and safety of Niagara residents such as emergency services, infectious diseases and supporting an aging population.

● The COVID-19 pandemic has placed significant strain on Ontario’s health-care system, including highlighting a growing demand for nurses. In response to the regional nursing shortage, nursing students at McMaster University are joining the frontlines of Hamilton’s two hospital systems through a paid externship program. The program helps nursing students build both hard and soft skills while helping fill vital roles within community hospitals and supporting nursing staff by contributing to care planning and helping patients.

● To help support Ontario’s health-care system and its patients, nursing students at Ryerson University stepped up to assist on the frontlines of the COVID-19 pandemic in hospitals across the Greater Toronto Area. Through an externship program, students supported staff in critical departments such as intensive care and assisted with patient care and administrative duties. They also gained critical skills such as learning to work independently and adapting to changing circumstances.

● Throughout the COVID-19 pandemic, medical students at Western University supported front-line workers and members of the local community through outreach activities. A team of students founded Accel Labs, a social entrepreneurship incubator, to help strengthen the reach and impact of student-led initiatives and address pressing health-care challenges in southwestern Ontario.

● Work-integrated learning programs provide students with valuable experiential learning opportunities and help support community partners. Wilfrid Laurier University’s Community Health program is helping students forge real connections, explore public health from a holistic perspective and support understaffed industries, such as long-term care homes, through work placements and partnerships with the City of Brantford, John Noble Home and the County of Brant.
How Ontario’s Universities are Partnering to Rebuild Ontario’s Health-Care System

Through community partnerships, innovative research, mental health supports and vaccine clinics, Ontario’s universities continue to play an important role in supporting community and provincial resilience, and helping the province rebuild its health-care system.

Below are just some of the ways universities are leveraging their expertise and resources to support the health of patients and communities across the province and meet the health-care challenges of today and tomorrow.

- **Strengthening Ontario’s health-care workforce**
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Mitigating the spread of COVID-19 through research innovations

- To help prevent inflammatory responses due to COVID-19, researchers at Carleton University are using artificial intelligence to identify protein interactions to help prevent inflammation and other severe symptoms associated with COVID-19. This means fewer patients will experience life-threatening symptoms and will help manage the spread of new cases.

- To help hospitals better detect COVID-19 cases among patients, researchers at the University of Guelph, in partnership with St. Joseph’s Health Network, developed a hand-held thermal camera-based imaging tool powered by machine learning that enhances COVID-19 screening protocols by detecting higher heart rate, body temperature or breathing rate to indicate a potential COVID-19 infection. Hospital staff can then flag individuals for further testing, preventing them from unknowingly spreading the virus.

- The challenges brought on by the COVID-19 pandemic have placed a significant strain on the mental health of health-care workers. To help prevent burnout among health-care workers, researchers at Lakehead University are leveraging an artificial intelligence powered staff scheduler to help assign and delegate tasks and shifts. The platform schedules thousands of shifts in minutes, and in doing so, helps eliminate over-scheduling staff and improves patient access to timely health care.

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- In order to better predict, prevent and respond to emerging infectious diseases, such as COVID-19, researchers at York University are developing the One Health Modelling Network for Emerging Infections. One Health will leverage multidisciplinary knowledge about the connections between environmental, animal and human health to help inform disease prevention, surveillance and response which will help protect communities from future public health crises.

Continuing to support the vaccine roll-out

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Mitigating the spread of COVID-19 through research innovations

- To help prevent inflammatory responses due to COVID-19, researchers at Carleton University are using artificial intelligence to identify protein interactions to help prevent inflammation and other severe symptoms associated with COVID-19. This means fewer patients will experience life-threatening symptoms and will help manage the spread of new cases.

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Key Facts

10,000+

Graduates from health programs each year

Ontario’s universities graduate more than 10,000 students from health programs each year, according to Ontario’s universities data.

Continuing to support the vaccine roll-out

37,971

Job openings per year within health care

Between now and 2028, Canada will see an average of 37,971 job openings within the health-care sector per year that typically require a university education, totaling 265,800 by 2028, according to COPS.

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Key Facts

68,500

Job openings for physicians, dentists and veterinarians, by 2028

Demand for physicians, dentists and veterinarians is expected to reach 68,500 job openings by 2028, according to COPS.

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Key Facts

151,000
Job openings for registered nurses

Demand for registered nurses will reach 151,000 job openings by 2028, according to COPS.

98.7%
Employment rate for students who graduate from university nursing programs two years after graduation

Students who graduate from Ontario’s universities’ nursing programs have a nearly 98% employment rate two years after graduation, according to the Ministry of Colleges and Universities’ Ontario’s Universities Graduate Survey of 2017 graduates.

Supporting community access to health care

- Knowing when and how to assist youth experiencing a mental health crisis could save lives. Researchers at Nipissing University, in partnership with the North Bay Police Service and Hands the Family Help Network, developed an artificial intelligence powered smartphone software for police officers that uses algorithms to assess risk and behavioural levels. Once implemented, the software will connect police with community partners to help streamline treatments for youth experiencing a mental health crisis.

- A free and accessible peer-support web and smartphone-based chatbot powered by artificial intelligence was developed by researchers at Ontario Tech University to help address mental health challenges faced by students, faculty, staff and the local community brought on by the COVID-19 pandemic. The app helps users anonymously and interactively share their pandemic struggles and triumphs while helping foster feelings of solidarity and empathy.

- Understanding the needs of Ontario’s seniors is essential to enhancing their quality of life while living in long-term care. To help advance teaching, research and innovation around aging and long-term care, Trent University is working with the retirement home company peopleCare Communities to build a university-integrated Seniors Village that will offer hands-on learning and training opportunities for students and provide an additional housing option for seniors in the community to help meet regional demand.

