

Perspective™



# ONTARIO

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## DIVERSITY IN INNOVATION

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Like the rest of Canada, Ontario has earned a global reputation for its celebration of diversity

## ENTREPRENEUR IMMIGRATION

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A system dedicated to highly qualified entrepreneurs to invest in Ontario.

## OPEN FOR INVESTMENT

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Profiles inside on municipalities, educational institutions & private sector



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# ONTARIO IS A TOP DESTINATION FOR FOREIGN DIRECT INVESTMENT FOR A REASON: IT IS OPEN FOR BUSINESS

Canada's most populous province is the country's economic powerhouse and a driving force in one of the world's greatest economic mega-regions.

Combining a business-friendly approach, a welcoming and diverse culture, a large and highly skilled talent base, low corporate tax rates, strong business infrastructure, generous incentive programs, and highly regarded educational and research institutions, Ontario has everything international companies need and want to grow and thrive.

## WHY ONTARIO

### Access to markets

Ontario is ideally located and has all the pieces of transportation and logistics necessary to serve massive markets in North America.

Forty per cent of North American consumers live within a day's drive of Toronto, Ontario's largest city. The province is well served by an expansive network of high-speed highways connected to more than a dozen U.S. border crossings and cross-Canada arteries that are the pipelines of efficient supply chains.

Ontario also boasts high-volume rail and international inland marine shipping, along with international airports and air cargo hubs.

### Innovation

Ontario is a global innovation leader. Together, the Ontario Centre of Innovation (OCI) and the Government of Ontario are committed to accelerating the commercialization of made-in-Ontario technologies and ideas and to helping companies scale and prosper.

OCI is a collaborative platform of industry, academia and government that maximizes the commercial impact of ground-breaking research developed in Ontario's colleges, universities, and research hospitals. The success stories span everything from robotics to food product innovation, and from digital health to agriculture.

### Efficiency

At every turn, the Ontario government is cutting red tape, reducing business costs and funding innovation so that investors and job creators can't help but see that Ontario is open for business.

Employee health care benefits cost Ontario manufacturers less than half as much as their U.S. counterparts, and the province's tax rates are among the lowest in North America.

For eligible companies, government programs provide financial assistance for infrastructure, human capital and the development and commercialization of advanced technologies. Our R&D tax incentive program is one of the most generous to be found.

### Diversity

Like the rest of Canada, Ontario has earned a global reputation for its celebration of diversity.

Ontario is an inclusive, welcoming, safe and multi-cultural place. The population comes from more than 200 ethnic backgrounds and speaks more than 100

languages. Close to 30 per cent of Ontarians were born internationally, the highest proportion in Canada.

The governments of Canada and Ontario are working together to make it easier for businesses to attract the talent needed to succeed in the global marketplace.

Under Canada's Global Skills Strategy, work permits for highly skilled talent are processed in as few as 10 business days.

## Quality of life

Canada is ranked the second-most politically stable nation, is admired for its public health and education systems, and is renowned for having the world's strongest banking system. It's no wonder Canada has repeatedly been named the second-best country in the world to headquarter a business.

Ontario epitomizes the best of Canada.

From the world-class city of Toronto – named by the Economist Intelligence Unit as being among the top ten most livable cities in the world – to a wealth of smaller, vibrant urban centres, to idyllic small towns and rural settings, to picturesque landscapes at every turn, Ontario offers it all.

Thanks to long-term economic growth, the province has maintained an exceptional quality of life that attracts and retains qualified domestic and foreign workers. Employees have easy access to vast recreational, cultural and entertainment opportunities.

In all ways, Ontario is a perfect landing for companies from around the world looking to expand internationally or to break into the North American market.

## DRIVING THE AUTONOMOUS VEHICLE REVOLUTION

Ontario is building on its long-standing position as a global centre of automotive production and innovation and its enviable cluster of information and communication technology companies – the second-largest and fastest-growing in North America – to redefine the future of mobility.

More than \$1 billion has been invested in Ontario's automotive technology and smart mobility ecosystem in the last five years alone. Ontario is a leader in the testing, piloting and adoption of transformative technologies.

The Autonomous Vehicle Innovation Network (AVIN) puts Ontario at the forefront of the development of the technology powering connected and autonomous vehicles (C/AVs) and other smart mobility solutions, along with cutting-edge research into light-weight materials and electrification.

AVIN is a key component of Driving Prosperity, the Government of Ontario's bold \$85-million commitment to the growth and prosperity of the automotive sector through research and development (R&D) funding, talent development, technology acceleration, business and technical supports, and testing and demonstration sites.

AVIN's ecosystem includes six Regional Technology Development Sites located across the province that are working with industry partners to develop, test, pilot and commercialize technology, including 3D mapping, smart city infrastructure, vehicle-to-everything communications, artificial intelligence, cybersecurity, and human machine interface.

Leading automotive and mobility technology giants, including Ford, GM, Infiniti, Toyota, BlackBerry QNX, Google, Uber, RDM, Apple, and DiDi have turned to Ontario to locate research and engineering hubs. Homegrown

companies such as Magna International are making huge investments in electrification and autonomous driving. Chrysler turned to its Windsor, Ontario plant to build the Pacifica, the first hybrid minivan in production.

Ontario consistently is a leader in North America in vehicle production and is the only subnational jurisdiction in the world with five original equipment manufacturers – Fiat Chrysler Automobiles, Ford, GM, Honda and Toyota. The province has more than 700 automotive supplier companies and more than 500 tool and die makers, making it one of the most comprehensive automotive clusters globally.

Ontario's automotive sector directly employs more than 100,000 people and is widely recognized as being among the best in the world in quality. The development of next-generation talent in the sector is second-to-none, with 24 colleges and 11 universities in the province offering auto-related training and research programs.

## FORGING A NEXT-GEN APPROACH TO TECHNOLOGY

Ontario boasts the second-largest IT cluster in North America, where industry giants like Amazon, Apple, IBM, Google, BlackBerry, Cisco and Shopify invest in major R&D operations. Beyond the long-standing technology power of Toronto, Waterloo, and Ottawa, Hamilton and Oshawa are emerging into tech hubs in their own right.

The province's technology industry includes nearly 24,000 firms generating more than \$43 billion in gross domestic product, employing more than 320,000 workers, and investing \$3 billion annually on R&D.

Ontario accounts for almost half of all IT workers in Canada and Toronto is ranked third in North America for the fastest-growing tech talent base.

Its 16 leading IT research institutes specialize in diverse fields, including quantum computing, cryptography, geoinformatics, medical imaging, microelectronics, mobile and wireless innovation, and semiconductors.

The Centre of Excellence in Next Generation Networks (CENGN) includes leading technology companies, the University of Ottawa and the OCI all working together to drive innovation and industry growth through testing, prototyping and demonstration programs, technical expertise, and talent development.

A key CENGN program is the Next Generation Network Program (NGNP), a digital backbone for the province's innovation economy that fosters collaborations, research and adoption of 5G and other next-gen networks.

The NGNP connects CENGN's digital infrastructure to innovation hubs across Ontario, allowing more than 150 Ontario SMEs, start-ups and researchers unprecedented access to a state-of-the-art, multi-vendor, open-platform testbed to validate innovation. Including matching industry and partner contributions, this program represents a five-year investment of more than \$115 million.

## FROM FARM TO TABLE

Ontario is North America's second-largest centre for food processing, and boasts access to superior, end-to-end supply chain solutions including processing, laboratories, packaging, specialized storage, world-class multi-modal transportation, and 3.6 million hectares of cropland growing more than 230 agricultural commodities.

All of that is located in the heart of a market of more than 400 million consumers.

That's why Ontario is home to some of the biggest producers in the world, including Anheuser-Busch InBev (Labatts), Coca Cola, Grupo Bimbo, Ferrero, Kellogg Company, Kraft Heinz, Mars, Mondelez, Nestle, PepsiCo and Unilever. Collectively, these companies and others have invested more than a billion dollars in their Ontario operations in recent years.

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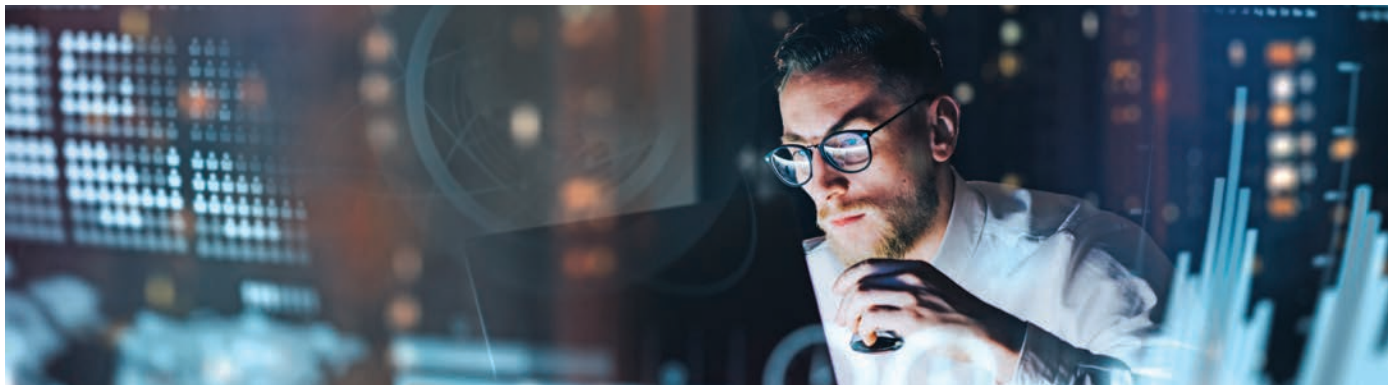
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# ONTARIO RELIES ON THE IDEAS, TALENTS AND HARD WORK OF PEOPLE FROM AROUND THE WORLD.

The province has updated its immigration application system to include a points system and a stream dedicated to bringing highly qualified and motivated entrepreneurs to invest in Ontario.

The Ontario Entrepreneur Stream (OES) of the Ontario Immigrant Nominee Program (OINP) is for applicants from outside of Canada interested in starting a new business or buying an existing business in Ontario. It offers the chance for permanent residence once a business is established.

Under an expression of interest (EOI) system, applicant profiles are scored and the province invites chosen candidates to apply for a provincial nomination for a temporary work permit from the Canadian government.

The new system aligns with the Government of Canada's Express Entry system for skilled workers. It will more seamlessly handle demand, making the process easier for the many people who want to immigrate to Ontario.

The OINP issued 8,054 nominations in 2020, including its first under the Entrepreneur Stream.

## Requirements for starting a business

Entrepreneurs (who can apply with up to one business partner) must prove a minimum net worth, which ranges from \$400,000 to \$800,000 depending on location and sector of the business. They must also prove a minimum investment in their new venture in Ontario, ranging from \$200,000 to \$600,000, and must own at least 33 per cent of the business.

Other requirements include at least 24 months of full-time business experience in the past 60 months, as an owner or senior manager. There are also benchmark requirements for language proficiency in either English or French.

Applicants must also agree to create one or two full-time jobs for Canadian citizens or permanent residents in the proposed company.

## Buying a business

If an applicant is purchasing an existing business in Ontario, they must keep all existing permanent full-time employees and must use at least 10 per cent of their personal investment towards improving or expanding the business in Ontario.

As well, the business being purchased must have been in continuous operation by the same owner for the previous 60 months.

## Points system

Entrepreneurs are awarded points under an EOI based on business experience, the investment they will make in the business and personal net worth, human capital factors (including education, official language capacity) and their business concept.

Applicants are ranked in the EOI selection pool and only top-ranked candidates are invited to apply. There is no fee to submit an EOI and registration lasts for one year.

## Invitation to apply

Those invited to apply for a nomination must submit a business case and supporting documents within 90 days of the invitation.

There is a \$3,500 application processing fee, which applies to both applicants in the case of a business partnership.

Applicants are required to attend a mandatory in-person interview at the OINP in Toronto and must sign a performance agreement that sets out business targets. A letter of confirmation from OINP allows nominees to then apply for a temporary work permit from the Canadian government.

## Establishing a business

Applicants have 20 months after arriving in Ontario to submit a report that shows they are abiding by all rules of the OES and the terms of the performance agreement.

If that report is approved, entrepreneurs will be nominated by the Ontario government for permanent residence in Canada.

Detailed requirements of the OES are found here, including a list of ineligible businesses.



[continued from page 5]

These giants are among the more than 3,800 food and beverage processors that directly employ 130,000 people and generate \$42 billion in revenue. These companies are producing products consumed by millions around the world.

The University of Guelph – the country's oldest and most prestigious agriculturally focused university – offers world-class food science, processing and safety programs and companies of all sizes turn to the Guelph Food Technology Centre for product development, packaging, shelf-life, food safety, quality, and productivity solutions.

Across Ontario, innovation hubs are helping companies of all sizes develop, test and market exciting, sustainable and diverse products to serve ever-changing consumer needs and preferences.

## BEYOND THE IVORY TOWER - PARTNERING WITH ACADEMIA

Ontario is home to 46 publicly-funded universities and colleges, more than any other province in the country. They support fundamental and applied research that powers innovation in every sector and for businesses of all sizes, ensuring the province's global competitiveness.

Industry-academia partnerships are facilitated by a range of federal and provincial organizations and funds dedicated to commercializing research and solving challenges. This approach has had remarkable results, especially in areas of key strengths for Ontario, such as advanced manufacturing, artificial intelligence, life sciences, autonomous vehicles, quantum computing, and 5G application development.

Strong connections between post-secondary institutions and industry ensure Ontario has a ready supply of highly trained and specialized talent to power future growth and innovation.

Ontario's population already leads the world in education. Sixty-nine per cent of Ontario adults have earned a post-secondary education, a rate higher than any OECD country and much higher than the highest-ranked Japan at 52 per cent.

Each year, Ontario's post-secondary institutions graduate almost 50,000 students from science, technology, engineering and math (STEM) programs. That places the province in the top five in North America.

The province is also home to some of the most research intensive universities and colleges in Canada, including the University of Toronto, McMaster University, Queen's University, the University of Waterloo, Western University, Lambton College, Mohawk College, Humber College and Niagara College.

Ontario is recognized around the world as a leader in providing a high-quality education in a system that is safe, welcoming and accessible. It is a destination of choice for students and families from around the world, attracting close to half of all those who choose Canada.

More than 642,000 international students chose Canada in 2019, making it the world's third-leading destination for foreign students.

### KEY SECTORS

In a highly diverse economy, a number of key sectors are at the forefront in Ontario:

- Aerospace
- Automotive
- Chemical and biochemical
- Cleantech
- Cybersecurity
- Financial services
- Food and beverage manufacturing
- Forestry
- Industrial automation and robotics
- Information technology
- Life sciences
- Mining
- Tourism

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# HOME TO INNOVATION AND OPPORTUNITY



From pilot studies to commercialization, clinical trials to industry partnerships, our people bring research to life, right here in Hamilton.



Dr. Gihan Perera, physical medicine and rehabilitation specialist, creator of the MyHeadHealth concussion recovery app.



## INNOVATIVE DIVERSITY THRIVING IN LONDON CANADA

Large multinationals, fast-growing mid-sized ventures, and exciting start-ups are finding success thanks to the rich and multilayered research and innovation ecosystem in London, Canada.

“There is so much momentum being built locally to support entrepreneurs and ventures from ideation to start-up and scaleup,” said Kapil Lakhota, CEO at London Economic Development Corporation.

“It’s such a vibrant innovation ecosystem that has the impact research institutes and agencies and all the resources needed to assist with organic growth and the kind of transformational growth that comes from innovation.”

