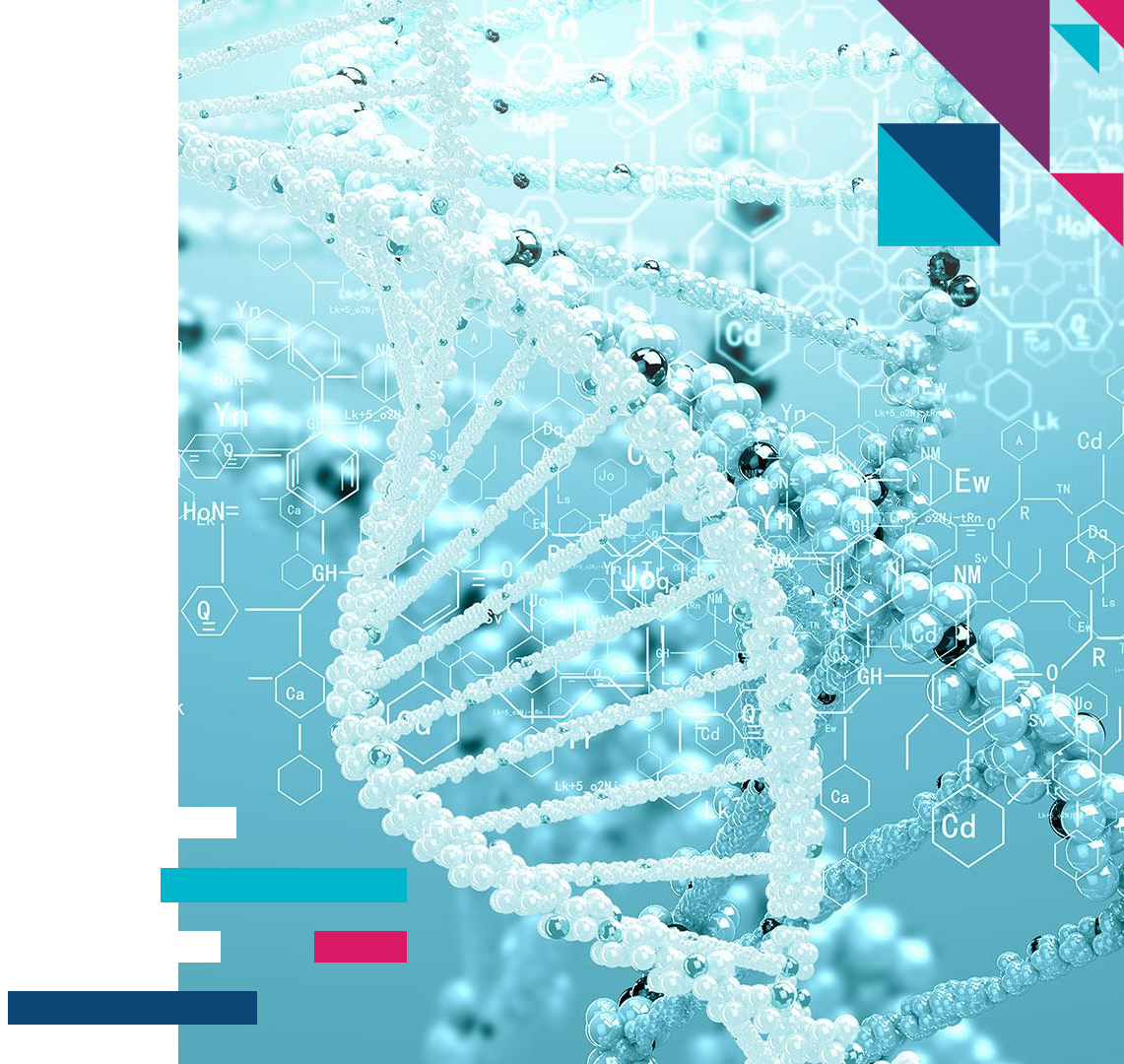




# Greater Montréal: A Thriving Health Tech Hub



# The world's best economic promotion agency at your service





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# A strong and growing metropolis, strategically located in North America