- To eliminate the need for invasive methods of glucose monitoring for people with diabetes, researchers at the University of Waterloo are leveraging nanomaterials to develop a new method of glucose monitoring that will test saliva instead of blood and provide more accurate results through effective detection of smaller amounts of glucose compared to existing methods.
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The pandemic brought unexpected shocks to the labour market. More and more Ontario workers and employers are now looking at ways they can best protect against future shocks and job displacement.

As the labour market continues to change and evolve at a rapid pace, one thing is certain: to emerge successfully from the current crisis, Ontario’s workforce needs to be equipped with adaptable skills to succeed in the jobs of today and tomorrow and weather economic downturns.

Ontario’s universities are providing traditional and non-traditional learners — the province’s future makers — with the foundation, as well as the reskilling and upskilling opportunities, to transition into new roles and adapt as the nature of work continues to change by:

- Developing the soft skills that are as vital to employers as hard skills
- Ensuring students access university

While the pandemic has had an impact on the labour market, we have seen a correlation between unemployment rates and education level. Recent economic recessions, for example, have highlighted that jobs that require a university education appear to be more adaptable and resilient to job market shifts.

During the last four economic recessions, Canadians with a Bachelor’s degree or higher were less than half as likely to experience job loss, according to Statistics Canada. Additionally, Statistics Canada data for individuals aged 25 and over shows that over the last 30 years, the average unemployment rate for those with a university degree was 4.6 per cent, while the average unemployment rate for those with a postsecondary certificate or diploma was 5.7 per cent and the economy-wide average was 6.2 per cent.

The job losses associated with COVID-19 and recent economic recessions highlight the need to ensure Ontario’s workers — both new graduates and mid-career workers, alike — are prepared for the unexpected shocks to the job market.

An adaptable skillset equips students with the right tools to meet job market needs and seize new opportunities that emerge as our information economy rapidly changes.

With the changing world of work, and how we don’t necessarily stay in one industry or one specialization, even over our careers, having those base skills like critical thinking, strong communication skills, written verbal skills, and being able to problem solve and come up with solutions that can be applied to any industry - helps your ability to adapt and learn in new environments.”

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At the Forefront of Job Creation

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The average monthly layoffs rate during the onset of the pandemic (February-March to March-April 2020) was 7.2% for Canadians with a Bachelor’s degree or higher, compared to 15.1% for those whose educational attainment was below a Bachelor’s degree.

15.1% Unemployment rate for Canadians with an education level below a Bachelor’s degree in Spring 2020

7.2% Unemployment rate for Canadians with a Bachelor’s degree or higher in Spring 2020

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Applying Soft Skills
To better understand how students managed and mitigated the changes brought on by the COVID-19 pandemic, an undergraduate student researcher applied soft skills, such as social perceptiveness and critical thinking, to explore the relationship between undergraduate student well-being and coping mechanisms used while in school. The research has been made available to university departments across the province to help administrators better support student well-being online and offline.

Soft Skills as Vital to Employers as Hard Skills
As we continue to navigate an unpredictable labor market, employers are in search of quality candidates who are well-rounded and can demonstrate strong soft skills, such as the ability to communicate well with others, show initiative and responsibility, as well as being able to work well in teams.

In fact, a 2018 RBC assessment of skills rankings across 300 occupations and 2.4 million expected job openings found an increasing employer need for critical thinking, co-ordination, social perceptiveness, active listening and complex problem-solving skills.

With a high demand for transferrable skills from the province’s employers and a commitment to help students develop resiliency in a changing world, Ontario’s universities are ensuring every student graduates job-ready with the adaptable skills that will help them become recession proof.

These skills have become all the more important, as more than 25 per cent of Canadian jobs are expected to be heavily disrupted by technology in the coming decade, according to RBC’s Humans Wanted: How Canadian Youth Can Thrive in the Age of Disruption. In addition, half of these jobs are going to a significant overhaul of the skills required.

A strong foundation and diverse toolkit of transferrable skills will help both students and mid-career workers succeed in a rapidly changing economy. In On Test: Skills, the Higher Education Quality Council of Ontario (HEQCO) notes, “For mid-career workers whose jobs may disappear, the key to successful and speedy re-entry into the labour market is a strong foundation of transferrable skills that will help them pivot into a new work environment.”

In addition, it will help Ontario’s employers remain competitive and drive growth during this time of change. According to research provided by the Business + Higher Education Roundtable (BHER), companies say they need workers with technical, human and business skills (see chart below).

![Chart showing technical, human, and business skills required by employers.](chart.png)

Technical Skills
- Leadership
- Team-building
- Communication
- Critical thinking
- Creativity
- Open-mindedness
- Global experience

Human Skills
- Leadership
- Flexibility
- Adaptability
- Relationship building/ collaboration
- Willingness for lifelong learning
- Written and verbal
- Learning skills
- Empathy
- Global experience

Business Skills
- Entrepreneurialism
- Innovation and creativity
- Business management
- Problem solving
- Accounting
- Marketing
- Advertising
- Knowledge of economics, market forces
- Sales
- Business administration
- Sustainable finance

That’s been a notable employer need over the past five to seven years: those other in-demand ‘non-technical’ skills, which people often call power skills, business skills, or communication skills. I like to refer to them also as key transferrable skills — those that are needed for success from job to job. A key in-demand skill sought by employers is critical thinking. University students are developing this skill throughout their education. Which gives them an edge in the workplace, for sure.”

Sasha St. Onge, Toronto Finance International (BHER, Nov. 2021)

The advantage we have in Toronto, given the access we have to universities, the talent pool is phenomenal. And the opportunity for us to think out of the box and to have multidisciplinary teams involved in finalizing a product is amazing.”

Tony Chahine, CEO, Myant

To succeed in the knowledge economy the pipeline of young talent will need to be dynamic and resilient, equipped with a broad suite of technical and soft skills.