London has developed into an innovation hub and a centre of product development in health care and medical devices, agri-food, digital media and technology, banking, finance and insurance, advanced manufacturing, transportation and aerospace and defence.

“The diversity of industries and talent makes for a depth of innovation that is unique,” said Lakhota. “There is a foundation of historic and leading brands,

such as 3M, McCormick Canada, Labatt and Nestle, and over the last several years the city has seen the emergence of a number of successes that have attracted international attention.”

Located in the heart of the southwestern region of Ontario, exactly halfway between Toronto and Detroit, London is one of Canada’s fastest-growing cities and the 11th-largest urban centre in the country at more than 530,000 people. It is a multinational hub, with 25 per cent of its population being born abroad and 140 languages spoken by its residents.

London offers a terrific balance of city amenities, natural beauty, and career opportunities, says Lakhota.

“It’s a safe, neighbourhood-focused urban centre with downtown amenities in art and culture, great post-secondary institutions, and world-class healthcare. There is everything you want in a city here. It has the convenience, charm and comfort of a small town but the quality of life and economic power of a big city.”

## Innovation through partnership

London's enviable innovation strength is built upon foundational institutions, including: Western University, its three Western Research parks and the Western Morrisette Institute for Entrepreneurship (MIFE); Fanshawe College and its Leap Junction accelerator; leading healthcare institutions and the cutting-edge medical research of the Lawson Health Research Institute, Robarts Research Institute, and the Schulich School of Medicine and Dentistry at Western University.

Those institutions have partnered in a number of ways to drive the results of research.

WORLDdiscoveries, the business development and commercialization arm of a partnership between Western University, Robarts Research Institute and Lawson Health Research Institute, seeks to reinforce London's place as a pre-eminent commercialization centre in North America.

It is at the heart of London's Research Row, a new concept used to describe a geographical band that is home to a large number of London's research-based institutions. The Row employs nearly 2,000 researchers and conducts over \$330 million in research annually.

In addition, Western, Fanshawe and the City of London have partnered on the Advanced Manufacturing Research Park where research, testing, prototype development and product commercialization is driving economic development for the city. A particular area of strength at the park is composite and lightweight materials in the transportation and agri-food sectors.

An exciting venture is a new agri-food incubator and accelerator called The Grove, a partnership between LEDC, Small Business centre, the Western Fair Association and RH Accelerator. Located at the Western Fair Entertainment District, it provides the access to equipment, facilities, capital and mentorship needed by food entrepreneurs and high potential agri-food companies to commercialize new products, create jobs, and grow market share.

FedDev Ontario recently invested \$7.2 million in The Grove, which will leverage the unique expertise of London's post-secondary institutions and build on the existing strength of region's agri-food sector, which includes more than 90 companies employing more than 7,000 people.

## Deep ecosystem

London has a strong support system for innovators and investigators and it's only growing.

TechAlliance is Ontario's Regional Innovation Centre for London and surrounding areas. Focused on supercharging the community, TechAlliance provides advice, experiences, and access to capital to launch startups, accelerate scale-ups and inspire talent.

London is also home to RH Accelerator, a privately owned incubator located in the historic London Roundhouse, which works with high-growth companies.

"That's a really exciting initiative that has led to investment that is fuelling growth and product development. It's so great to have private investment complementing government efforts," said Lakhotia.

As well, Fanshawe is developing Innovation Village, a physical and virtual commercialization hub featuring one-stop supports, collaborative workspaces, virtual reality and multimedia labs, a maker space, project rooms, research support, a food processing lab and cutting-edge equipment. It attracted \$3 million in FedDev Ontario funding in late 2020.

And to build on London's power in the digital media and technology sector, which includes more than 300 companies employing 10,000 people, LEDC is launching a yet-to-be-named office to accelerate the creation of content in London across the spectrum of film, TV, streaming services, gaming, animation, sound and music production, and artificial and virtual reality.

## Where innovation emerges

Among the established and emerging success stories in London are:



**Alimentiv** (formerly Robarts Clinical Trials) – is a specialized global gastrointestinal contract research organization headquartered in London that offers clinical research services to academic and industry clients around the world. It operates under the Alimentiv Health Trust, a social enterprise using the profits of commercial services to reinvest in research to transform human health on a global scale.



**Aspire Food Group** – produces nutrient-dense protein powder from crickets for food supplements and pet nutrition. Aspire was awarded \$16.8 million from Next Generation Manufacturing to construct the world's first fully automated cricket protein manufacturing facility in London's Innovation Park. The plant, expected to open in 2022, has also received more than \$10 million from Sustainable Development Technologies Canada.



**Digital Extremes** – a leader in the video game industry for more than 27 years. London is the heart of the company's creative operations in game and graphic design to sound and motion capture work. Digital Extremes has been recognized for 11 straight years as one of Canada's Top 100 employers.



**Front Line Medical Technologies** – a medical device start-up company founded in London by a vascular surgeon and a biomedical engineer that has developed a product called the COBRA-OS for temporary frontline bleeding control and resuscitation. It is the smallest such device on the market and received Health Canada approval in February.



**Paystone** – integrates engagement tools, including gift cards and loyalty programs, into payment processing platforms. The 12-year-old company serves more than 25,000 customers and processes \$10 billion in annual bank card volume. Named among Canada's fastest-growing companies in 2020, Paystone attracted \$69 million in strategic financing from Canadian Business Growth Fund (CBGF) and National Bank of Canada in January. The funds will be used to fuel growth in customer engagement services and electronic payment processing solutions.



**Race Roster** – a technology company that builds custom tools for registration, fundraising, race-day check-in, timing, and customer relationship management for race organizers. Since 2012, Race Roster has partnered with over 4,000 organizers to grow, manage and execute in-person and virtual events.



**VidHug** – the easy and automated video generation platform launched in 2018 and has seen explosive growth through the pandemic. It is geared to helping people make greeting videos for loved ones marking celebrations. The platform has been used to deliver more than 4 million "virtual hug videos" in more than 190 countries.

London, Ontario Canada

# Innovation Starts Here



Located between Toronto and Detroit, London is one of Canada's fastest-growing cities for business scale-up, expansion, relocation and an incredible talent pool to draw from. Some of the amazing companies who proudly call London their home.



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# SOUTHWESTERN ONTARIO – FUELING CANADA’S INNOVATION ECONOMY

The Regional Innovation Centre for Southwestern Ontario, TechAlliance is headquartered in London, Ontario serving companies from Lake Erie to Lake Huron through to Sarnia, Ontario – one of Canada’s gateways to the United States.

TechAlliance is an innovation hub where ambitious entrepreneurs spur accelerated growth, attract ambitious talent and scale globally competitive, world-class businesses that fuel Canada’s innovation economy.

Southwestern Ontario is home to Ontario’s most promising startups and fastest-growing companies like Voices.com, Big Blue Bubble, IPassword, Paystone, Race Roster, Digital Extremes, and CarFax, that have paved the way for the next generation of ventures like Mobials, Exar Studios, Northern Commerce, Frontline Medical, EzoTech, Konnexio, Top Spin, Media Sonar, ClearZone, Orca, The Minery, ODEA, Marlow, Motif, Dibz and many others.

TechAlliance has the largest geographic footprint of all of Ontario’s Regional Innovation Centres, serving five counties across Southwestern Ontario, offering venture growth coaching to support the most pressing strategic priorities of Made-in-Ontario startups and scaling companies. Through educational and networking experiences, TechAlliance fosters a vibrant technology community supporting founders pivoting their technologies, scaling their businesses, seeking capital investment, exporting to international markets, commercializing their IP, and growing the economy.

Christina Fox, CEO of TechAlliance of Southwestern Ontario comments on the strength of the tech community, “This region is the place for dreamers, innovators and world-changing ideas. We have an entrepreneurial culture with a vibrant community of new startups, established tech companies, and we are attracting the next generation of tech talent and innovative entrepreneurs.”

By facilitating meaningful collisions between industry leaders, tech talent, and founders, TechAlliance stewards a healthy ecosystem and resilient regional economy connecting founders to peers, influencers, and investors. By creating

space for diverse and innovative technology ventures to access services, tools and real partnerships they need to grow, TechAlliance widens the pathway to collaborative peer networks, quality incubation, and acceleration resources.

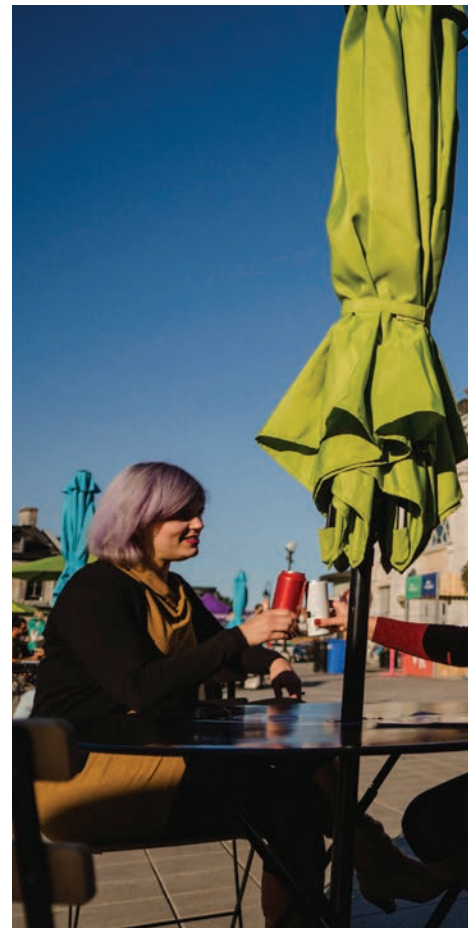
Demonstrating leadership in research, innovation and technology, three post-secondary education institutions — Western University, Lambton College and Fanshawe College thrive in Southwestern Ontario graduating a breadth of new talent, eager to connect to innovative businesses who will continue to nurture their disruptive mindset. TechAlliance makes vital connections for growing companies to harness world-class tech talent to propel their business.

With an innovation community as strong as Southwestern Ontario we are reminded that unexpected times being exceptional people together. Nothing we once thought about the future of work and business could have prepared companies for the kind of rapid, relentless change we experienced. Southwestern Ontario entrepreneurs and industry leaders have adapted with urgency to create extraordinary innovation, driving equitable and regenerative prosperity across Canada.





*Tim Forbes/Forbes Photographer*



## A HEALTHY MARKET FOR INVESTMENT

**T**wenty-two research centres. Eight distinct healthcare providers. Leading post-secondary institutes, incubators, and innovation infrastructure.

The healthcare system in Kingston is a powerful and diverse web that keeps locals healthy, provides great jobs, and creates great investment opportunities for businesses and investors.

In fact, the timing has never been better for healthcare businesses seeking to establish themselves in the Limestone City. With an aging population, and the challenges posed by COVID-19, the Canadian federal government and local city government have recognized the time right to bring these valuable healthcare resources even closer together by establishing an ecosystem in Kingston.

“We have a serious healthcare cluster that starts at health policy and continues on to education, hospitals, research, and health companies,” said Craig Desjardins, Director, Office of Strategy, Innovation & Partnerships at the City of Kingston. “The human capital infrastructure of researchers and graduate students in particular – in health sciences but also in other STEM disciplines like physics, chemistry, and computer science – are a huge asset to our community and this is a cluster focus we’ve chosen to grow.”

In January, Kate Young, Parliamentary Secretary to Canada’s Minister of Economic Development and Official Languages, announced \$3 million in FedDev Ontario funding to establish this ecosystem project. The ecosystem will unite the City with Queen’s University and some of its major research centres and incubation programs, St. Lawrence College, Kingston Health Sciences Centre, and GreenCentre Canada.

The funding is intended to help grow local health jobs and attract new businesses to Kingston; bring innovative technologies to the hospital floor more quickly; develop incubator programs for healthcare and life science businesses; and expand commercialization pathways to nearby Syracuse, New York; among other related initiatives.

In addition to welcoming and growing new businesses, existing healthcare innovators in Kingston will benefit from this new investment.

Archeoptix Biomedical Inc. was founded in Kingston in 2014 with a goal of commercializing research around the detection of brain bleeds. Their portable devices can detect a brain bleed in under three minutes, providing medical professionals with immediate insight into a patient’s condition. The device is approved by Health Canada and the company is currently working on approval to sell their device in the United States and Europe.

“Kingston is a great place to do business due to its proximity to Toronto, Ottawa, Montreal, and the States,” said Sav Stratis, Archeoptix’s president. “There is lots of talent here in Kingston and, over the coming years, we plan to add to add to our team and create jobs.”

Archeoptix is not the only health company thriving in Kingston. Octane Medical Group was already full steam ahead with its diverse product lines before COVID – now, they’re renovating and expanding their Kingston headquarters with the pandemic having accelerated their growth.

Octane was founded by Timothy Smith and Ian Grant in 2007. It’s Smith’s sixth company in the medical space. The group unites several distinct



Love Kingston Market Place

technologies and a wide breadth of expertise including tissue engineering, spinal reconstruction, nuclear imaging, and bioactive implants.

“Ontario is extremely well positioned for those looking to start a business and commercialize inventions due to its intellectual capital and high calibre of training,” said Smith. “The provincial and federal programs to support companies like ours are as good as any in the world from my perspective. Kingston in particular benefits from its academic institutions, and its many sources of potential collaborations and its resources for highly specific experimental analysis.”

Octane’s and Archeoptix’s stories underscore not only the talent and funding advantages of locating your business in Kingston, but also the reasons companies stay. Desjardins, Stratis, and Smith all noted the strong quality of life and business opportunities that come part and parcel with Kingston’s central location, the presence of leading post-secondary institutions, and its proximity to major markets. These factors, among other, led to Kingston being named the world’s top small city for foreign direct investment by the UK’s Financial Times.

“The ecosystem we’ve built here has been recognized as a rising star, as these companies increasingly recognize there’s value in going where research is happening and where talent is grown and trained,” added Desjardins.

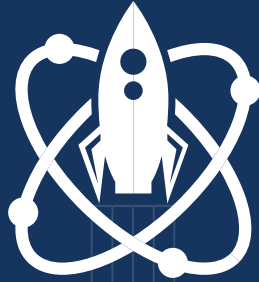
For information on opportunities in Kingston, contact Shelley Hirstwood at [hirstwood@kingstoncanada.com](mailto:hirstwood@kingstoncanada.com).