## Population

- 4.3 million residents
- 23% of population are foreign-born (34% for the city of Montréal)



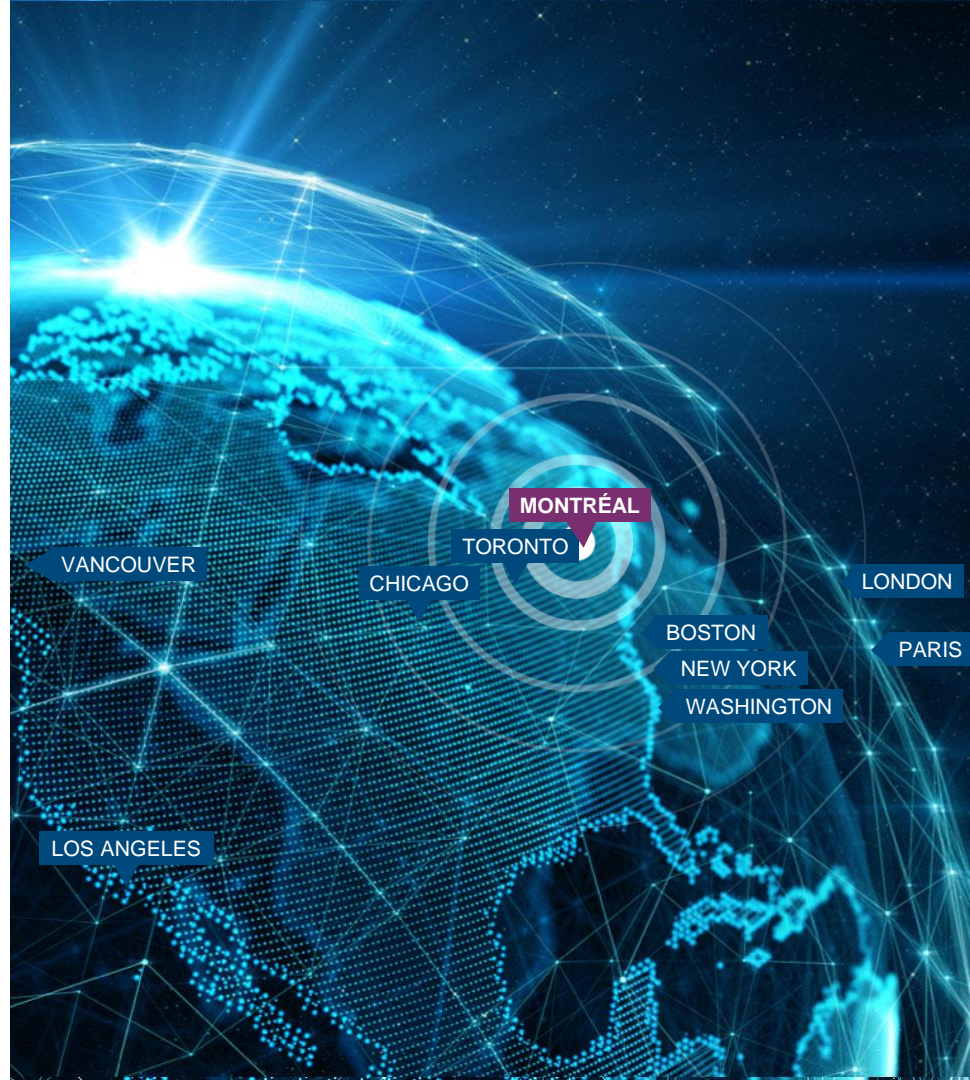
## Economy

- Best economic growth in Canada in 2018 and 2019
- Best economic growth forecast for Canada in 2022\*
- \$2.233 billion in foreign direct investment in 2020 supported by Montréal International



## Location

- 82 municipalities, 1 metropolitan area
- A 90-minute flight to Boston and New York City
- Less than a one-hour drive to the U.S. border



Note: \* 2019-2022.