Future-Proof: Preparing Young Canadians for the Future of Work, The Brookfield Institute, 2017

Partnering with Local Businesses
As many small businesses and local industry needed, and continue to need, support during the pandemic, a group of Ontario university students applied their critical thinking and strategic skills to work on short-term projects for approximately 25 local businesses in the Niagara region. From charitable organizations and restaurants to cleaning and construction companies, the students delivered strategic solutions to problems the businesses were trying to solve.

Ontario’s universities continue to ensure students are equipped with the transferrable skills that will provide them with the life-long foundation and ability to adapt as the work landscape continues to change throughout their careers.

Ensuring Students Access University
In order to develop the types of skills employers are looking for and have the opportunities that will prepare them for the changing workforce, both traditional and non-traditional learners need to be able to access a high-quality university education that equips students with life-long skills.

These students are using their talent and skills to secure the type of employment that will help build the economic growth, strong communities and innovation Ontario needs to prosper. They go on to become the innovative entrepreneurs that create new jobs and companies; the engineers that design the roads and bridges of a prosperous province; and the computer scientists who work with local farmers to develop smarter operations in agriculture. While statistics show that university graduates experience positive employment outcomes in
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56 Distinct elements of talent where participants with a university degree had higher than average proficiency scores

A recent McKinsey survey found participants with a university degree had higher than average proficiency scores across 56 distinct elements of talent, suggesting those with higher levels of education are better prepared for changes in the workplace due to the adaptability of their skillset.

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<td>Supply chain systems</td>
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The advantage we have in Toronto, given the access we have to universities, the talent pool is phenomenal. And the opportunity for us to think out of the box and to have multidisciplinary teams involved in finalizing a product is amazing.”

Tony Chaline, CEO, Myant

That’s been a notable employer need over the past five to seven years: these other in-demand ‘non-technical’ skills, which people often call power skills, business skills, or communication skills. I like to refer to them also as key transferrable skills — those that are needed for success from job to job. ... A key in-demand skill sought by employers is critical thinking. University students are developing this skill throughout their education. Which gives them an edge in the workplace, for sure.”

Sashya D’Souza, Toronto Finance International (BHER, Nov. 2021)

To succeed in the knowledge economy the pipeline of young talent will need to be dynamic and resilient, equipped with a broad suite of technical and soft skills.”

Future-Proof: Preparing Young Canadians for the Future of Work, the Brookfield Institute, 2017

Ensuring Students Access University
In order to develop the types of skills employers are looking for and have the opportunities that will prepare them for the changing workforce, both traditional and non-traditional learners need to be able to access a high-quality education that equips students with life-long skills.

These students are using their talent and skills to secure the type of employment that will help build the economic growth, strong communities and innovation Ontario needs to prosper.

They go on to become the innovative entrepreneurs that create new jobs and companies; the designers that design the roads and bridges of a prosperous province; and the computer scientists who work with local farmers to develop smarter operations in agriculture. While statistics show that university graduates experience positive employment outcomes in...
Many students faced significant disruption at the beginning of the pandemic, particularly disruption to their part-time or full-time employment. To ensure students were able to focus on their studies, several Ontario universities created a student emergency support fund, providing immediate financial assistance to those facing financial hardship. The emergency fund is available to help students secure food and other essential items.

95.6% Employment rate of university graduates after two years

Times of change, approximately 30 per cent of Ontarians currently do not pursue any form of higher education, including colleges, skilled trades and apprenticeships, according to HEQCO.

Further supporting access to a high-quality education and enriching campus experience for all Ontarians who want to pursue a university education will help strengthen their ability to continue to support their local communities, reduce short-term unemployment rates and increase long-term participation in the workforce.

Government and educators must continue working together to remove barriers that prevent some students from entering, participating and thriving at university, ensuring all Ontarians who are willing and qualified can access a university education and the learning and economic opportunities that come with it.

Ontario’s universities remain focused on increasing access for students from low-income families and under-represented populations in Ontario, and provide more than $1.1 billion each year in student scholarships and bursaries to those most in need.

In addition, to help address the systemic and structural challenges many students from marginalized groups face accessing postsecondary education, universities are engaging with campus and local communities and have developed action plans aimed at redressing the inequalities that exist within the sector today.

These systemic issues also extend beyond access to the campus experience once students are at university. Through strategic planning, universities have worked with students, faculty, and staff, as well as external community partners to gain insights into a range of topics, such as campus safety, particularly against gender-based and other forms of violence, culturally sensitive supports, in-class participation opportunities, retention, curricular content and design and research supervision and mentoring requests, in order to ensure meaningful action towards fully inclusive communities.

These plans include developing initiatives that both increase access to a university education, as well as on-campus supports and resources that ensure the safety and inclusion of students, such as women, Indigenous students, those who face racial, gender or sexual discrimination and students with disabilities.

With representation from each university at the table, Ontario’s universities have also recently created a sector-wide reference group aimed at advancing equity, diversity and inclusion goals and improving outcomes in the sector.

There is still work to be done to improve access across the sector.

Universities will continue to work with government and other stakeholders to help increase participation rates and advance initiatives that tackle inequality within the sector to ensure safe and inclusive campuses.
Supporting Students in Need

Many students faced significant disruption at the beginning of the pandemic, particularly disruption to their part-time or full-time employment. To ensure students were able to focus on their studies, several Ontario universities created a student emergency support fund, providing immediate financial assistance to those facing financial hardship. The emergency fund is available to help students secure food and other essential items.

95.6%
Employment rate of university graduates after two years

University graduates have a 95.6% employment rate after two years and 89.6% of graduates employed full-time find work that is either closely or somewhat related to the skills they developed at university, according to the Ministry of Colleges and Universities’ Ontario’s Universities Graduate Survey of 2017 graduates.