# KINGSTON

## YOUR BUSINESS BELONGS HERE.

- ▶ SMARTEST WORKFORCE IN CANADA WITH THE MOST PHD GRADUATES
- ▶ 14 CANADIAN RESEARCH CHAIRS
- ▶ HOME TO NATIONAL HEALTH RESEARCH NETWORKS
- ▶ ROBUST HEALTH INNOVATION ECOSYSTEM

[KingstonCanada.com](http://KingstonCanada.com)



Queen's University

MEDICINE | NURSING | REHABILITATION THERAPY

Faculty of Health Sciences

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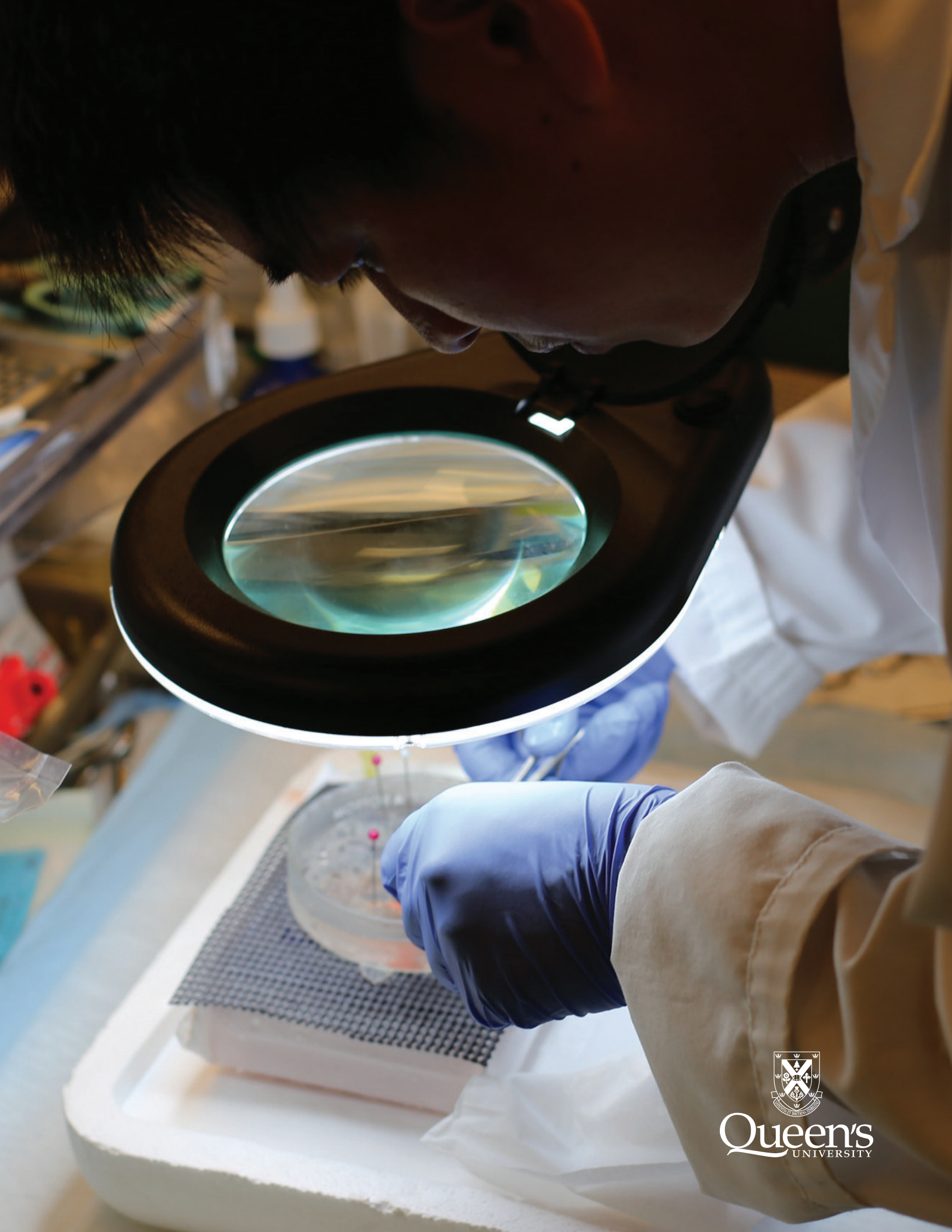
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for the big health challenges  
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Research · Discovery · Innovation





Queen's  
UNIVERSITY

# QUEEN'S UNIVERSITY AT KINGSTON

## CREATING AN INNOVATION ECOSYSTEM WHERE HIGH-TECH MEETS HEALTH-CARE

Host to more than 24,000 students, including 6,500 who are pursuing graduate degrees or second undergraduate degrees, Queen's University in Kingston, Ontario is ambitious about building synergies and ecosystems. The Queen's Partnerships and Innovation (QPI) team develops and facilitates partnerships with industry, governments, national and international partners, not-for-profit organizations, and other academic institutions to advance the university's research enterprise, bring inventions to market, and strengthen the regional innovation ecosystem in which the university is a key player.

QPI collaborates with many partners in Kingston and Eastern Ontario to develop and deliver programs and services that accelerate the growth of entrepreneurs, startups, and small to medium-sized enterprises, and to attract innovative companies to invest in and establish operations in the region. Leveraging Queen's strengths and resources and critical funding from the Government of Canada, QPI offers numerous programs and services to help high-tech companies launch and gain traction or grow and scale up for those pursuing global market opportunities. QPI also offers a suite of programs and services to support women entrepreneurs from underrepresented groups and sectors as part of the Government's Women Entrepreneurship Strategy. In the near future, QPI and partners will launch new programs and services to help health-innovation focused companies build and scale operations in Kingston.

QPI is pleased to showcase Kingston-based companies that are making a difference in the exciting space where high-tech meets health-care.

### Elentra

The Elentra team has been working with university-level health sciences schools for over a decade to create a truly unified, cloud-based system that provides institutions with the ability to digitize their curriculum to boost efficiency and deliver an excellent user experience.

Originally developed at Queen's, Elentra is now used around the world. A cloud-based teaching aid, scheduling system and assessment tool all-in-one, Elentra empowers academic institutions to train the next generation of health-care professionals to better serve their patients and advance medical research using the only complete on-line platform built by and for health sciences schools.

Elentra's assessment and evaluation module includes a suite of robust and flexible tools designed to help instructors assess learners, in clinical and traditional learning environments, and to deliver and administer their educational programming, from basic assessments to final exams. Elentra makes it easy to manage assessment and evaluation processes by providing tailored dashboards for different user types. It also allows learners to create multiple user groups, such as discussion forums, and gives them the ability to create assessments of their own progress as well as that of peers and small groups.

Within Elentra, learners, faculty and staff have all the tools required to deliver, consume, and administer their educational programming. Elentra's user-centred approach to design ensures users' needs are met, no matter how complex their requirements, and that everyone has a consistent experience, allowing them to concentrate on what they need to do, with the technology enabling, not hindering, their experience.

### Kinarm

Neurological injuries and disease are among the most devastating that people can suffer. Despite their prevalence, clinician scientists trying to develop new therapies, have to rely on tools that are outdated because of their crudeness and subjective nature.

Kinarm offers a solution to this lack of precision and consistency. The Kinarm Lab gives clinician-scientists a "window" on brain function that is both objective and quantitative, allowing them to study the sensory, motor, and cognitive impacts of a wide range of injuries and disease and measure the benefit of new therapies.

During an assessment, the subject interacts with the robot and performs a task, such as directing a hand to a target, or interacting with an object in the environment. While they do this, the robot precisely actuates and records their arm movement. After the 2 to 4-minute task is completed, the robot provides a detailed report of the subject's performance, comparing their behaviour to an age, sex, and hand-matched control population.

By following a suite of standardized protocols, a clinical researcher can assess the neurological impairments of a subject in a Kinarm Lab in just 30 to 60 minutes, saving days of clinic time.

Invented by Queen's professor Stephen Scott in 1999 and constantly improved ever since, Kinarm's cutting-edge robotic technology is used by clinical researchers around the world to study stroke, TBI, ALS, Alzheimer's, MS, Parkinson's, and now COVID-related deficits. Kinarm Labs are transforming neurological assessment and enabling new treatments for brain injury and disease.



## Kings Distributed Systems

Founded in 2017, Kings Distributed Systems (KDS) has developed a web-based solution, based on ubiquitous web standards, that can borrow a computer's idle computing capacity and make it part of a distributed computing system. The result is the scale of computing power achievable by the cloud, but available at a fraction of the cost. Further, because the data need not be sent to the cloud, it remains secure and on-location – a big plus for hospitals and other institutions concerned about data privacy.

Closely associated with Queen's University, KDS has recently embarked on a new collaboration with Queen's School of Computing aimed at developing the next stage of distributed systems: mobile edge computing. In such a system, mobile devices, such as autonomous vehicles, drones, tablets, smart phones, and so on, can be joined on the fly into a distributed system. In a "smart" manufacturing plant, for example, all the microprocessors found in sensors, robotic components, and computer systems can be harnessed to form distributed computing clusters, not only collecting sensor data but processing it as well, providing real-time analysis.

Among the applications developed using their solution, KDS has recently been working with a number of partners, including Queen's, to develop Project Looking Glass. Drawing on distributed computing power, the project gives policy makers a predictive analytics tool that quantifies public health and economic impacts due to policy. Already in use to determine responses to the COVID-19 crisis, its use can be extended to other public health issues and beyond.

## Limestone Analytics

How do you determine the economic and social effects of something unprecedented like COVID-19?

Thanks to the work of Kingston's Limestone Analytics and its STUDIO (short-term dynamic input output) model, governments can get a better idea of the fallout from the pandemic and from similar major economic shocks.

Founded in 2016, Limestone Analytics is widely recognized for helping its clients identify, design, finance, monitor, and evaluate programs and policies in health and nutrition, education, infrastructure, environmental conservation, and a bevy of other areas. The firm and its principals have successfully completed assignments for governments and large NGOs around the world. Closely connected to the Economics Department at Queen's (reflecting its desire to combine academic rigour with practical policy making), over the years Limestone Analytics has also received support from Queen's Partnerships and Innovation.

Developed in response to the COVID-19 outbreak, Limestone Analytics' STUDIO model adopts economic methods to allow governments to explore the impact of COVID-19 on different regions and economic sectors, balance health against economic outcomes, and explore different policy scenarios for dealing with them. Used by the Eastern Ontario Leadership Council, the government of Alberta, and others, STUDIO will have applications far beyond the current pandemic, allowing governments in Canada and internationally to assess the effect of any sudden shock, good or bad, to a regional economy.

## Mesh AI

"Just showing up is half the battle." A cliché perhaps, but in the time of COVID-19, it captures a hard truth. Making sure there are enough health-care workers when they are needed to administer the vaccine is a tough scheduling



problem; this is especially true in the face of significant uncertainty in terms of supply and demand as well as provider availability.

Understanding that, Kingston-based MESH Scheduling Inc., a global health-care software provider founded by Queen's professor Shahram Sean Yousefi, has recently made access to its advanced provider scheduling and resource allocation platform, Mesh AI, free of charge for COVID-19 immunization teams. Because fighting COVID-19 puts such a strain on health-care resources and personnel, Mesh AI was also made available free of charge to all health units in need during the earlier days of the pandemic.

Mesh AI is an intelligent, highly flexible, easy-to-use, and quick-to-launch, cloud-based platform built for health-care teams in hospitals, clinics, public health units, and physician groups. Providers input their availability and even shift preferences to help reduce burnout and stress. Then with a single click, schedulers and leaders can engage Mesh AI's state-of-the-art optimization engine to find fair and efficient shift distributions. Mesh AI improves efficiency, cost, provider satisfaction, access to care, and patient outcomes. Its inherent flexibility to manage surge and change is a key factor in its efficacy in the battle against COVID-19.

## Novari Health

The folks at Novari Health like to say that they were fighting COVID-19 long before the pandemic hit – they just didn't know it.

Novari develops software to help patients negotiate their way through the health-care system. Research into the subject has shown that transitions of care between providers and care settings can be dangerous for patients – records can be lost, appointments missed and so on. Novari's Access to Care Platform uses modern web and cloud technology to mitigate these risks while improving workflows for physicians and administrators. The platform includes a series of integrated modules and is the only system available that electronically manages the complete continuum of care from start to finish. In a field, health-care, that is still largely dominated by paper-based record keeping, its effects on patient outcomes and health provider efficiency are frankly revolutionary.

Since the outbreak of COVID-19, Novari's software has also proved invaluable in dealing with the pandemic. Novari's surgical wait list and patient prioritization technology has helped improve surgical wait times made worse by the pandemic. Their referral management and workflow technology track and manage patients needing COVID testing. The firm's virtual care technology now allows patients to see physicians inside a risk-free, virtual walk-in clinic.

Originally created at the Kingston Health Sciences Centre as an in-house solution to patient scheduling, Novari Health's software is used worldwide today and the firm has offices in Kingston, Ottawa, Toronto, Vancouver, Sydney, Australia, and Auckland, New Zealand.

# HAMILTON ONTARIO CANADA



**HAMILTON IS CANADA'S  
LEADING HEALTH RESEARCH  
AND EDUCATIONAL CLUSTER;  
A LAUNCHPAD FOR  
INNOVATIVE LIFE SCIENCE  
RESEARCH AND  
COMMERCIALIZATION.**

## **CLINICAL TRIALS**

Targeted population studies, longitudinal assessments, Hamilton has demonstrated global leadership in delivering trans-disciplinary clinical trials

## **GROUND-BREAKING BIOMEDICINE**

Global firms are leveraging partnerships offered in Hamilton via McMaster University, the No. 1 Canadian university by corporate research partnerships

## **INNOVATIVE LAB SPACE**

Hamilton is located at the tip of Lake Ontario, centrally located about 60-90 mins from Waterloo, Toronto, and Buffalo, NY.

# HAMILTON CANADA WHERE LIFE SCIENCE RESEARCH GOES TO WORK

## THE SCIENCE OF BUSINESS



Number of Potential Discoveries to be Commercialized

# 101

past 12 months

## INNOVATION THRIVES



Total number of research projects

# 3,771

past 12 months

## GLOBAL CLINICAL STUDIES

# 1 MILLION

The Population Health Research Institute (PHRI) which is an initiative between Hamilton Health Sciences and McMaster University have enrolled more than one million participants worldwide.

## PEOPLE POWER

# 2,196

Researchers

# 8,155

Workplace help students

# 31,289

Employees



## ANNUAL RESEARCH BUDGET

# \$534,000,000

Metro Area, Greater Hamilton area based on spend/person on healthcare



## REAL ESTATE



# 20,538,315 sq.ft.

Lab space

# 2.8 million sq. ft.

# 65

Health research institutes and centres



# 45

Inventions licensed or developed into Products/Services



# MEDIC

Mohawk College leads Canada with their applied research centre mHealth & eHealth Development & Innovation Centre



# DISCOVERING THE NEW LIFE SCIENCES DISTRICT IN HAMILTON



**LEGEND:**

- 1) Residential Tower
- 2) Hyatt Hotel
- 3) Mixed-Use Workspace with Atrium
- 4) Residential Tower
- 5) Mixed Use Workspace Tower
- 6) Custom Lab (fully leased)
- 7) Life Sciences Low Rise
- 8) Custom Lab (in development)
- 9) Advanced Technology Low Rise
- 10) Residential Low Rise
- 11) Bio-Manufacturing Campus
- 12) Mixed Used Lab and Retail space

## Investing in Regenerative Medicines

CCRM, a global public-private partnership headquartered in Canada, is funded by the Government of Canada, the Province of Ontario, and leading academic and industry partners. It supports the development of regenerative medicines and associated enabling technologies, with a specific focus on cell and gene therapy. A network of academic researchers, leading companies, strategic investors and entrepreneurs, CCRM accelerates the translation of scientific discovery into new companies and marketable products for patients, with specialized teams, funding and infrastructure. CCRM sources and evaluates IP from around the globe, offers various consulting services, conducts development projects with partners, and establishes new companies built around strategic bundles of intellectual property. CCRM has a 40,000 square foot space dedicated to advanced cell manufacturing that includes a fully resourced process development facility and a Good Manufacturing Practices facility. CCRM is hosted by the University of Toronto and was launched in Toronto's Discovery District in June 2011. Visit us at [www.ccrm.ca](http://www.ccrm.ca)



## The Evolution of Therapy

At Fusion, we are pushing the boundaries of science to create innovative precision medicines for cancer.

We are a clinical-stage biopharmaceutical company developing next-generation radiopharmaceuticals as precision medicines for the treatment of cancer. We have developed our Targeted Alpha Therapies, or TAT, platform together with our proprietary Fast-Clear™ linker technology to enable us to connect alpha particle emitting isotopes to antibodies and other targeting molecules in order to selectively deliver the therapies to tumors.

We believe our proprietary Fast-Clear™ linker technology is a safer approach to targeted radiopharmaceuticals. Fast-Clear™ represents a revolutionary step towards developing safe and effective new radiotherapeutics as the standard of care for the treatment of multiple tumor types.