Source: Conference Board of Canada, 2021; Statistics Canada, 2020; Montréal International Analysis.

# 01

## Life Sciences: A Strategic Sector for Québec



# Québec's ambitious Life Sciences Strategy

## Four key objectives

- 1 Increase Investment in research and innovation in all life sciences
- 2 Foster the creation of innovative companies and ensure their growth
- 3 Attract new private investment
- 4 Further integrate innovation into health and social services network

## Two priority niches to position Québec internationally

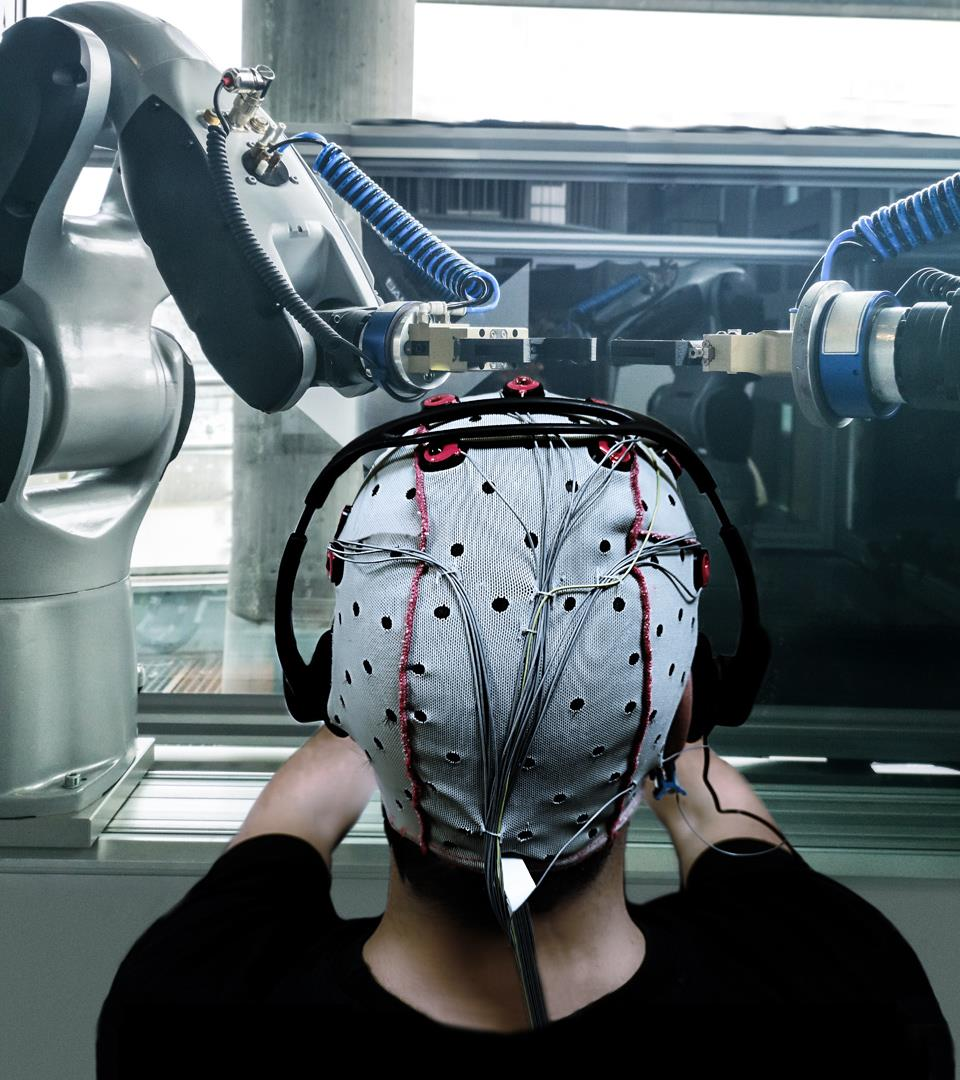
- 1 Precision medicine
- 2 Big Data in the health sector