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Universities will continue to work with government and other stakeholders to help increase participation rates and advance initiatives that tackle inequality within the sector to ensure safe and inclusive campuses.
The uncertainties of the pandemic significantly contributed to employee well-being, particularly working parents. To help local workers and parents in communities across Ontario, university researchers conducted interviews with working parents, assessing their mental and emotional strain. Their research is helping inform policymakers and employers, as they look to best support Ontario’s workers.

There’s no question that our province’s communities and regions need support as they begin to rebuild from COVID-19. Ontario’s universities can help.

The cities and towns that universities call home are feeling the effects of local demographic shifts brought about by aging populations and new technologies, while small businesses and local industry continue to navigate the disruption caused by the pandemic.

With deep roots in their local communities — roots that will continue to grow — universities serve as key economic drivers, often acting as large employers and local purchasers.

Even beyond their hometowns and cities, the ripple effect of universities is felt in regions throughout the province — they become key pieces of the social and economic infrastructure that makes up Ontario.

Universities play a critical role in fostering a vibrant ecosystem in the community by bringing together community members and partnering with local municipalities and businesses to help improve quality of life for Ontarians.

Partnerships can be as community-oriented as university chefs collaborating with local food organizations to help feed the region’s most vulnerable citizens and address food insecurity, or as broad-reaching as a municipal partnership that is developing resilience planning to reduce greenhouse gas emissions, bolster the economy and improve social equity.

As the pandemic continues to impact our local economies, communities and social well-being, Ontario’s universities remain committed to helping build the social, economic and physical infrastructure of the province’s communities by:

● Acting as strong economic drivers in local communities
● Building infrastructure at the centre of Ontario’s regions

Universities will continue to be places where students and faculty regularly volunteer in their communities, creating new bonds with local residents; and where universities partner with local organizations to offer community-service learning and programming for all members of the community.
At the Forefront of Regional Economic Development

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Advancing Local Industry

Fostering innovative projects, developing new products and bringing them to the marketplace helps to diversify and strengthen northern Ontario’s economy. A research facility at one Ontario university has been specifically designed to support this work. It’s home to four innovation labs, a materials analysis lab and environmental and soil mechanics lab — all with the goal of providing students with the opportunity to train on specialized instruments and advance local industry in engineering, mining and more.

The Conference Board of Canada’s recent report How Ontario Universities Benefit Regional Economies: Assessing the Regional Economic Impacts of Universities in Ontario highlights the many ways that Ontario’s universities’ activities impact the province’s economy, including those stemming from institutions, students, visitors and alumni, such as:

- **487,639** Jobs impacted by Ontario’s universities’ spending activities
- **$45 billion** to the GDP
- At least **$50.6 billion** in GDP resulting from the higher human capital development of alumni

Strong Economic Drivers in Local Communities

Ontario needs a strong economy that keeps our industries growing, helps our diverse regions thrive and supports the health and social services of our communities.

Due to their critical position across many of Ontario’s regions, universities have a vital role to play in the economic recovery of Ontario’s communities.

As major employers and large purchasers, Ontario’s universities are often one of the top five employers in the region. They collectively employed more than 138,600 Ontarians in 2020, according to Statistics Canada, and purchase approximately $5 billion in goods and services each year (data provided by the Council of Ontario Finance Officers).

In addition, students, faculty and staff contribute to local economies through investments, purchasing local goods and services and attracting visitors and international students who invest in the region.

The additional income of university graduates, equivalent to more than six per cent of Ontario’s GDP, according to the Conference Board of Canada, enables them to economically contribute to regions across Ontario in significant ways. These additional earnings support local jobs and economies and help community arts and culture thrive.

As the province continues to navigate the impacts of COVID-19 in the years ahead, the regional economic impact of Ontario’s universities will be needed more than ever to ensure a path to prosperity for all of the province’s regions.

Investment in universities is an investment in the thriving communities of Ontario in significant ways.
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The Regional Economic Impact of Ontario’s Universities

Ontario’s universities have a vital role to play in the economic recovery of Ontario’s communities and they contribute to the provincial and regional GDP in substantial ways. The December 2021 Conference Board of Canada report, How Ontario Universities Benefit Regional Economies: Assessing the Regional Economic Impacts of Universities in Ontario, tells us that the combined impact of spending from Ontario university activities ($45.6 billion) and human capital development ($50.6 billion) is $96.2 billion annually, corresponding to nearly 12 per cent of provincial GDP during the 2018-2019 period.

The report demonstrates the effects of spending related to university activities, developing talent, leaders and innovators, and bettering the lives of Ontarians through research. In fact, university research and development (R&D) over the years is responsible for a $30.6-billion increase in GDP in 2018 compared to 1971. Additional investments in R&D will boost total factor productivity for years to come and will contribute to Ontario’s global competitiveness.

**Regional Economic Impact**

<table>
<thead>
<tr>
<th>Greater Sudbury</th>
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$45.6 billion generated through spending from university activities

$50.6 billion generated through human capital development

**Figure 1**

The combined impact of spending from university activities corresponds to 11.7% of provincial GDP during the 2018–19 period.
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Source: The Conference Board of Canada
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Source: The Conference Board of Canada
Many communities outside Ontario’s urban centres lack access to important digital infrastructure — an issue that has become all the more crucial with COVID-19 causing many to work remotely. Through a partnership with Bell Canada, an advanced 5G research centre at one Ontario university is helping shape smarter cities and communications systems, boost drone security, better manage business continuity and more.

**Digital Infrastructure for Business & Communities**

Infrastructure at the Centre of Ontario’s Regions

Building, maintaining and modernizing strong physical and knowledge infrastructure, such as universities, schools and libraries, within Ontario’s communities creates jobs in construction, maintenance and more, employing members of the local workforce and fueling associated supply chains.