We believe this evolution of radiopharmaceuticals holds great promise to improve the lives of patients with cancer.



# NEW DOMESTIC BIOMANUFACTURING CENTRE LANDS

## CCRM and McMaster Innovation Park (MIP) Partner for the NEXT GENERATION OF MEDICAL ADVANCES

CCRM a global, public-private partnership headquartered in Canada will add its footprint to MIP. CCRM a leader in developing and commercializing regenerative medicine-based technologies and cell and gene therapies, and McMaster Innovation Park (MIP) announce they have signed a Letter of Intent (LOI) to partner in the development of a biomanufacturing campus at MIP. They will focus on regenerative medicine-based technologies and cell and gene therapies.

The agreement, which is focused on an initial CDMO facility to produce cells and viral vectors for Phase III clinical trials and commercial-scale manufacturing, represents the first phase of a long-term initiative to develop a biomanufacturing campus at the innovation park, and thus form the western anchor of the emerging life science corridor spanning from Hamilton to Toronto.

“Our partnership with MIP is about more than building a facility,” explained Dr. Michael May, President and CEO, CCRM. “This is about building domestic manufacturing capacity within the region for the next generation of medical advances. “It was an easy decision for us to partner with McMaster Innovation Park as our visions for scaling

the Ontario life sciences ecosystem are so aligned,” says Michael May PhD, President and CEO, CCRM. “The location gives us proximity to talented college and university graduates, it is a perfect location for companies to grow, and the Hamilton International Airport is ideal for logistics and supply chain support. We envision Hamilton and Toronto as the bookends of a thriving life sciences corridor that we are excited to play a role in developing.”

Ty Shattuck, CEO of McMaster Innovation Park, commented, “The introduction of CCRM to MIP’s innovation ecosystem is in the context of MIP’s 2.1 million sq. ft. Life Sciences ‘MegaHub’. CCRM will be an anchor within the MIP, and because they will retain their research facilities within MaRS in Toronto, it will act as an ongoing and active connection between two of the most advanced life science ecosystems within Canada.” He added, “Today, entrepreneurs, leading global companies and investors in the life sciences increasingly see the Toronto-GTA-Hamilton area as a global-calibre life sciences corridor. This region has established itself as a prolific global leader in life sciences innovation and MIP plays an important and growing part in that success.”



*New home to The Global Nexus for Pandemics and Biological Threats to prevent global health threats located at MIP, Hamilton Ontario Canada*



*Latest Addition: state of the art, customizable laboratory building designed for flexible and scalable labs*

### Immunotherapy: Revolutionizing Cancer Care

Triumvira Immunologics, Inc. (“Triumvira”) is an immunotherapy company with the vision of developing novel T-cell therapies that are safer and more efficacious than current cell therapy cancer treatments, including chimeric antigen receptor (CAR) and engineered T-cell receptor (TCR) therapies. Our proprietary T-cell Antigen Coupler (TAC) technology recruits the entire natural T-cell receptor and functions independent of the Major Histocompatibility Complex (MHC), potentially allowing for the development of better therapies for a broader range of patients with solid or liquid malignancies and with diseases other than cancer. With operations spanning North America, our corporate offices are in Austin, Texas, with our research facilities in Hamilton, Ontario. For more information, visit [www.triumvira.com](http://www.triumvira.com)



Triumvira

### Predicting Brain Health

VoxNeuro’s Cognitive Health Assessment™ is the first assessment in the world that reliably measures all core brain functions. These functions reflect mental abilities that allow us to live healthy, independent lives, like memory, concentration, and decision making. The breakthrough EEG-based neuroimaging assessment differentiates between true cognitive decline and perceived decline caused by situational factors like stress, fatigue or mood. Early adopting healthcare professionals describe it as a “true stress test for the brain’s core functions”. The results help them make informed treatment decisions with actionable data about brain health.



VOXNEURO






# JOIN CANADA'S PREMIER LIFE SCIENCES CAMPUS

With a focus on Life Sciences, Advanced Materials and Manufacturing, and Information & Communications

Technology, MIP is centrally located in the Ontario Life Sciences Corridor and within one hour from both Toronto, Ontario and Buffalo, New York



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HAMILTON ON L8P 0A1**

 <b>TALENT</b>	Mohawk College (30,066 Students) McMaster University (31,265 Students) McMaster University Canada's most research intensive University and College (The University Impact Rankings 2019, Research Info Source 2018) Top 75 University in the World (The University Impact Rankings 2019) 3 <sup>rd</sup> in Canada for Research Hospitals – Hamilton Health Sciences (Research info Source 2018)
 <b>TRANSPORTATION</b>	Maclean's 3 <sup>rd</sup> BEST Communities – Large Cities (2019) Largest and Busiest Seaport in Ontario (Port of Hamilton 2018) Largest overnight Express Cargo Airport in Canada (Hamilton International Airport) Part of extensive Regional public transit hub - GO Transit linked to local transit system Central Hub for both CN and CP rail freight
 <b>POPULATION</b>	Population 579,105 (Maclean's 2019) 30% growth rate for next 20 years Average age 41 Average home price \$595,593 (Jan. 2020 – listing.ca) Average rent for 2 bedroom Apt. \$1,654 (rentals.ca 2020) Median Household income: \$76,193 (Maclean's 2019)
 <b>MIP</b>	Home to Fusion Pharmaceuticals recipient of largest Canadian Life Sciences Series 'B' funding CanmetMATERIALS - Natural Resources Canada Canada's largest materials research facility McMaster Automotive Resource Centre (MARC) North America's largest University Based Automotive research facility
 <b>BUSINESS CLIMATE</b>	4 <sup>th</sup> largest number of Startup 50 Companies by City (Canadian Business) 2 <sup>nd</sup> Tech City of Opportunity in North America (CBRE 2019 Scoring of Tech Talent Report) Number one large city to buy real estate in Canada (MoneySense 2019) Unemployment rate 3.9% (City of Hamilton 2019)

## ONTARIO LIFE SCIENCES CORRIDOR

- Anchors include MaRS in Toronto, "Pill Hill" in Mississauga and MIP in Hamilton
- Top 10 Life Sciences destination worldwide for foreign direct investment
- 4<sup>th</sup> largest Life Sciences hub in North America
- 2 largest hospital networks in Canada
- Over 50,000 Life Sciences work force (90,000 in Ontario)
- Over 4,000 Life Science graduates annually
- \$56.8 Billion in annual revenue

## NOW LEASING



**44 FRID ST.**


60,000 sq ft floor plate

14-16 ft clear height

BSL2 design

10 W psf electrical load

Delivery July 2022



**191 LONGWOOD ROAD S.**


22,500 sq ft floor plate,

13 ft clear height

10 W psf electrical load

50% Leased

Delivery December 2022



**606 ABERDEEN AVE**

This renovated 100 year old building is the new home of McMaster University's Global Nexus for Pandemics and Biological Threats.

300,000 sq ft of specialized lab space.

Now seeking EOI for retail and amenity space.



**BIO-MANUFACTURING CAMPUS**

Now in design, this 300,000 sq ft custom facility is the new home to CCRM. The facility is designed to fit CDMO providers and supplier firms.

Delivery late 2023

Phase I Leased.  
Phase II coming soon.



# HOME TO REGIONAL CENTRES OF EXCELLENCE



From cardiac care to acute pediatrics, cancer care to trauma and more, our people provide the expertise that puts the heart in Hamilton's health care.



Nurses Kerry-Ann Hudson and Melanie Cook in the Juravinski Hospital and Cancer Centre operating room.



# McMASTER UNIVERSITY & CANADA'S GLOBAL NEXUS: FINDING SOLUTIONS FOR A GLOBAL CRISIS

COVID-19 is just the latest epidemic to expose the world's vulnerability to the threat of infectious disease. It will not be the last.

In response to the pandemic and to ensure Canada is prepared for the next, McMaster University in Hamilton, Ontario has launched Canada's Global Nexus for Pandemics and Biological Threats.

Building on a track record of excellence and global leadership in infectious disease research and expertise in providing the best available evidence to decision-makers nationally and around the world, Canada's Global Nexus is at the forefront of finding solutions to the current pandemic and preparing for future health threats.

From finding new approaches to personal protective equipment (PPE), vaccines, and therapeutics to enhanced surveillance, and testing capacity, Canada's Global Nexus will lead in preparation for and rapid response to future emerging crisis caused by bacteria, viruses and infections.



*Gerry Wright, Lead, Canada's Global Nexus for Pandemics and Biological Threats*

Under the leadership of infectious disease expert Gerry Wright, Canada's Global Nexus is positioning Ontario as a global destination for investment and innovation. It's increasing the province's capacity to recruit global talent, boost global health security, train the next generation of leaders, and provide jobs and economic growth.

Hamilton is home to one of the strongest hospital networks in the country, is a global leader in clinical trials and has an innovation

ecosystem – centred at McMaster Innovation Park (MIP) – that bridges academia and industry to support commercialization.

MIP is at the core of one of Ontario's fastest growing life sciences hubs. It's home to spin-off companies like Fusion Pharmaceuticals, Triumvira Immunologics and Century Therapeutics Canada. And it will be the headquarters of Canada's Global Nexus, connecting it to universities, research institutes, public health agencies, industry labs and not-for-profits around the world.

A glimpse at a few of McMaster's centres and partners in Canada's Global Nexus:

**Michael G. DeGroote Institute for Infectious Disease Research** is a world-leading centre of transdisciplinary infectious disease research. With more than 35 principal investigators and 2,000 trainees, the team – from medicine and biochemistry to mathematics, anthropology, and engineering – delivers new knowledge and solutions to some of the most pressing challenges in infectious disease.

**The David Braley Centre for Antibiotic Discovery** is home to world-leading antimicrobial resistance (AMR) researchers, focused on the discovery and development of new and improved antibiotics, antibiotic adjuvants and other antibiotic alternatives and diagnostic strategies to improve clinical practices.

**The Centre of Excellence in Protective Equipment and Materials (CEPEM)** includes engineers, clinicians, manufacturers and companies dedicated to advancing personal protective equipment products in Canada. CEPEM researchers are working with Ontario's manufacturing sector to create value-added, next generation products; bring manufacturing back to Canada and ensure the industry's sustainability beyond this pandemic.

**The Institute of Infection and Immunity**, supported by the Canadian Institutes of Health Research and based at McMaster, supports research and builds capacity in infectious disease and the body's immune system. Researchers are addressing a wide range of health concerns related to infection and immunity, including disease mechanisms, disease prevention and treatment, and health promotion through public policy.

**McMaster Health Forum** is internationally recognized for its work that connects the best available research, citizen input and stakeholder insights to health-system issues and solutions. The research team supports evidence-informed policymaking about health and social systems globally.

**COVID-19 Evidence Network (COVID-END)**, hosted at McMaster, brings together experts to collaborate and rapidly synthesize the best available research across the full breadth of Canada's COVID-19 pandemic response; providing policymakers the latest research to better inform public health measures and understand the impact of such measures on Canadians' health and safety.

**Canadian Network for Modelling Infectious Disease (CANMOD)**, co-lead by McMaster, brings together mathematicians, statisticians, epidemiologists and public health experts to increase Canada's ability to track the spread of infectious disease and inform short, medium and long-term public health decisions.

**Canadian Anti-infective Innovation Network (CAIN)** leverages innovative approaches and expertise to solve the expanding health crisis caused by antimicrobial resistance (AMR) infections. Co-led by McMaster, researchers from Canadian universities and hospitals are working across disciplines and sectors to coordinate Canada's AMR efforts to commercialize products, educate the public, policymakers, and Canada's next generation of researchers.

**Institute on Ethics and Policy for Innovation** researchers identify and address ethical challenges, ethics-related risk, and policy gaps with the potential to undermine the impact of life-saving technologies and interventions in global health and development.

# PARTNERING FOR INNOVATION

The knowledge, research infrastructure, and culture of partnerships embedded within McMaster University help companies develop the products and processes they need to compete and grow in the innovation economy.

“Industry needs expertise and McMaster has that expertise,” said Darren Lawless, assistant vice-president research, innovation and partnerships. “Across McMaster’s six faculties, our world-leading experts are working with external partners to find solutions to complex problems. And our students are eager to be involved in real-life problems, so it’s a win for everyone involved.”

McMaster researchers fully understand the pace of industry and that there is no one-size-fit-all solution, says Lawless.

“We are flexible in how we work together. We look for true partnerships. There is great opportunity that can come out of confronting problems and collaboratively finding a way to pivot around them.”

There are many examples, but two research entities– the well-established McMaster Automotive Resource Centre (MARC) and the new Centre of Excellence in Protective Equipment and Materials (CEPEM) – perfectly encapsulate the forward-thinking and nimble capacity for research innovation for which McMaster is known.

## McMaster Automotive Resource Centre (MARC)

MARC is one of North America’s leading research facilities in electric and hybrid vehicles, and is developing highly efficient and cost-effective powertrains and components, and identifying light materials to make cars more fuel efficient.

MARC partners with a number of manufacturers, including General Motors, Ford, BMW, Toyota and Fiat Chrysler Automobiles (FCA).

“The work at MARC is so important to the future of automobiles,” said Lawless. “Automotive companies and automotive parts companies have really come to trust and rely on MARC and its researchers.”

Led by Ali Emadi, the MARC team’s partnership with FCA earned the Synergy Award for Innovation from the Natural Sciences and Engineering Research Council of Canada (NSERC) in November.

“We set our goal to develop one of the world’s best university programs in the field of transportation electrification from the ground up. We started working with FCA from day one,” said Emadi, an engineering professor who holds a Canada Research Chair in Transportation Electrification and Smart Mobility.

At MARC, Emadi leads a robust research group with more than 250 graduate and undergraduate students, post-doctoral research fellows and engineers.

His lab is one of the most prominent training environments in the world for new talent in automotive engineering.

Much of the transformative technologies developed through the FCA partnership can be found under the hood of the 2018 Chrysler Pacifica hybrid – Canada’s first and only hybrid minivan.

## Centre of Excellence in Protective Equipment and Materials (CEPEM)

CEPEM was created in response to a call from Hamilton Health Sciences to start local manufacturing of face masks and face shields as supply chains began to collapse in March 2020.

In just over a month, the CEPEM team of faculty and student engineers, clinicians, and industry identified suitable materials, designed prototypes and developed validation tests to gear up Canadian manufacturing of face shields and masks. Since March, more than 50 companies have worked with McMaster on PPE.

CEPEM answers the pressing need, but will also develop next-generation PPE that is safe, effective, customizable and reusable and uses the latest in composite materials and additives.