University infrastructure is often at the very heart of Ontario’s regions. The type of spaces found on campuses, such as community centres, gyms, pools, theatres and stadiums, bring people together, enrich the everyday experience for many Ontarians and help them live healthier lives.

Many small businesses and community members also access innovative facilities and spaces where they can test ideas and scale operations, providing communities and local industry with necessary resources to recover from the pandemic.

The activities that take place at these facilities not only improve the lives of Ontarians, but also attract the talent and investment communities need to create new business opportunities and jobs.

In addition, technology-enhanced learning environments and cutting-edge facilities increase a region’s competitiveness by supporting the development of a highly skilled workforce and conducting ground-breaking innovation.

They enable students to learn in modern classrooms that will prepare them for in-demand jobs and the type of work valued by employers, as well as provide them with the innovative spaces to create, invent and turn their visions into realities.

Infrastructure on campuses also enables ground-breaking innovation to take place. Whether researchers are addressing the climate crisis or improving local health care, they are at the forefront of innovation at home and on the world stage.

**Research infrastructure is critical to ensuring Ontario can continue to play a role as an innovation leader in wide-ranging fields, from Indigenous research to neurobiology and advanced robotics — ultimately improving our economy, environment and quality of life.**

The Facilities Renewal Program (FRP) is one program that provides important funding for university infrastructure through support for deferred maintenance projects, helping campuses maximize efficiencies, operate smarter and renew their facilities.

But as universities look to retrofit and redesign spaces in a new COVID-19 reality, investment in infrastructure is becoming more critical and the amount of funding needed to retrofit buildings is growing.

**52%**

Increase in enrolment in Ontario university STEM programs

Since 2009, there has been a 52% increase in enrolment in Ontario university STEM programs, according to universities’ enrolment data — these in-demand programs are expected to continue to grow and rely heavily on new and updated classrooms.

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Research infrastructure is critical to ensuring Ontario can continue to play a role as an innovation leader in wide-ranging fields, from Indigenous research to neurobiology and advanced robotics — ultimately improving our economy, environment and quality of life.
Helping Small Businesses Adapt

To help small businesses and entrepreneurs become more agile as they continue to face the challenges of COVID-19, one Ontario university established the COVID-19 Small Business Support Centre with the help of 100 Master’s and undergraduate students. Through paid summer placements, these students were hired to help local businesses move their products, services and operations online.

$420 million
Annual infrastructure & maintenance costs

To maintain the current condition of buildings, Ontario’s universities need $420 million annually, but more is required for universities to improve the overall condition of their infrastructure.

$10+
Estimated gap between government funding for maintenance and repair

The gap between government funding for maintenance and repair and the projected costs is estimated to exceed $10 billion over the next 10 years.

The Auditor General has noted that the serious backlog of repairs in the postsecondary sector — costing an estimated $4.6 billion (Facilities Condition Assessment Task Force data, October 2019) — needs to be addressed through long-term planning. While universities account for 75 per cent of this backlog in costs, universities only receive 56 per cent of the provincial funding.

The FRP makes up a fraction of the cost needed to keep pace with basic repairs.

In 2018–19, universities contributed more than $322 million to FRP-eligible projects that would upgrade classrooms and learning environments and address the backlog of deferred maintenance that exists, compared with the $50 million provided by government.

While, together, these contributions equal $372 million, universities need at least $420 million annually to maintain the current condition of buildings.

Investment in leading-edge infrastructure will help enhance the student learning experience, spur innovation and economic growth, and stimulate our local economies — critical components in helping Ontario remain competitive.

Strong regions and municipalities will drive a strong economic recovery. As large employers, local purchasers and spaces where the local workforce is fueled and innovation stimulates local economies, Ontario’s universities can play a leading role in supporting Ontario’s communities, as they rebuild and thrive in a post-pandemic world.
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To meet the growing demand for data scientists, an Ontario university recently introduced a new undergraduate degree in data science to help students fill the regional skills gap in Northern Ontario. The program leverages cross-disciplinary work-integrated learning and research opportunities to provide students with the hands-on skills they need to meet the needs of employers.

Ontario needs talent and innovation to increase its ability to compete globally, fuel economic growth and improve quality of life for all Ontarians.

As the impacts of COVID-19 continue to impact businesses across Ontario, employers will need a strong workforce to fill the jobs of today and adaptable talent that can navigate the shifting economies of tomorrow. Industries must continue to leverage partnerships with innovators who can help find the made-in-Ontario solutions we need for a strong recovery.

By developing talent and a skilled workforce, as well as conducting ground-breaking research and commercializing innovative discoveries, Ontario’s universities are working to ensure the province remains competitive and attractive to investment by:

- Developing the talent supply for Ontario to prosper
- Conducting and commercializing ground-breaking research
- Acting as innovation hubs, critical connectors and job creators

Through talent and innovation, the province will be better positioned to respond to the changing needs of the labour market, while producing the type of Ontario-made solutions that will continue to help our province throughout the pandemic and beyond.

Skills for High-Demand Fields

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The Talent Supply for Ontario to Prosper

The province must ensure Ontario remains a desirable place to live and work because competition for the right talent is fierce in an increasingly globalized world. Labour and production can be outsourced anywhere.

While the future may present jobs that we have not yet imagined, we are already seeing increasing levels of demand amongst certain STEM and non-STEM occupations that typically require a university degree, such as engineers, computer programmers and health-care professionals.

Demand for these high-quality jobs requiring a university degree will only increase.

For example, Canada is projecting that the country will need almost a quarter million STEM graduates from now until 2028, including 57,500 engineers; 72,700 computer programmers, software engineers and designers; and 37,800 managers in engineering, architecture, sciences and computer sciences, according to COPS.