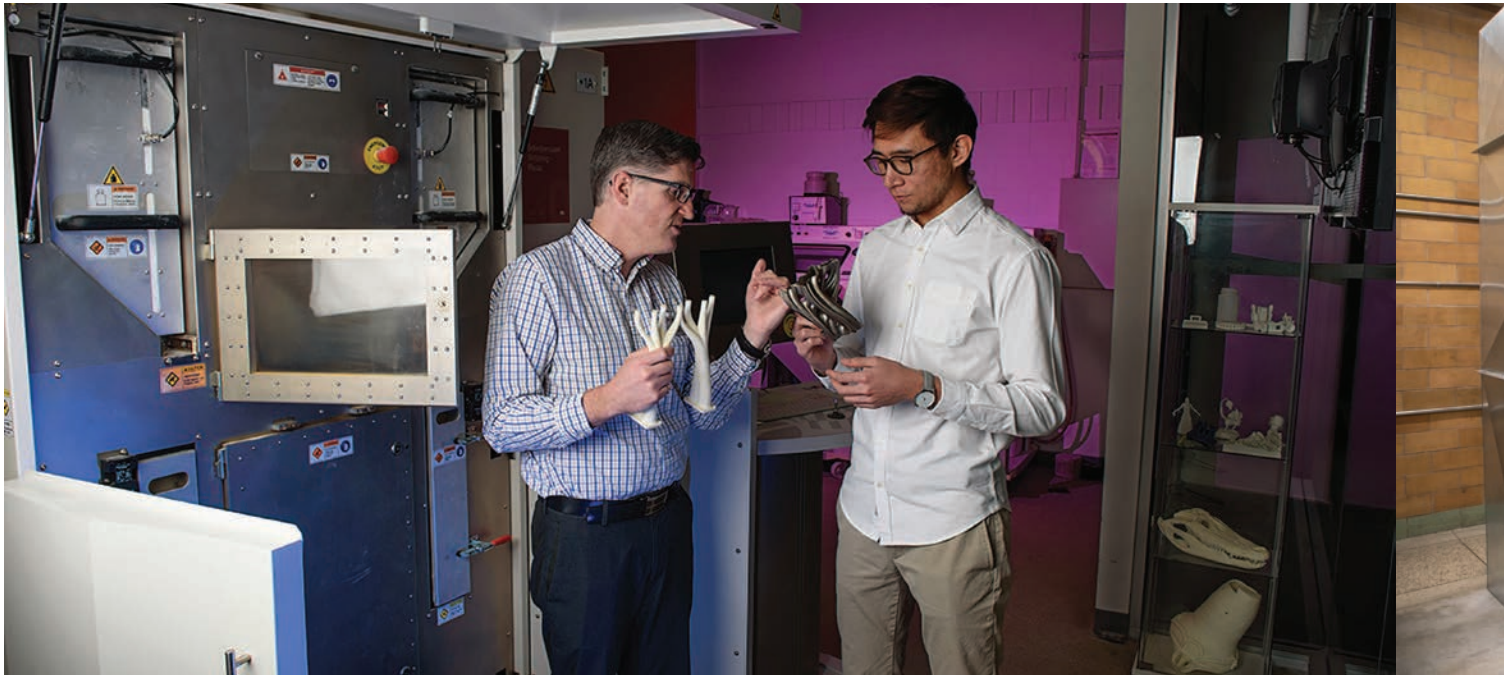
“We established the Centre to be a hub of companies interested in this area, enable a research and development program and translate those findings into products that Canadian industry would put out into the world,” said Ravi Selvaganapathy, CEPEM’s director and a professor of mechanical and biomedical engineering.

CEPEM – an integral part of Canada’s Global Nexus for Pandemics and Biological Threats – allowed for the rapid pivot of manufacturers answering the critical need, including:

- Hamilton-based packaging manufacturer HT Productions (Whitebird), which retooled to manufacture up to 100,000 face shields a day. The company recently received \$3.9 million in federal government funding;
- Hamilton athletic garment maker Niko Apparel Systems is now producing 20,000 hospital-grade surgical face masks a day for healthcare workers;
- Ontario automotive parts manufacturer Woodbridge Foam Corporation, which tested materials and got certification for a high-performance level 3 surgical mask that has received Health Canada approval.
- Concord-based RONCO is producing next-generation face masks with improved protection, comfort, and fit.



Alan Callegaro, Principal Research Engineer (left) and Ali Emadi, Canada Research Chair in Transportation Electrification and Smart Mobility at the McMaster Automotive Resource Centre (MARC)



# RESHAPING YOUR COMPANY POST-COVID: HOW APPLIED RESEARCH CAN HELP

## Innovate or fold?

The question sounds dramatic but with Canada just past the one-year anniversary of the COVID-19 pandemic, many business owners have started to ask themselves if it's time to increase their focus on R & D.

Every year, thousands of Canadian business owners turn to a Canadian college or cégep for access to expertise, equipment, and talent. That's because the research happening at your local college is very different from the academic research that takes place at a university. Colleges focus on applied research, providing practical, customized solutions that can help you develop new products and services and support your adoption of new-to-the-industry or new-to-the-company technologies.

## Crucial expertise and equipment

Canadian colleges are equipped with specialized labs, researchers and technical staff dedicated to supporting industry R & D projects.

At Hamilton's Mohawk College, which is ranked fourth in Canada for applied research by Research Infosource, areas of expertise have been selected to support the main industries contributing to the local economy. Over the past 12 years, Mohawk has built innovation centres in Additive Manufacturing, Climate Action, Energy & Power, mHealth and eHealth Development and Medical Technologies. These centres are supported by Mohawk Research Chairs in Sustainable Building Technologies and the Industrial Internet of Things.

When you select a college partner consider more than just geographic location—the expertise and equipment makes a difference. Take for example, H20 Paddles, a sister company of Toronto-based Dynaplas. The company

manufactures white water kayak paddles and wanted to explore how 3D printed conformal cooling channels could be integrated into the design of their moulds and what impact the process would have on their overall cooling cycle time. Leveraging Mohawk's Additive Manufacturing Innovation Centre's industrial 3D printers and expertise in mechanical engineering, the applied research project created a new mold that reduced the cycle time by over 60% from a conventional cooling channel design.

## The ROI from Applied Research

Canadian colleges often act as an extension to, or in some cases are the entirety of, your R & D team. Many applied research projects have spent time sitting on the corner of your desk waiting for you to get around to them or have sat there because you need some expertise in a field that you don't have in-house. With applied research, teams of full-time researchers, faculty, recent graduates and students, colleges are ready to provide the time or expertise you just don't have.

Those projects that were nice-to-have pre-COVID might be the need-to-have for your business to survive now. And with the financial support of government agencies such as the Natural Sciences and Engineering Research Council, MITACS and the Ontario Centre for Innovation, it's possible to stretch your R & D budget with matched or leveraged funds.

With applied research, you should see returns on your investment within 12-24 months of the project being completed. When Mohawk College worked with Hamilton-based Niko Apparel Systems to adopt a web-based order management system that would help them compete internationally, the IT modernization project helped the company secure a six-figure multinational contract within months.



## The IP Advantage

When we think about Intellectual Property (IP), many of us think of patents. That's just one form of IP – copyright, trademarks, confidential information and trade secrets are also IP.

The value of your company typically increases if you own intellectual property. Everything from an established brand name to a protected or confidential means of producing a product to source code for a software application can have value to a purchaser or investor.

Retaining control of your IP is one of the key advantages of applied research. Most Applied Research projects result in new IP but instead of retaining control over the IP like many other R & D partners, colleges typically sign over IP rights to you, the industrial partner, with no restrictions on use.

Your ownership of the IP speeds up commercialization. When Mohawk College's Sensor Systems and Internet of Things (IoT) Lab worked with Truck Sail Inc. to develop a prototype for an innovative safety sensor system for transport trailers, the company was able to immediately bring their new product to market.

If you are asking yourself "Innovate or fold?", have a chat with the applied research department at your local college or cégep. Discover if they can help you see a path to innovation.



Neil Wilkinson is the Director of Business Development at Mohawk College's IDEAWORKS, where he helps SME companies with a growth imperative who are looking to generate innovative solutions in partnership with academia. Learn more about IDEAWORKS at [www.mohawkcollege.ca/IDEAWORKS/](http://www.mohawkcollege.ca/IDEAWORKS/)

# Informed by Research. Delivered by Experts.

- Additive Manufacturing Innovation Centre (AMIC)
- mHealth & eHealth Development and Innovation Centre (MEDIC)
- Medical Technologies Innovation Centre (MTIC)
- Energy & Power Innovation Centre (EPIC)

[mohawkcollege.ca/ideaworks](http://mohawkcollege.ca/ideaworks)

 **MOHAWK**  
**IDEAWORKS**

# BRAMPTON IS BUILDING AN INNOVATION DISTRICT

Prioritizing innovation, technology and entrepreneurship is a key cornerstone in Brampton’s COVID-19 Economic Recovery Strategy. This cornerstone outlines how Brampton will drive growth in innovation and technology start-ups and corporates, while promoting digital transformation among existing businesses and putting the necessary resources in place to nurture entrepreneurship. Brampton is already home to leading Innovation & Technology companies including Rogers Communications, Canon Canada, Amazon, MDA and IT Weapons (Konica Minolta).

We are fast-tracking plans to build an innovation ecosystem that produces innovative talent with the goal of supporting start-ups from across the region as well as international newcomers. Many technology companies and start-ups have found ways to pivot and gain momentum through the economic downturn produced by COVID-19, and Brampton is well positioned to accelerate these companies from ideation all the way to success. We will do this by supporting companies across all sectors and sizes of business in their recovery strategies, and by investing in and nurturing the growth of the up-and-coming Brampton Innovation District. The District will develop into an ecosystem with resources for companies in all stages including start-up, scale-up, small and medium-sized enterprises, and large corporates.

Positioned to be a key player in the innovation space with its location in the middle of Canada’s Innovation Corridor, downtown Brampton’s Innovation District will fully adopt an innovation and technology transformation and capitalize on entrepreneurship.

## Who Is Part of Brampton’s Innovation District? START-UP INCUBATORS AND ACCELERATORS

### Brampton Entrepreneur Centre & Co-working Space

The Brampton Entrepreneur Centre (BEC) opened its spacious storefront co-working space designed to fuel creativity and productivity, completely free to Brampton entrepreneurs and innovators. BEC hosts frequent seminars and sessions with business advisors. Since BEC has opened more than 400 entrepreneurs have subscribed to use the services and space.

### Welcoming the Research Innovation Commercialization (RIC) Centre to Brampton

The recent relocation of the RIC Centre to downtown Brampton is a critical addition to Brampton’s Innovation District and the development of its ecosystem. The RIC Centre is a “scale-up” organization to help entrepreneurs take their businesses to the next level.

### Ryerson Venture Zone

With the recent launch of the Ryerson Venture Zone in the Brampton Innovation District, Brampton is committed to building and supporting entrepreneurial teams by aiding in the development of high potential scalable businesses in Brampton. The Ryerson Venture Zone is modelled after and integrated with Ryerson University’s world recognized Zone network. It is designed to bring people together to brainstorm, kick-start projects, and help take start-ups from early-stage incubated companies to established thriving businesses.



*Catalyst Cyber Security Training Centre and Headquarters  
Led by The Rogers Cybersecure Catalyst and Ryerson University*



*Brampton Entrepreneur Centre – 41 George St. S.*

### Rogers Cyber Secure Catalyst

The newly launched Rogers Cyber Secure Catalyst led by Ryerson University will help local and international companies seize the opportunities and tackle the challenges of cybersecurity, collaborating with industry, governments and academic partners. This not-for-profit organization is owned and operated by Ryerson University and offers training and certification, support for cyber scale-ups, applied R & D and more. A major component of the Rogers Cyber Secure Catalyst is the Cyber Security Accelerator which is developed in partnership with the world renowned Ryerson DMZ Accelerator. **This Accelerator is Canada’s first commercial Cyber Security accelerator for start-ups and scale-ups** and provides companies with the required tools to grow. The accelerator also features a “Corporates-in-Residence” program where companies including Rogers, Royal Bank of Canada (RBC), and Amazon mentor companies at the Catalyst Cyber Accelerator. The scale-ups also have access to over \$500,000 worth of exclusive business services and perks provided by over 60 globally recognized businesses. The new accelerator, in conjunction with the other cornerstones of the Rogers Cyber Secure Catalyst including **Canada’s first Cyber Range**, Cyber security training and research and development are all **positioning Brampton to become Canada’s next national hub for Cyber Security.**

## Founder Institute

Our newest addition, the Founder Institute is a world premier idea stage accelerator that aims to empower early-stage entrepreneurs to launch global companies by providing expert mentorship, a global network of resources and a curated program through a partnership with Rogers Cybersecure Catalyst and the City of Brampton.

## COMING SOON

### BHive – International Start-up Incubator

The BHive offers incoming foreign start-ups and entrepreneurs the tools, resources and space to establish and scale-up their businesses in Canada faster, through Canada’s start-up visa program. It also will provide co-working space, mentorship and access to funding.

## DEVELOPING OUR TALENT – Education, Training and Re-Skilling

Over the last two years, education and training opportunities within the district have significantly increased and become a destination for learning at all levels.

- Rogers Cybersecure Catalyst’s Accelerated Cybersecurity Training Program – Cyber Range
- The G. Raymond Chang School of Continuing Education, Ryerson University
- Sheridan Continuing and Professional Studies at Brampton Library’s Four Corners Branch
- Algoma University – Downtown Brampton Campus

Business support services through the Economic Development Office, Brampton Board of Trade and the Downtown BIA will provide essential services and connections to help build the talent ecosystem within the Innovation District.

## BUILDING CAPACITY AND INFRASTRUCTURE FOR INNOVATION

Last year, Brampton approved moving forward on three major projects that will generate downtown revitalization and enhance new developments in the City’s core. The future Centre for Innovation (CFI) is a transformational initiative that will become an anchor for the Innovation District to support the growth of Brampton’s innovation ecosystem. It will offer a new central library, office space and direct access to transit.

The City of Brampton is eager to welcome local and global entrepreneurs and talent of all types and keep the momentum going.

For more information, visit [Bramptoninnovationdistrict.com](http://Bramptoninnovationdistrict.com) or contact us at 905.874.2650 or email [invest@brampton.ca](mailto:invest@brampton.ca)

## A TALENT ECOSYSTEM OF THE FUTURE

**36** YRS

LOWEST AVERAGE AGE IN CANADA



LOCATED IN THE MIDDLE OF CANADA’S INNOVATION CORRIDOR



HIGHLY SKILLED TALENT: ACCESS TO 4.3 MILLION LABOUR POOL ACROSS THE GREATER TORONTO AREA



BRAMPTON HAS ACCESS TO 20 POST-SECONDARY INSTITUTIONS WITHIN AN HOUR’S DRIVE.

## START-UP INCUBATORS AND ACCELERATORS



## EDUCATION, TRAINING AND RE-SKILLING



## BUSINESS SUPPORT SERVICES



JOIN US [BRAMPTONINNOVATIONDISTRICT.COM](http://BRAMPTONINNOVATIONDISTRICT.COM)



# BRINGING INNOVATION TO MARKET, SCALING STARTUPS FROM SOFTWARE TO HARD-TECH

## The future is now at Peel’s regional innovation hub, as RIC Centre solidifies its location Brampton’s Innovation District after over a decade of progress

Businesses that solve problems and innovate quickly are the ones that thrive — but this innovation doesn’t happen in isolation.

After over a decade of serving the Peel Region from Mississauga, the RIC Centre relocated to the Brampton Innovation District in April 2020. Located along the Toronto-Waterloo Innovation Corridor, Brampton continues to put the building blocks in place to foster a robust ecosystem with resources available to support entrepreneurs at every stage of their journey. This central location comes with the unique ability to attract highly skilled tech talent from both Toronto and Waterloo.

RIC Centre is the innovation hub and business incubator for Brampton, Mississauga, Caledon and neighbouring communities in Southern Ontario. As a dynamic catalyst for innovators, RIC Centre has helped its scaling companies raise \$421 million in revenue, provided \$575 million in funding and created over 2500 jobs. The organization’s staff and advisors support companies in Advanced Manufacturing, Internet of Things, Hardware and Software, Cleantech and Life Sciences to commercialize their products and get them to market faster.

These sectors are seeing continued growth within the province, despite the pandemic. “Now, more than ever before, innovation is critical for business success. The past year has demonstrated that companies who are nimble, can quickly leverage market opportunities. It’s our goal to help them with that,” shared Pam Banks, Executive Director RIC Centre.

One of their clients, AOMS Technologies, realized over 300% in revenue growth in just two years with RIC Centre. This growing company provides end-to-end IoT sensing solutions that combine the most cutting edge hardware, software and connectivity technologies to expand the bounds of innovation among industries.

“Working with the RIC Centre helped our founding team refine our business model, redefine our product market fit and grow to where we are today,” Amir Azhari, Co-founder and Chief Commercial Officer at AOMS Technologies shared.

As one of the longest running support organizations for tech companies in the region, RIC Centre provides business services and access to incubator programming for entrepreneurs that want to kick-start growth for their enterprise.

Kicking off the year at RIC Centre’s The Future is Now: Innovation in 2021 event, futurist Jim Carrol shared that he is witnessing an opportunity for a lot of organizations to define a new future based upon fast moving trends.

“If you are an entrepreneur, you need to consider what you can do to accelerate your opportunities given the reality and the speed of the change occurring around you. That’s why incubators like the RIC Centre are so critical to your success.”

There is strong support for this growing ecosystem from all levels of government and the private sector. Brampton Mayor Patrick Brown welcomed the organization as they physically relocated to the growing city.

“The City has worked extensively with the RIC Centre in the past and has a long-standing positive relationship with them. We are thrilled to partner

with them as we evolve our innovation ecosystem. Together with them and our other partners, we are building a robust Innovation District, which will allow us to support our entrepreneurs and businesses in every stage of their journey. This partnership is a win-win for all involved – especially our entrepreneurs and business owners.”

RIC Centre is proud to be a catalyst for growth and success with businesses and entrepreneurs, contributing to Ontario’s evolving economy.

## RIC CENTRE scaling innovation

OUR COMPANIES HAVE GENERATED

**\$575 M**  
IN FUNDING

**\$421 M**  
IN REVENUE

**2520+**  
2020 JOBS



**JOIN US TODAY**

[RICCENTRE.CA/REGISTER](https://riccentre.ca/register)

6 GEORGE STREET SOUTH | BRAMPTON INNOVATION DISTRICT





## TECHNOLOGY LENDING A HELPING HAND TO HEALING HANDS

When Frederick Banting and Charles Best discovered insulin about a century ago, it helped to end the death sentence diabetes represented. We've come a long way since then, with technology contributing to the delivery of insulin to improve lives and positively impacting the way we care for patients with diabetes.

Today, integrated continuous glucose monitoring pump systems can deliver timely insights via smartphone while also automatically delivering the precise amount of (basal) insulin required. "Patients are more empowered than ever in Type 1 diabetes management," says Neil Fraser, president of Medtronic Canada, a subsidiary of the world's largest medical technology and solutions company.

"Insulin pumps, other devices that are implanted in or worn on the body, robotic assistance and surgical tools, artificial intelligence (AI) and virtual care – these advancements in medical technology positively augment the capabilities of physicians to benefit patients," adds Fraser.

### Hands off in hands on care

During the COVID-19 pandemic, many people with chronic illnesses were reluctant to seek in-person care. Virtual healthcare lent a helping hand with hospitals and clinics adopting remote monitoring and virtual visit capabilities. Patients were able to connect with their clinician while minimizing their risk of exposure to viruses. For example, a clinic in Alberta leveraged Medtronic's CareLink™ system to eliminate wait times for people on the system.<sup>i</sup>

Patients who have CareLink access enabled on their continuous glucose monitor or pacemaker, can send their report to their endocrinologist or cardiologist, respectively – to improve care planning during a remote or in-person appointment. Given the convenience of virtual visits, we can expect that many patients may prefer this option even after the pandemic.

### Faster hands for faster healing

Advances in medical technology "hardware" make minimally invasive procedures possible for a greater number of conditions, which results in speedier recoveries with less chance of infection as a result of reduced hospital stay. For

example, diseased aortic heart valves can be replaced using minimally invasive transcatheter aortic valve implantation (TAVI) through an incision in the groin, reducing hospital stays by an average of four days<sup>ii</sup> compared to the more invasive open surgery option.

Complex spine surgery can be performed through keyhole incisions with the assistance of a robotic arm and enhanced visualization machines. "Studies show most patients prefer minimally invasive spine surgery, when it is appropriate for their condition<sup>iii</sup>," notes Fraser. "It can result in less pain, with shorter hospital stays, and overall faster recovery."

In addition to technology enhancing the capabilities of healthcare providers when treating patients, technological advances in materials contribute to improving the patient experience. For example, medical technology has developed an advanced energy treatment to help tissue bond to itself, which aids in faster healing – no suturing required.

### Planning handled

On the "software" side, clinicians are increasingly using AI to detect diseases earlier and speed up treatment planning. The Princess Margaret Hospital, for example, uses machine learning algorithms to assist with the process of planning radiation treatments for patients with prostate cancer.<sup>iv</sup> The Peter Munk Cardiac Centre leverages AI to diagnose coronary artery disease<sup>v</sup> in one day instead of weeks or months.

In the future, we can expect to see even more devices with AI embedded in them to further improve diagnosis and treatment of various conditions.

Neither the hardware nor the software replaces the healing hands of the clinicians who care for their patients. But many existing and future technologies do have the potential to help clinicians provide more timely access to the healthcare patients need.

To learn more about how Medtronic – the world's largest medical technology, services, and solutions company – is partnering with the healthcare system to improve access to care, please visit [Medtronic.ca](https://www.Medtronic.ca)



# MARKHAM: BUILT ON INNOVATION

Markham, a diverse, vibrant and fast-growing city in York Region at the heart of the Greater Toronto Area, is at the centre of Canada’s second-largest technology cluster. It is a city of research and innovation, world-class talent, entrepreneurial spirit, and collaborative action.

The city is home to more than 650 corporate head offices and more than 1,500 high-tech and life science companies, a regional innovation centre, a leader in applied research in Seneca College, and a future York University campus.

Global innovators in Markham include IBM, Aviva Insurance, AMD, GM Canada Technical Centre, Bank of China, GE Grid IQ Innovation Centre, Honeywell, Huawei Technologies, Lenovo, Johnson & Johnson, Toshiba, Honda, Qualcomm and Hyundai.

The city is a leader in attracting foreign direct investment, with more than 240 internationally based companies. Markham is Canada’s most diverse city, and is known for its urban amenities, outstanding neighbourhoods and green spaces, rich heritage, low tax rates, and exceptional quality of life.

“Innovation is our central way of life in Markham, where residents hold the greatest number of patents per capita in Canada according to the World City Council on Data. The city has a highly educated and skilled workforce in technology, life sciences, financial services, design and engineering, science, and information and cultural sectors,” says Markham Mayor Frank Scarpitti.

At the nexus of innovation and industry is the IBM Innovation Space-Markham Convergence Centre, a 50,000-square-foot hub. Managed by ventureLAB, the region’s technology accelerator, the hub is home to over 45 tech companies and nearly 300 employees who are building transformative, impactful products and solutions.

It is also home to York University’s incubator YSpace, Seneca, Markham Small Business Centre, NRC-IRAP and Ontario Centre of Innovation, and a number of agencies supporting and funding innovation.

Markham is also home to IBM’s Canadian software lab—the largest software development lab in the country.

**Entrepreneurship and Innovation Fund (EIF)**

The Entrepreneurship and Innovation Fund encourages innovation towards business continuity and business recovery efforts by supporting promising early stage start-ups, accelerators, incubators, and community partners. With an annual commitment of \$100,000 from York Region until 2023, the fund will support the development of the innovation network in York Region.

## ventureLAB

Regional tech hub ventureLAB in Markham has a mission to power local startups into becoming the next generation of globally competitive tech titans.

In its 10-year history, it has enabled more than 2,000 ventures to raise more than \$200 million in venture capital and create 4,000-plus jobs.

ventureLAB works with companies across the spectrum but has a particular focus on hardware and enterprise software technology for markets that include med-tech and advanced manufacturing, building on the strengths of Markham’s economy.

ventureLAB’s signature initiative is its Hardware Catalyst Initiative, Canada’s only lab and incubator for hardware and semiconductor startups, including a \$7 million state-of-the-art lab to drive innovations from prototype to product.

“There are a lot of barriers for hardware startups. It’s harder to get funding, it takes very expensive equipment to test and prototype products, and it takes longer for hardware startups to commercialize,” says Chief Operating Officer Matt Skyenner.

“This is unique, at least in Canada, to have an innovation centre focused on hardware. It’s a key differentiator for ventureLAB.”

One company from the Hardware Catalyst Initiative’s inaugural cohort, Cyberworks Robotics, has delivered the first of its self-driving tow-tractors, representing the first deployment of autonomous tractors in an industrial greenhouse anywhere in the world.

“That’s a really cool early success and there’s going to be more.”

Other ventureLAB initiatives include Tech Undivided, which helps women-led companies to refine product-market fit, amplify sales, and navigate relevant sources of funding, and its Capital Investment Program that streamlines the connection between investors and investment-ready ventures.

“Our vision is to create an ecosystem of small, medium and large companies that offer a plethora of jobs and keep talent here in the region.”

Skyenner says the tech ecosystem in Markham is a true community of collaboration and that’s led by a municipality that strategically supports innovation.

“The City of Markham has been a key supporter for us. We wouldn’t be where we are today without the support of the City.”

<https://venturelab.ca>





York University Markham Centre Campus

## Seneca Innovation and HELIX

Seneca Innovation is the single point of access for industry and community partners wishing to engage in collaborative applied research projects with Seneca's faculty and students.

The college has research centres of excellence in data analytics, and life sciences, along with specializations in design and animation, engineering, health sciences, and business and finance.

"The focus of our Seneca's applied research is working with small- to medium-sized enterprises to solve their technical challenges through our expertise and infrastructure," says Ben Rogers, Dean, Seneca Innovation.

Seneca Innovation provides a full-service applied research operation that includes research managers who work with companies and faculty in obtaining grants, strategizing, building research plans, and hiring students.

"That project manager stays onboard throughout the project, ensuring milestones and deliverables are achieved. That kind of rigorous project management approach sets us apart and results in more successes for Seneca and better outcomes for our partners."

Seneca also advances the development of innovation through its on-campus incubator HELIX.

The focus is twofold: helping entrepreneurs design and launch a startup; and fostering innovation within employees, allowing them to innovate from within companies as intrapreneurs, says Chris Dudley Director Entrepreneurship at Seneca Innovation.

Since its launch in 2014, HELIX has engaged more than 21,000 individuals in innovation and entrepreneurship events and helped to accelerate 560 new ventures in everything from cosmetics to data, and from virtual reality to healthcare.

A signature program is HELIX's Career Recharge, a series of free upskilling sessions sponsored by TD that help mid-career professionals re-enter the workforce, advance in their field, change careers or start a new venture.

More than 6,000 people from around the world have taken part in that program.

HELIX supports entrepreneurs through launch and initial scaleup and then connects clients to other supports in Markham's innovation ecosystem to continue the growth journey, says Dudley.

"The City of Markham has been a really strong supporter of HELIX from the very beginning. They are extremely strong players in the ecosystem. By collaborating and exchanging ideas, we all move farther faster."

<https://www.senecacollege.ca/innovation.html>

**Seneca**

## York University Markham Centre Campus

The \$276-million York University Markham Centre Campus will open in fall 2023 with the overall theme of technology and entrepreneurship. The next-generation urban campus will offer entirely new undergraduate and graduate academic programs initially spanning five York faculties.

The new campus is founded on: producing highly qualified, globally educated graduates and research leaders committed to solving society's complex challenges; providing lifelong learning and professional opportunities to Canada's workforce; offering work-integrated experiential learning to each student, and fuelling the economy of the City of Markham, York Region and Ontario, says Amir Asif, Vice-President, Research and Innovation at York University.

"We are tremendously excited about the Markham Centre Campus. For many of us, it is a life-time opportunity to create an exemplary catalyst for learning, research and innovation in the region. We aspire to make Markham the Silicon Valley of Canada."

The university's new campus will take a multidisciplinary approach to fundamental and applied research, says Asif, with an initial focus on three research clusters: artificial intelligence and society, digital cultures and fintech.

"Being located in an urban centre, right in the middle of the fastest-growing technological entrepreneurship hub in Canada, opens all kinds of unique collaboration opportunities for research, scholarship, and innovation."

York has had a significant footprint in entrepreneurship in Markham for several years. YSpace Markham, a 10,000-square-foot accelerator innovation hub that supports growth-ready technology ventures, as well as food and beverage start-ups, opened to entrepreneurs in January 2018. By June, the incubator was sold out. York doubled the available space and within six months, that space was filled, too. In just three years, YSpace has supported the growth and development of more than 100 new ventures.

"The opportunities for collaborations and demand for our entrepreneurial supports in Markham have blown us away," says Sarah Howe, Assistant Vice-President, Innovation and Research Partnerships.

YSpace's Food and Beverage Accelerator – unique in Ontario – helps high-growth consumer packaged goods ventures, everything from sugar-free oat milk to dehydrated vegan meals, to scale up their operations and acquire new distribution channels.

"Making a direct contribution to the local economy through innovation and entrepreneurship, are key priorities for York in Markham. The new campus is only going to take that to a whole new level."

<https://www.yorku.ca/markham>

<https://yspace.yorku.ca>

**YORK U**

**YSpace**  
Markham



(From left to right) Jim Clark, Don Thomas, Amanjot Gulshi and Sougata Pahari – Founder & CEO of Korechi Innovations Inc. – presenting their booth at TechEx.

## SPARK CENTRE CREATES OPPORTUNITIES FOR INNOVATORS IN DURHAM REGION

Based in Oshawa, Ontario, Spark Centre is renowned for its dedication to economic growth and sustainability in Durham Region and Northumberland County, serving technology and innovation entrepreneurs — both local and those moving their operations to Canada — with knowledge and support to launch, develop and grow. Through collaboration with funders, stakeholders and organizations, Spark Centre has built an unparalleled, globally recognized, technology and innovation ecosystem that develops competitive, world-class businesses in a wide range of sectors including Energy, Health, Manufacturing, Information Tech, Digital Media, Agritech, Medtech, Clean Tech, and more.

Spark Centre provides a wide range of services from educational programming and advisory services, to co-working space and access to funding. More importantly, Spark Centre provides opportunity. And it was from the desire to create even more opportunity for innovative tech businesses that TechEx was born.

Small and medium sized enterprises — whether developed on Canadian soil or having immigrated from overseas — require money to grow their business. They need opportunities to get their products into the Canadian market and customers who will support them on their path to commercialization. Fortunately, Durham Region has a growing number of industry partners who, together with Spark Centre and its municipal partners, can provide these startups and SMEs with opportunities to launch, grow and scale innovative businesses within Eastern Ontario.

TechEx is an exclusive, invitation-only event that was created by Spark Centre as a way to introduce some of the Region’s most innovative tech companies within the Spark Centre community to such industry partners, as well as to investors, influencers, potential consumers and the community at large. The aim of TechEx is to highlight all that these ingenious companies have accomplished, as well as showcase how their cutting-edge technologies could benefit other businesses across Ontario, and more specifically, within the Region of Durham.

At TechEx, industry leaders, investors, businesses and influencers within the community have an exclusive opportunity to meet, and begin relationships with, these innovative entrepreneurs. For startups, TechEx offers the chance to showcase their leading-edge products and/or services and how they address the needs and challenges of businesses, municipalities and consumers. It also provides these entrepreneurs with access to potential investors as well as an opportunity to gain invaluable expertise, insight and connections from leaders in the industry who can assist in furthering their success.