In addition, COPS projected more than 265,000 university graduates in health care will be needed from now until 2028. However, since these projections were made, the combination of an aging population and the backlog of surgeries and procedures caused by the pandemic has only put more stress on those already working within the health-care system, including physicians, nurses, medical scientists and other health-care professionals. This has further highlighted the critical need for a strong health-care workforce that will help contribute to a strong economy.

The failure to meet these demands will undermine both Ontario’s and Canada’s economic growth. It is critical that the federal and provincial governments work together to help ensure our economy has the highly skilled university graduates needed to drive innovation, rebuild our health-care system, attract investment and compete globally.
At the Forefront of a Globally Competitive Economy

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Innovations in Cybersecurity

With Canada experiencing a 7% annual growth rate in cybersecurity labour demand, one Ontario university’s cybersecurity catalyst is working to fill this gap by offering three streams of training programs for those looking to build their careers in cybersecurity. The industry is expected to reach USD $200 billion by 2023, according to Rogers Cybersecure Catalyst.

In addition, some businesses and home offices have become more susceptible to security breaches and outages due to additional strains on cloud-based networks and increased network traffic from more employees working from home. To make connections more secure — and networks more resistant to cyber-attacks, power outages and congested data paths — researchers at another Ontario university are using artificial intelligence and partnering with local industry. The team is working to detect anomalies in network data-flow patterns to help networks predict where traffic jams and potential security breaches are most likely to occur.

Universities are critical to the provision of talent that we look to hire….We continue to successively challenge [graduates] and to move up the ladder and become more and more senior managers as they go. So we are looking deep into our future. Every time we have an intake from universities, we’re looking at our future leadership.”

David Hudock, PCL Construction (BHER, Nov. 2021)

A highly skilled workforce with the transferrable and cross-disciplinary skills to meet the changing needs of the job market will position Ontario as a jurisdiction that can attract investment and compete with the best that Europe, India, China or the U.S. has to offer. Ontario’s universities are leading the development of this talent, providing students with the critical skills for the jobs of today and tomorrow in these research and development-intensive sectors.

In fact, much like Silicon Valley, Toronto, Ottawa and Waterloo have become high-tech ecosystems, attracting companies like Amazon, Uber, General Electric and Stripe who are looking to invest in this highly skilled talent.

Both Wayfair and DoorDash, for example, recently announced they would add hundreds of jobs to Toronto by setting up new engineering sites — choosing Ontario for its top tech talent.

For example, Toronto now has the third-largest tech talent pool in North America with the fastest growth of tech workers, according to the 2021 Scoring Tech Talent Report, while the 2021 Global Startup Ecosystem report found that the Toronto-Waterloo startup ecosystem has risen four spots in the world ranking to number 14.

In general, Ontario now has the second-largest IT cluster, as well as financial hub in North America, according to InvestOntario. In fact, high-quality job openings that typically require a university degree in finance and related sectors are expected to reach 118,400 by 2028, according to COPS.

Ontario’s universities are responding to this market demand and increasing student spaces in high-demand fields, such as STEM and health care. They have seen a 98 per cent increase in enrolment in math and physical science, 58 per cent in engineering and applied science and 31 per cent in health care since 2010, according to universities’ enrolment data.

In fact, enrolment in STEM programs has increased from 30 per cent of total enrolment to 38 per cent over the last 10 years, according to universities’ enrolment data.

Ontario’s universities will continue to support the development of a workforce that has the skills and adaptability to power the province’s economy of tomorrow.

“[Canada] is the number-one work destination for many of the types of people that countries prize, including those with Masters or PhD degrees, those with digital training or expertise, and those younger than 30.”

Decoding Global Talent, Boston Consulting Group
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Increasing Enrolment in STEM and Health Care at Ontario’s Universities

Ground-breaking Research in Wastewater Testing

Moving an innovation from lab to product can be complicated. In order to transfer innovation and technologies that improve quality of life and create jobs into the marketplace, an Ontario university’s commercialization service is aiming to make the process smoother and more efficient. The team of professionals offers supports, such as sorting legal issues relevant to licensees and investors, assessing opportunities and barriers to commercial entry and helping protect intellectual property rights.

In addition, to help reduce visits to the doctor and improve access to health care, another Ontario university research project is developing a medical check-up app, similar to a virtual visit to a doctor’s office. The quick scan of a patient’s face will provide nurses with the patient’s temperature, blood pressure, oxygen level and many other readings, saving time and minimizing the chances that health-care workers and other patients get infected.

Commercial-izing Ontario-Made Ideas

$500 million
Investment by Roche Canada over five years in 500 highly skilled and specialized full-time positions

Due to the attractiveness of Ontario’s highly skilled talent, as well as recognizing its manufacturing capacity and ground-breaking innovation, Hoffmann-La Roche Limited (Roche Canada) invested $500 million over five years in 500 highly skilled and specialized full-time positions in the province.

Conducting and Commercializing Ground-Breaking Research

In a post-pandemic Ontario, fostering an environment where researchers can continue to conduct curiosity-driven research, make discoveries that support the health and well-being of Ontarians, maximize opportunities for innovation and better collaborate to solve pressing issues will benefit all Ontarians and further increase Ontario’s competitive advantage.

We are already seeing the positive impacts university research is having on Ontario’s economy. A recent report by the Conference Board of Canada found that Ontario university research and development over the years is responsible for a $30.6-billion increase in Ontario’s GDP in 2018 compared to 1971. These benefits will become even more important as Ontario competes in a more competitive global economy.

Whether it’s by partnering with small businesses to help mitigate the impacts of COVID-19, working with local industry to develop made-in-Ontario solutions that are unique to the region, or by supporting individuals, families and vulnerable populations, researchers and faculty members at Ontario’s universities have demonstrated how inextricably linked they are to the communities they serve throughout the pandemic.

For example, campus research and innovation helped mobilize Ontario’s manufacturing and innovation might throughout the pandemic by providing made-in-Ontario solutions. Beyond the pandemic, the social and economic impacts of university research on Ontarians have been numerous. It is critical that this important work can continue in today’s rapidly changing economy.

To remain competitive in today’s global marketplace, the province must incent research and development and the commercialization of intellectual property in partnership with the private sector.

Only by fostering discoveries in key research areas, such as radiation treatment, flood resilience and artificial intelligence, can universities move research from the lab to both the private sector and public sphere, where it can benefit all Onarians.

In fact, the benefits of maximizing commercialization have ripple effects throughout Ontario’s regions — well beyond royalties and licensing income. They lead to an improved quality of life for Ontarians, as well as wealth creation throughout the province from multinational enterprises and increased tax revenue.

To further encourage the movement of research and discovery from ideas to market, Ontario’s universities are working to foster a culture of risk-taking and entrepreneurship, to fuel the innovation pipeline and are partnering with industry to encourage investment in early-stage innovation — all in order to help ensure this ground-breaking research is

This investment will create new and exciting employment opportunities, including for recent graduates of Ontario’s strong academic ecosystem who will have the opportunity to impact the development of Roche’s medicines from early stages through to being supplied to patients around the world.”

Roche Canada, October 2020

Source: Ministry of Colleges and Universities
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Global Leadership in High-Growth Fields

With the global cleantech market projected to exceed $3.3 trillion by 2022, a cleantech hub at an Ontario university and the city is bringing together business, researchers, students and start-ups to commercialize innovative cleantech research, equip students with job ready skills, as well as bolster the region’s economic growth, attract investment and create jobs.

As financial technology is a rapidly growing field in Ontario, another Ontario university is partnering with a regional technology leader to create a pipeline of top tech talent in the region. Students enrolled in the university’s computer science program, particularly those in the Master of Applied Computing program, can participate in a series of workshops focused on financial technology.

4,700
Jobs created from student-supported and student-created start-ups between 2014 and 2016

Between 2014 and 2016, more than 280,000 students used campus-linked accelerators and incubators. These students created or supported more than 2,200 start-ups, which directly resulted in more than 4,700 jobs in Ontario during this time, according to the UBI Global Impact Study, Ahead of the Curve.

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Innovation Hubs, Critical Connectors and Job Creators

Strong innovation ecosystems bridge the gap from discovery to commercialization, help firms grow and scale, advance local industries and turn ideas into products, services and jobs in Ontario. Investment into regional innovation hubs will support more industry-research partnerships, helping create the type of breakthroughs that make our economy more self-sufficient and results in new jobs, products and services in a variety of sectors, including advanced manufacturing, agriculture, life sciences, information communications technology and automotive.

Further support will also better help large and scaling Canadian companies, such as Shopify and ecobee, as they continue to develop local talent, create jobs across Ontario and continue to enhance their ability to utilize and commercialize intellectual property.

We are already seeing how the ripple effect of innovation ecosystems is not only supporting job creation, but also attracting interest and investment from the global marketplace.

These types of investments further highlight Ontario as a leader in fast-growing sectors, such as clean technology, cybersecurity, life sciences and artificial intelligence (AI).

For example, the province is a leader in the burgeoning life sciences sector that is advancing new medicines, green fuels and agricultural innovations due to the highly skilled talent and innovation that exists right here in Ontario. The sector currently provides 66,000 highly skilled and high-paying jobs in Ontario, according to the government of Ontario. With a more than $53-billion contribution to Ontario’s GDP and a significant number of companies tied to life sciences — approximately 44 per cent of Canada’s total — the province is well-positioned to ensure...
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Creating Made-in-Ontario Solutions

Onsite point-of-entry screening can reduce the spread of COVID-19 by up to 75%. It’s why an Ontario university is partnering with data sensory company SmartCone Technologies to test a high-tech system capable of real-time, multi-symptom screening for the virus. The screening system provides private, rapid and reliable information, and has the potential to be used in high-traffic locations, such as sports stadiums and amusement parks.

Building regional capacity for innovation is fundamental to productivity and growth. This means improving commercialization and technology adoption, strengthening regional innovation centres, expanding broadband internet access, and facilitating cluster development."

Ontario Chamber of Commerce, The Great Mosaic: Reviving Ontario’s Regional Economies

new discoveries can not only have immediate impact on the everyday lives of Ontarians, but also ensure the province can be at the forefront of the next revolution.

In addition, the Vector Institute’s latest Ontario AI Snapshot found that the province’s AI ecosystem continued to grow in 2020–21, indicating that the sector effectively responded to the challenges of the pandemic. In fact, more than 7,200 new AI jobs were created during this time, while the sector received more than $2 billion in venture capital investment. The industry — one that requires a mix of highly skilled talent and ground-breaking research — is only expected to continue to grow.

A strong workforce that can fill the job gaps of today and tomorrow, coupled with dynamic innovation ecosystems that continue to drive discovery, commercialization and investment are key ingredients for Ontario’s economic recovery.

Together, we can think beyond what is possible today to develop the made-in-Ontario solutions that will help create good jobs for today and for future generations in tomorrow’s rapidly evolving economy. ●
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Graduating Job-Ready

To ensure students are provided with valuable work-integrated learning experience, one Ontario university is partnering with a municipality and providing students with the opportunity to engage directly with city leaders. The program will help students gain more hands-on experience about urban issues and policy development, while helping the municipality conduct research and tackle urban challenges.

Today’s students — the province’s future makers — are entering an ever-evolving economic, technological and social landscape.

To help them navigate these changes, Ontario’s universities continue to adapt their programming to meet student needs, such as work-integrated and inter-disciplinary learning, as well as provide additional resources and support systems for student mental health and well-being that will help our students prepare for today and tomorrow.