TechEx kicked off in 2019 with the intention of being an annual affair. However, over the past eighteen months, it has grown to be a widely anticipated event. So much so, that it has expanded to multiple TechEx events per year. The rise of the pandemic in 2020 triggered TechEx’s move from an in-person event to a virtual one. What would at first glance appear to be a drawback, in actuality, sparked even more opportunities for participants. Held virtually — with expo “booths”, virtual networking and one-on-one video sessions — TechEx was now able to expand its reach from Durham Region to across Eastern Ontario, drawing even more investors, industry partners and members from the business and innovation community to support and further the journeys and successes of these innovative entrepreneurs.

“COVID-19 has presented numerous challenges to Spark Centre’s clients as well as Ontario’s entrepreneurial ecosystem as a whole”, said Sherry Colbourne, Spark Centre CEO. “Together, we are facing these challenges head on and TechEx represents the “stronger together” culture of Durham Region and our Eastern Ontario community. The willingness of our entrepreneurial stakeholders to embrace this “new normal” will be showcased at our upcoming May event, as we welcome more startups, more industry partners and more investors than ever before.”

From medtech, cybersecurity, construction and energy, to aviation, robotics, infrastructure and more, today TechEx continues to bring together innovation, technology, entrepreneurs and influential industry leaders for an evening of inspiration, collaboration, and most importantly, opportunity.

# HELPING SMES IN DURHAM REGION EXPAND CYBERSECURITY

## — A PROFILE OF DURHAM COLLEGE'S CENTRE FOR CYBERSECURITY INNOVATION

“Cyber risk is not an IT issue, it’s a business issue—and a strategic imperative. Business leaders must constantly strive to understand the opportunities and risks associated with digital innovation, and then strike a balance between the need to protect the organization from cyber threats and the need to adopt new business models and new strategies that capitalize on digital technology and lay the groundwork for future success.” – Published in the “Take the Lead on Cyber Risk” report by Deloitte.

### Understanding Cyber Risks and Cybersecurity

While most small- and medium-sized enterprises (SMEs) rely on digital technologies for their daily operations, few are proactively taking the steps needed to protect themselves against the ever-increasing threat of cyberattacks.

Cyber attackers access a company’s systems in order to steal, damage or destroy data and sensitive information. They can also misconfigure security settings that impact the operation, finances, and reputation of organizations.

Cybersecurity is the practice of protecting networks and systems connected to the internet by predicting, detecting, and intercepting cyberattacks through technical tools such as firewalls and threat detection services.

### Challenges for SMEs Managing Cyber Risks

Organizations that do not understand cyber risks and cybersecurity may be leaving themselves (and their private information and assets) vulnerable to attack. For SMEs that do recognize cybersecurity as an essential business practice, a lack of resources could be holding them back from implementing the infrastructure required to protect their interests.

Recognizing that a lack of knowledge and connections may prevent SMEs from innovating and growing, the Durham College (DC) Centre for Cybersecurity Innovation, launched in February 2020, aims to help businesses improve their cybersecurity posture.

### Addressing Business Challenges through Applied Research

DC collaborates with innovative, growth-oriented SMEs to help them address challenges and solve problems – the essence of applied research. Drawing on expertise from rigorous post-secondary programs in cybersecurity and related fields, DC forms a project team for each company, comprised of faculty, students, and company representatives, with access to funding and state-of-the-art research facilities to collaboratively solve a business or industry problem. Project results are then transferred to the company, resulting in models, prototypes, adoption of new technologies, and/or evaluation of new or improved products and processes.

Since launching the Centre for Cybersecurity Innovation, project teams have developed and deployed accessible dashboards to aggregate threat feeds, optimized automation for controls, and demonstrated vulnerability assessments through a cloud sandbox, helping companies to make evidence-backed decisions to optimize their cybersecurity posture.

“Through applied research collaborations, we can fill the cybersecurity gap by providing SMEs with access to faculty expertise, funding, leading-edge equipment, and student talent, fostering a culture of innovation and business excellence while supporting local economic growth,” says Debbie McKee Demczyk, Dean of the Office of Research Services, Innovation and Entrepreneurship (ORSIE) at DC.

### Leading the Way for Regional and Global Innovation

As a leader at the forefront of applied research, DC is committed to guiding and supporting industry-focused initiatives and projects that promote and foster innovation and economic growth, both locally and globally.

To learn more about DC’s Centre for Cybersecurity Innovation and how they can help protect, innovate and grow your SME, visit [www.durhamcollege.ca/ORSIE](http://www.durhamcollege.ca/ORSIE). Or follow them on Twitter @DCCybersecurity and Instagram @dc\_cybersecurity.



CENTRE FOR  
CYBERSECURITY  
INNOVATION

FIND OUT MORE AT [DURHAMCOLLEGE.CA/CYBERSECURITY](http://DURHAMCOLLEGE.CA/CYBERSECURITY)

## LEADING THE WAY IN CYBERSECURITY

Creating a first-of-its-kind cybersecurity ecosystem that supports, transforms and advances economic prosperity in Durham Region and beyond.



# CREATING A SUCCESSFUL INNOVATION ECOSYSTEM IN WATERLOO ONTARIO

Jay Krishnan, a veteran entrepreneur, product developer, venture capitalist and innovation leader in the United States and India, is the new CEO of the Accelerator Centre (AC) in Canada’s fastest-growing technology capital – Waterloo, Ontario.

The AC is Canada’s No. 1 private business accelerator and it is among the top five such organizations in the world.

The AC is dedicated to building the success of high-growth technology companies into sustainable operations and has worked with more than 650 start-ups that have created more than 4,000 jobs.

“The Waterloo innovation ecosystem is known globally for excellence,” says Krishnan. “We are witnessing a unique time in history where technology and start-ups are reshaping our future. I’ve seen first-hand the global impact this community has made, and I am excited to be part of the next story that gets written out of Waterloo Region.”

When the pandemic struck in 2020, Krishnan took the opportunity to explore what would come next in his career, hoping he could find a role working to set up a strategic path for start-ups.

“As I was zooming in on ecosystems across the world, the one that really stood out was Waterloo. There is a remarkable number of start-ups coming out of the university, the Accelerator Centre and Communtech, especially in the enterprise and business-to-business areas,” he said.

He jumped at the chance when an opening came up at the AC.

“The AC is a world-renowned organization, with a phenomenal track record. The opportunity to create a new playbook here and explore new markets is so exciting. There is so much to explore within the business-to-consumer piece and growing the global reputation of Waterloo.”

Krishnan has founded three technology companies, experiencing first-hand the start-up cycle of seeding, raising capital, scaling and exit. One of those ventures, Radifinity, an industrial internet-of-things start-up, was acquired by the multinational giant Aditya Birla Group.

Prior to venturing into entrepreneurship, Krishnan held product management and product engineering roles at global multinationals including Cisco, Juniper and Cantata-Dialogic in the United States and India.

In his last role, he was a general partner at Mantra Capital, an early-stage U.S.-based venture capital firm.

He also brings direct experience at the helm of an accelerator after serving three years as CEO of T-Hub, India’s top business accelerator. He established

T-Hub as a thriving innovation centre, growing the team from one to more than 40 internationally based staff and developing programs that supported more than 300 companies and created hundreds of jobs.

T-Hub is credited for transforming the city of Hyderabad into a thriving start-up community.



Jay Krishnan, CEO, Accelerator Centre

Krishnan says the key ingredients of a successful innovation ecosystem are diversity, density and momentum. Diversity of race, gender, technology and thinking that powers ideas, density that increases chances of success, and a momentum that ensures forward progress is all found in Waterloo, says Krishnan.

“In our extensive, global search for the next leader of the AC, Jay stood out as a visionary leader with a deep understanding of what it takes to be successful entrepreneur and build a thriving community,” said board chair Julie Barker-Merz.

“His depth of experience and global perspective will help propel the AC to the front of the world stage and showcase our impressive portfolio of alumni companies as not only the best-of-the best in Canadian tech, but the best-of-the-best world-wide.”



# THE STARTUP ACCELERATOR AT THE CENTER OF ONTARIO'S INNOVATION ECONOMY

When you think of Ontario's innovation economy, one thing comes to mind – entrepreneurship. Specifically, Waterloo, Ontario is home to the province's top tech hub and hundreds of thriving startups.

At the heart of that innovative hub is Canada's top startup accelerator, the Accelerator Centre (the AC). Ranked by UBI Global as Canada's #1 private business accelerator and recognized among the top 5 such organizations globally, the AC is a hotbed for innovation and a gateway to global talent and international markets.

The AC community is made special by a unique mix of talent, opportunity, and support for entrepreneurs.

## Density of Entrepreneurial Minded Talent

Waterloo is world renowned for its talent pool. Home to top academic institutions like the University of Waterloo (UW), Laurier, and Conestoga College, the post-secondary community within Waterloo has fostered a deep and diverse pool of cross functional talent with an eye on entrepreneurship.

UW's Master of Business, Entrepreneurship, and Technology (MBET) Program allows students to pursue their masters while starting a venture, and undergraduate programs like UW's Concept, Laurier's Launchpad, and Conestoga College's Entrepreneurship Collective allow students to explore entrepreneurship and prepares them for the realities of becoming a startup founder.

This vast network of support provides the AC with a strong funnel of high-impact, big ideas and founders who are ready, willing, and able to take on those lofty challenges.

## Deep Commitment to Intellectual Property Creation and Protection

Intellectual property is one of the key intangible ingredients powering Ontario's innovation economy. The Ontario government is committed to supporting and protecting Canadian IP and helping startup founders leverage their IP assets.

Poor IP strategy is stifling to small business. In fact, the Canadian Intellectual Property Office says that Canadian SMEs holding registered intellectual property rights are 3x more likely to have expanded domestically and over 4x more likely to have expanded internationally. The AC's flagship program, The Accelerator Program, is a hands-on, milestone-based curriculum that includes over 400 best practice milestones — 60 of which relate to IP strategy and execution. Through this intensive programming and partnerships with the federally funded agency, The Innovation Asset Collective, entrepreneurs who complete The Accelerator Program are well positioned to be competitive on the global stage.



## A Gateway to Global Markets

The AC is the Ontario innovation community's gateway to international markets and global impact, connecting domestic entrepreneurs to the global market.

The world-class programming at the AC sets entrepreneurs up for global success from day one — providing education, funding, and connections to the international community through key ecosystem partners.

Working with our global network of accelerator partners and local organizations like Communitech, the AC helps startups break into and explore international markets. The AC is also one of the only accelerator programs in Canada that has the creation of a global market strategy as a requirement for completing the program.

The impact speaks for itself. The AC's graduate companies represent the best-of-the-best in Canadian tech — boasting a portfolio that includes names like Kik, Miovision, Magnet Forensics, NERv Technology, Axonify, Intelli-joint, Clearpath Robotics, SSIMWAVE, TextNow, Top Hat, ApplyBoard, Knowledgehook, O2 Canada, and over 300 more Ontario made powerhouses.

## Access to North American Markets for International Startups

As one of Canada's Startup Visa Designated Organizations, the AC also helps international founders expand and relocate their business to Ontario. Through the Startup Visa Program, the AC combines the strength of the Ontario innovation ecosystem and globally successful entrepreneurs to help internationally based startup founders bring their business to Canada to build and grow upon their global success.

Starting their entrepreneurial journey as post-secondary students and leveraging the Startup Visa Program alongside funding from the AC's JumpStart program, the founders of Ontario made unicorn ApplyBoard built a company that is now valued at over \$2B and regularly recognized as Canada's fastest growing tech company.

As Ontario's innovation economy continues to grow, impactful accelerators like the AC will continue to inspire entrepreneurship, enable success, and facilitate global impact. Supported by a deep and diverse network of domestic and international partners, the AC will continue to be the centerpiece of a strong, and growing tech community within Ontario. To work with the AC or inquire about how you can partner with Canada's #1 private business accelerator, contact [info@acceleratorcentre.com](mailto:info@acceleratorcentre.com) or visit <https://www.acceleratorcentre.com/>



# ADVANTAGE BRANTFORD

## — A progressive community for families and businesses in Ontario

“Brantford has become an attractive area for businesses in Ontario due to our vibrant community’s projected growth and convenient access to transportation routes. This business expansion is creating jobs for residents, enriching our community, and contributing to the fulfilment of our very ambitious agenda.”

– Brantford Mayor, Kevin Davis

## One of Canada’s Best Locations to Invest and Grow

In 2020, *Site Selection Magazine* recognized Advantage Brantford among 20 local and regional groups as “Canada’s Best Location”, and for good reason. Located in Canada’s economic heartland along the picturesque Grand River, Brantford offers a vibrant atmosphere for residents, visitors, and businesses.

Founded in 1839 by Mohawk leader Captain Joseph Thayendanegea Brant, Brantford is now renowned as the “Telephone City” crediting Alexander Graham Bell’s invention. Self-proclaimed by Bell as the “dreaming place”, Brantford continues to be a progressive community full of innovation and opportunity.

## Living in Brantford

Whether you are looking for elegant living in a cutting-edge condominium or prefer a country home on the outskirts of town, Brantford offers something for every taste. With just under 100,000 residents, you can enjoy the bustling downtown core with hometown hospitality or tread off the beaten path to enjoy nature.

Explore world-class entertainment options, shop at unique boutiques, taste your way through the city, and be sure to brush up on our local history at one of our many museums and galleries.

In 2020, *MoneySense Magazine* praised Brantford as being one of the top 10 best places to buy real estate in Canada for the sixth consecutive year. The city has since seen an influx of residents relocating from surrounding areas bringing with them in-demand skills and thriving businesses.

## Establishing a Business

Brantford’s strategic location enables businesses to reach major North American markets. Easy access to major highways, railways, cargo and passenger aviation systems, and extensive inland and international marine shipping facilities, makes Brantford an ideal location for manufacturing and shipping.

In 2020-2021, many established businesses are choosing Brantford as a region to expand or relocate their operations. The region has become particularly attractive to a number of manufacturing and food production companies.

For example:

- A \$19.1-million expansion is underway at the Piller’s Fine Foods processing plant.
- Grissin Bon Limited is expanding their food manufacturing facility with an additional 26,414 square feet of production space.
- Upfield Canada Inc. is moving their spreads, margarine, and dairy alternatives product production from Etobicoke.
- The Hershey Co. will move from Mississauga into a 48,124-square-metre facility in Brantford.
- CM Labs will supply Brantford-based forestry equipment manufacturer, Tigercat, with state-of-the-art simulators.
- FI International Inc. will expand its operations into Brantford after acquiring Fleetway Transport Inc.
- Heritage Hockey Sticks Inc. will be transferring operations from a smaller facility in Cambridge to double their manufacturing space in the Brantford location.

## Discover Brantford, Ontario

For more information on living and working in Brantford, see Advantage Brantford or contact the Economic Development Department. You can also stay in the loop by following us on Facebook and YouTube.





# HHS STEM CELL LAB PLAYS KEY ROLE IN GROUNDBREAKING GENE THERAPY STUDY

BY LISE DIEBEL

## Canadian research team is the first to use gene therapy to treat patients with Fabry disease

Outcomes of adult patients with Fabry disease could be dramatically improved thanks to a groundbreaking Canadian pilot study on gene therapy, with Hamilton Health Sciences (HHS) Clinical Stem Cell Laboratory playing a key role.

“This study – with multiple healthcare partners across the country — really is a success story that beat all expectations,” says Dr. Ronan Foley, an HHS clinical hematologist and director of the Clinical Stem Cell Laboratory at the Juravinski Hospital. “The results were almost miraculous.”

Fabry disease is a rare disorder that affects men more severely than women. People with Fabry disease have a gene called GLA that does not function correctly, leading to serious medical issues over time. Symptoms can include burning in hands and feet, kidney failure, or gastrointestinal symptoms such as abdominal cramping, frequent bowel movements, diarrhea, nausea or vomiting. There are more than 500 people in Canada known to have this illness.