For example, universities are working to ensure students graduate job-ready by developing micro-internships, work placements, co-op programs and other work-integrated learning programs at an unprecedented scale — the types of experiences that both students and employers value. These approaches allow universities to be more responsive to the diverse needs of students graduating into an increasingly complex labour market.

To be fully equipped for the new realities and complexities of a changing social and economic landscape, the need for student mental health services and resources on campus is only increasing. Prior to the pandemic, the total number of students registering a mental health disability as their primary disability increased by 151 per cent in seven years, while several universities reported an increase of more than 200 per cent.

Since the pandemic, a recent Canadian Alliance of Student Associations survey found that overall 84 per cent of students reported that the pandemic has added new or exacerbated existing mental health challenges. In addition, since last year, at 71 per cent, there has been a 10-point increase in those who say they are overwhelmed.

From addressing disproportionately inequitable outcomes within various programs, particularly STEM and medicine, to implementing inter-cultural training, mentorship programs and women’s campus safety initiatives, Ontario’s universities will continue to respond to the need for more programming that reaches all students.

Universities remain committed to supporting these students, their communities and the province through the pandemic and beyond as together we face the challenges of a rapidly changing society head-on and work to find solutions.

But in order to continue to support Ontario, universities must be financially sustainable.

COVID-19 re-shaped the university sector in real-time and placed unprecedented demands on sector stakeholders. The sector has incurred many costs due to COVID-19 that include developing alternative modes of course and exam delivery, as well as mental health and wellness services; reconfiguring classrooms and residences to accommodate distancing protocols, creating quarantine spaces and ensuring access to appropriate PPE; and providing emergency relief funds for students.

These financial challenges have been further compounded by reduced revenue to the sector with universities receiving the lowest per-student government funding in Canada and seeing a decline in inflation-adjusted operating grants per student by 21 per cent since 2006–07. An ongoing tuition freeze and a 10–per-cent cut to domestic tuition has cost the sector $1.2 billion since 2019. Each additional year of a tuition freeze means universities will lose $740 million in foregone revenue.

At the Forefront of Solutions to Ontario’s Challenges: Sustainable Universities

78% Students who reported a negative mental health impact due to the pandemic.

While 63% of the general population reported that the pandemic had a negative impact on their mental health, 78% of students reported the same, according to the Canadian Alliance of Student Associations.
At the Forefront of Solutions to Ontario’s Challenges: Sustainable Universities

CREATING SOLUTIONS TO ONTARIO’S CHALLENGES

To ensure students are provided with valuable work-integrated learning experience, one Ontario university is partnering with a municipality and providing students with the opportunity to engage directly with city leaders. The program will help students gain more hands-on experience about urban issues and policy development, while helping the municipality conduct research and tackle urban challenges.

Today’s students — the province’s future makers — are entering an ever-evolving economic, technological and social landscape.

To help them navigate these changes, Ontario’s universities continue to adapt their programming to meet student needs, such as work-integrated and inter-disciplinary learning, as well as provide additional resources and support systems for student mental health and well-being that will help our students prepare for today and tomorrow.

For example, universities are working to ensure students graduate job-ready by developing micro-internships, work placements, co-op programs and other work-integrated learning programs at an unprecedented scale — the types of experiences that both students and employers value. These approaches allow universities to be more responsive to the diverse needs of students graduating into an increasingly complex labour market.

To be fully equipped for the new realities and complexities of a changing social and economic landscape, the need for student mental health services and resources on campus is only increasing. Prior to the pandemic, the total number of students registering a mental health disability as their primary disability increased by 151 per cent in seven years, while several universities reported an increase of more than 200 per cent.

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Graduating Job-Ready

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To improve clinical interventions and outcomes for students, an Ontario university is becoming the first of its kind in the province to have a new mental health intervention program that will help students in crisis on campus. In partnership with the Canadian Mental Health Association (CMHA), the program involves having a dedicated mental health professional, hired by CMHA, on campus four days a week.

Supporting Student Mental Health

To ensure Ontario successfully recovers from the pandemic and meets the needs of a growing economy, government and universities need to work together to expand university education in Ontario.

Investing in the university sector over the long-term will ensure universities can continue to make their fullest contribution to a world that is rapidly changing and evolving.

Fundamentally, while all universities are unique, they have a shared mission to ensure Ontario’s students have the best learning experiences and opportunities to prepare for their careers and the futures they aspire to.

Ontario’s universities will continue to play a role in addressing the societal challenges facing Ontario and support the resilience of the students and communities they serve.

However, a pattern of reduced investment by government threatens to erode our ability to do so, as our universities continue to see growing needs for modernized programs and learning environments; increased campus services in areas such as student mental health; and more cost-intensive resources to foster a culture of innovation.

Nevertheless, universities have demonstrated their ability to do more with less, adopting new and innovative ways to reduce red tape and streamline processes and operations that have resulted in significant cost-savings.

But, in order to run as efficiently as possible, our sector requires new investments.

Increasing investments in the sector and a commitment to enhancing university education is critical to ensuring universities remain able to support the fight against COVID-19, provide essential online and mental health services to students; develop a highly skilled and adaptable workforce; strengthen industries, businesses and communities; drive ground-breaking innovation and help restore Ontario’s competitive economy.

It is why in order to fully unleash this potential, Ontario’s universities are asking that the government — through increases to university revenue sources, such as expanding spaces in high-demand programs — make critical investments in the sector today to rebuild a better Ontario for tomorrow.

The future of the sector will shape the future of our province in significant ways — a future that can be more equitable and inclusive, more prosperous and more resilient, through and beyond the COVID-19 pandemic.

It is time for a new partnership between government and universities that allows Ontario’s universities to build the better and brighter future for our province that we all want to see.
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