## HHS plays key role

A Canadian research team including HHS was the first to use gene therapy in 2017 to treat patients with Fabry disease. Their highly-promising findings were published this month in the journal, *Nature Communications*. Co-authors include Foley, retired HHS transfusion medicine technical specialist Pamela O’Hoski and HHS hematologist Dr. Graeme Fraser.

O’Hoski and her team learned how to use this technology almost 20 years ago, developing skills to purify the ‘mega-dose’ human stem cells critical for this study. Fraser played a key role in the trial’s oversight and consultation. The Freeburne Banting Foundation, a long-time HHS supporter, provided funds for stem cell purification in this study.

## Cross-country collaboration

The five patients recruited for the study were connected to Alberta Health Services’ Foothills Medical Centre in Calgary, Princess Margaret Cancer Centre in Toronto, and Nova Scotia Health’s Queen Elizabeth II Health Sciences Centre in Halifax.

“The patients’ stem cells went on a cross-country journey,” says Foley. Stem cells were collected at the patients’ local institution and shipped to Hamilton for purification.

“Our role in the study would only work if we met two conditions — a large number of stem cells that were highly purified,” says Foley. “People with this condition have a lot of terrible medical consequences. If you can replace the enzyme they need through gene therapy by inserting a healthy gene, you may have a dramatic impact on their outcomes.”

From HHS, the purified stem cells were sent to Toronto’s University Health Network for the gene transfer, and were then reviewed by Health Canada for approval to treat the five patients.

## Miracle of gene therapy

Prior to their participation in the study, these patients underwent enzyme therapy infusions every two weeks. “What we’re providing is a continuous, robust gene-delivered enzyme that works 24/7,” says Foley. “We hope this will be much more optimal as we follow patients over the years.”

Patients began producing the corrected version of the enzyme to near normal levels within one week. With these initial results, some patients have been able to safely stop their intravenous enzyme therapy for now.

Ongoing follow-up will extend until February 2024.

Clinicians emphasize it will take many years of further testing before this experimental treatment becomes a clinically available standard of care, but this study sets the stage for additional clinical trials in Fabry disease and other metabolic disorders.



## ONTARIO STUDENTS PREPARED TO COMPETE GLOBALLY

**Ontario universities are proud of the partnerships that enable us to contribute to the province's economic life**

Farmers' yields boosted by agricultural innovations, vibrant companies formed from medical discoveries, mining and energy firms made more productive by new technology, clusters of business activity driven by high-tech start-ups, and many thousands of international students and researchers who come to make Ontario their home.

We believe in not only educating young people to be well-rounded and responsible members of society, but also in helping them to be active participants in a prosperous thriving and globally competitive province.

Through the jobs we help create the innovations we inspire, the creation of new infrastructure and the activity of our students, it's estimated that Ontario's universities contribute more than \$115 billion annually to the province's economy. Our research and development alone helps boost Ontario's economic activity by almost \$25 billion. This impact is felt across the province and reaches into all corners of society.

Our survey respondents told us they believe universities have a major role to play in driving economic development, producing research with tangible economic impact, supporting Ontarians' entrepreneurial spirit, and attracting the brightest minds to come to the province and stay. They believe challenges such as

job insecurity require partners from all sectors to collaborate on bold solutions for job creation and growth.

Universities are committed to being good economic citizens. In the technologies that are transforming the global economy, we are partnering to make sure Ontario is not only ready, but taking the lead. In artificial intelligence and machine learning, the Vector Institute, supported by the University of Toronto, is partnering with government and major employers to attract top researchers to design solutions for tomorrow's new economy. Similarly, the Institute for Quantum Computing at the University of Waterloo and the biomedical research collaboration Medicine by Design in Toronto are being fueled by university expertise, helping drive discoveries that boost economic activity.

Thriving clusters – regional concentrations of companies, non-profits and academic institutions that spur growth and innovation in a common field – are a major opportunity for economic expansion in Ontario. Just as computer-science talent drives employment in Kitchener-Waterloo and IT innovation boosts the Ottawa region, similar clusters are flowering throughout the province, energizing communities with new ideas and new jobs. They demonstrate



how economic growth can be powered by collaboration and knowledge-sharing between postsecondary institutions, business and the public sector.

Through our joint projects with industry and communities, we help strengthen industries from tourism and agriculture in the southwest, to digital tech and biotechnology in the Golden Horseshoe and mining and forestry in the North. The Institute for Competitiveness and Prosperity recently highlighted the role universities play in driving the mining industry, for instance, writing that the human capital and expertise we provide are “one of the industry’s greatest assets.” Its report, *Collaborating for Growth: Opportunities in Ontario*, also cites our role in helping develop the talent for three other industries with high-growth potential: finance and insurance, life sciences, and motor vehicle and parts manufacturing.

We also want to help grow a society that’s buzzing with entrepreneurial energy. This matters because the rise of the “gig economy” and part-time work has made self-employment and starting up a business an attractive option. A 2017 *Global Entrepreneurship Monitor* report found that 16.7 per cent of working-age Canadians are involved in early-stage entrepreneurial activity – up from 12.2 per cent in 2013.

The incubators and accelerators on our campuses give students the opportunity to develop their business ideas, the confidence to take risks, and the access to networks of investors that could help put their dreams in motion. Thousands of young students and recent graduates in Ontario have started up businesses, and even those who don’t find immediate success are learning how to fail, pivot, try again and become lifelong entrepreneurs, sparking new ideas and creating jobs.

We believe that the people of Ontario are its greatest resource. Its talent attracts businesses from around the world. That’s why universities are committed to ensuring a rich talent pipeline – developing high-quality graduates who advance research, pass on their knowledge and hone the leadership skills to become part of a world-class workforce.

Ontario’s students and faculty also bring their energy and creativity to the world through study-abroad opportunities and international research partnerships that help give Ontario a global reputation for excellence – and then bring the benefits of new ideas back home. And through research collaborations and by welcoming almost 60,000 international students from more than 200 countries, we help attract new knowledge to enrich our own economy.

However, the path to greater prosperity can only be laid with the help of our partners in business and the public sector, enabled by decisive government leadership.

“Local learning institutions such as universities, colleges, and innovation hubs are vital aspects of building a strong knowledge economy,” Gregory M. Spencer of The Martin Prosperity Institute wrote recently. “However, on their own, they do not automatically create economic prosperity. For this to occur they must have strong ties to local industry and coordinate their offerings with the needs of businesses.”

We pledge to maintain and strengthen these ties. We share the same vision of economic growth and an entrepreneurial society: Let’s work together to achieve it.



## ONTARIO UNIVERSITIES FOCUSED ON SCALING UP START UPS

Across Ontario, universities help nurture the skilled and successful citizens of tomorrow. Equally important for our future is the daily activity taking place at labs and research facilities, where ideas and discoveries are born that will lead to a more productive, vibrant and healthy province.

The results of research and innovation help feed us, save our lives, transport us to work, power our homes, organize our social structures and allow us to communicate with each other. Many of the technologies we have come to rely on – from the smart phone to the MRI and the three-point seat belt – have their origins in research carried out in postsecondary institutions, often in partnership with business and governments.

In Ontario's rapidly-changing economy, innovation is key. During our listening initiative, we consistently heard innovation cited as a crucial element of transformation and growth. Ontarians told us that forward-thinking research, inventions, technology and science are fundamental to keeping the province competitive and thriving. We also heard that universities need to be a proactive partner.

"When a university can use the tremendous intellectual resources at its disposal to help provide real world, timely solutions to local problems, those solutions can be scaled up and the lessons learned applied to provincial problems," one parent wrote in our survey.

According to Statistics Canada, the higher education sector is the second largest per-former of research and development in Ontario, carrying out an

estimated \$5.2 billion in work, which translated into 34 per cent of the province's research activities in 2014.

University-generated research partnerships drive an innovative society by assisting in the production of technological breakthroughs that make businesses more competitive, produce new ideas and data that shape better policies, and generate solutions to local and global issues.

Ontario universities are involved in collaborative research projects that aim to improve lives across all areas of business and society: for example, reducing the harm of oil-and-gas industry flaring, examining new medical uses for wearable technology, looking at ways of making commercial cross-border traffic between Canada and the U.S. more efficient, developing synthetic probiotic treatments to combat the *C.difficile* virus, and working with police forces to improve officers' use-of-force decision-making during confrontations.

Further partnerships with private- and public-sector stakeholders are vital in order to produce research that has quantifiable, positive effects on the province.

As Rick Huijbregts, then-VP of Digital Transformation and Innovation at Cisco, said at our Roundtable on Innovation and the New Economy: "Innovation doesn't only happen in your or our R&D departments. Innovation happens everywhere. We can make the transformation only work when we collaborate between the private sector, academia and government."



The federal report delivered by Canada’s Fundamental Science Review panel (the Naylor Report), which called for more funding and improved support structures for research and innovation, underlined the crucial role played by postsecondary research in “investing in the future.”

“When quantum physics and relativity were born in the early 20th century, no one could have predicted the array of innovations that would result many years downstream – innovations as varied as the transistor and semi-conductors, solar cells, rechargeable batteries, the laser, the integrated circuit, the personal computer, the Internet, medical imaging, flat-panel high-definition televisions, satellites in orbit, and the BlackBerry, to name but a few,” the report said.

In this spirit of discovery, collaborations across the province between university researchers and business and community partners are driving innovation in artificial intelligence, quantum computing, nanotechnology, clean energy, medical and health research, social sciences, and many other fields.

However, the positive effects of research can’t find their way into the community unless the ideas and inventions born in labs can be turned into real-life products and solutions. Leaders from the technology sector have emphasized to us that Ontario needs to do more to ensure its research is commercialized and goes to market. A 2015 innovation report card from the Conference Board of Canada gave Ontario good marks overall, but said it “might be facing challenges commercializing and reaping the larger benefits of innovation.”

Promoting the commercialization of research requires coordinated work. It requires the combined efforts of universities, businesses, government, accelerators and investors to support projects from the development phase through to product creation and distribution to the customer or end-user. In the case of ideas-based research in areas such as traffic management or health policy, “commercialization” means ensuring it is seen and adopted by decision-makers and service providers.

A thriving and livable Ontario in 25 years’ time will in part depend on the innovations that universities and their partners are working on now. We are committed to developing the research partnerships to produce the concrete, actionable innovations that will help ensure a dynamic future



# TECHSTARS TORONTO ANNOUNCES 10 COMPANIES FOR THE 2021 COHORT

The companies joining the 2021 cohort include:



**Cameraah**

<https://www.cameraah.com/>

If you're interested in AR solutions for your business then you'll want to learn more about Cameraah. The newest product by <https://superfan.ai/> launching soon, will help you create filters to increase engagement with your customers. Similar to Canva for design, Cameraah will make the process smooth and seamless.



Small Solutions • Big Impact

<https://equointl.com/>

If you're searching for a better way to steer clear of plastic dinnerware and straws, you'll want to learn more about EQUO (pronounced eco). Founder Marina is changing the way sustainable companies approach consumers. They sell eco-friendly straws made of materials that include rice and bamboo. You can find EQUO-friendly products on Amazon.

**MINE'D**

<https://doyoumined.com/>

If you're interested in therapy but feel like there are too many barriers then you'll want to download the Mine'd app. They connect you with top emotional wellness experts and a community through daily live and on-demand classes. Topics range from sex and relationships to career and money advice. Find Mine'd now on iOS and Android.

**mixpose**

<https://mixpose.com/>

If you miss doing yoga with the help of an instructor because of the restrictions of the pandemic then Mixpose is the app for you. Using AI pose estimation powered by Agora (the people that power Clubhouse) you can get better at Shavasana and Downward Dog virtually. Mixpose is available now on Android and iOS.

**plentywaka**

<https://www.plentywaka.com/>

If you have an interest in Uber and ride-sharing then you'll want to learn more about Plentywaka. They are a bus sharing solution in Nigeria that is growing quickly. Using Plentywaka saves time and gives you a variety of options. You can download the Plentywaka app on iOS and Android.

**ROLL**

<https://www.rollscoters.com/>

If you're looking for an alternative to public transportation then you'll want to check out Roll. They are expanding with e-scooter options across Canada, so far in BC and Ontario. Whether you're going to buy groceries or to work this could be the transportation solution for you. You can download Roll on iOS or Android.

**smartbin.io**

<https://www.smartbin.io/>

If you're looking for a high tech waste management system for your business then you'll want to learn more about Smartbin.io. The bins notify your team when it's full and makes sure to be operating efficiently. Especially during a pandemic, where we're all trying to be as clean as possible it is something you'll want to look into.

**TalentQL**

<https://talentql.com/>

If you're running a startup or business yourself and looking for talent, then you'll want to check out TalentQL. Their mission is to provide top talents globally with access to the jobs they deserve, with an initial focus on African tech talents. Not only do they help you hire but they will train the hires to understand your company culture.

**Whelp**

<https://getwhelp.com/>

If you're looking for a way to integrate customer conversations then you'll want to learn more about Whelp. They are an AI-based cloud solution for faster, more personalized customer support. Whether using Facebook or WhatsApp, among others, you can communicate seamlessly with your customers. You can download Whelp on Android.

**zerv**

<https://zerv.io/>

If you're looking to book a massage or a mani-pedi in the GTA but find the process overwhelming, then you'll want to check out Zerv. In one place you can book at over 100 businesses and with over 600 practitioners. Zerv is available for download on iOS and Android.

## About Techstars

The Techstars worldwide network helps entrepreneurs succeed. We connect entrepreneurs, investors, and corporations. The Techstars Toronto Accelerator is full of innovation, mentors, capital, and talent. Founded in 2006, Techstars began with three simple ideas—entrepreneurs create a better future for everyone, collaboration drives innovation, and great ideas can come from anywhere. Now we are on a mission to enable every person on the planet to contribute to, and benefit from, the success of entrepreneurs. In addition to operating accelerator programs and venture capital funds, we do this by connecting startups, investors, corporations, and cities to help build thriving startup communities. Techstars has invested in more than 2,200 companies that today have a combined market cap valuation of \$29 Billion. In 2021 this program will run virtually.

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<https://www.techstars.com/>

# BUSINESS WITHOUT BOUNDARIES

## START HERE!

If you're an international company looking to expand into the Canadian marketplace, Burlington Ontario Canada is the place to start. Our International Soft Landing program provides companies with office space and vital resources to hit the ground running. At TechPlace, Burlington's 8,600 sq.ft. innovation centre, you'll be provided with subsidized office space for your team, private wireless networks, access to programming and networking opportunities, connections to hiring and training, and immigration support. Through our partners at Haltech Regional Innovation Centre, you'll have access to educational events, expert advisors and support in making strategic connections to ensure your expansion into Canada is as seamless as possible.



### VIRTUAL TOUR

To schedule a virtual tour and meet our team, email us at [Invest@burlington.ca](mailto:Invest@burlington.ca) or visit [InvestBurlington.ca/techplace-startup](http://InvestBurlington.ca/techplace-startup)



**“ BURLINGTON ONTARIO CANADA ”**

“After visiting Burlington and getting a tour of TechPlace, we knew right away that we wanted our Canadian office to be located here. Having an office space at TechPlace not only allows us to have easy access to the North American market but it also provides access to mentorship and resources that will make our expansion easier and assist us in hiring the right talent.” – Mario Alejandro Escoto, CEO of Beltech Technologies, ICT company from Central America

## BURLINGTON'S KEY INDUSTRIES



Advanced Manufacturing



Biomedical & Life Sciences



Clean Technologies



Food & Beverage Processing



Professional & Technical Services



Information & Communication Technology



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