## Two goals

- 1 Attract **\$4 billion** of private investment in Québec by 2022
- 2 Make Québec one of the **Top 5** North American life sciences clusters by 2027







## Many key programs within the Québec strategy are fostering the Health Tech sector



Creation of an innovation bureau and the Chief health innovation strategist position



Creation of an innovation support fund



Optimized and accelerated process for the integration of innovative health technologies

# 02

## A Unique Interconnected & Collaborative Ecosystem





# Canada's fast growing medical device market

Ranked **8<sup>th</sup>**  
globally\*

**US \$6.7 B**

Medical device market size  
(2017)

**5.7%**

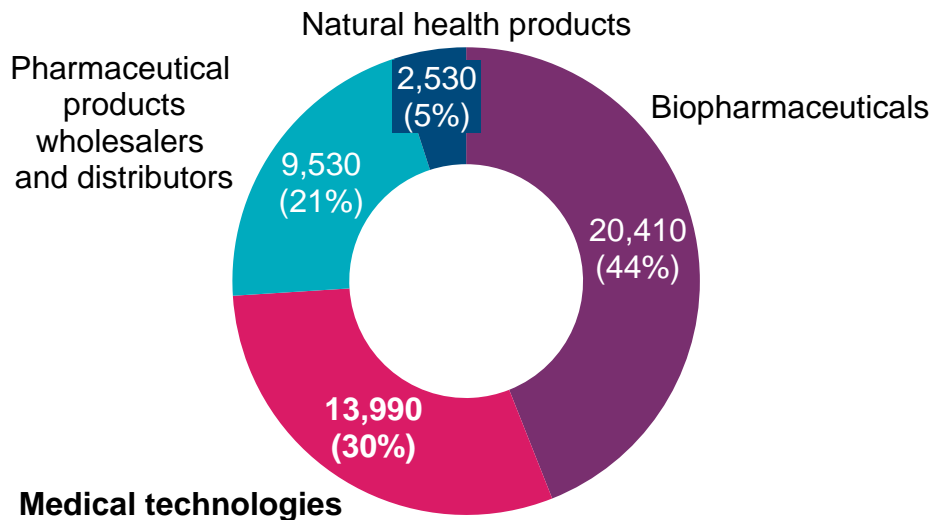
Compound annual growth  
rate in revenues 2016-  
2021 (in US\$)

\*The Canadian medical device market was ranked 8th in the world in terms of value in 2017.

Source: BMI Research's Worldwide Medical Devices Market Factbook 2017, Invest in Canada, 2017: [http://www.ic.gc.ca/eic/site/lsg-pdsv.nsf/eng/h\\_hn01736.html](http://www.ic.gc.ca/eic/site/lsg-pdsv.nsf/eng/h_hn01736.html).

# Québec boasts a thriving health tech sector with 35% of businesses and 30% of LSHT jobs

**Distribution of jobs in the LSHT industry  
in Québec in 2020**  
(in number of jobs and %)



**369+ companies**  
specialized in health tech



**13,990 jobs**  
in private companies



**Several thousand researchers**  
in public organizations



**80 % of Québec's ecosystem**  
is based in Greater Montréal

# Numerous Health Tech companies are booming in Montréal

## Foreign subsidiaries



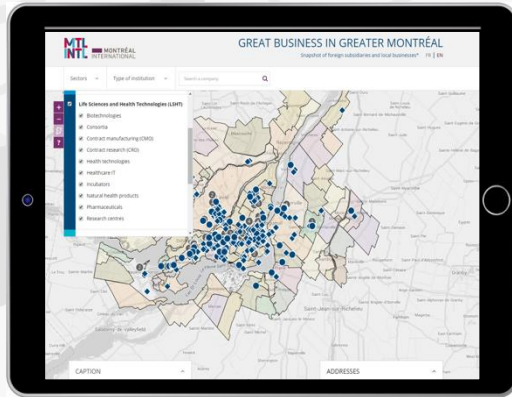
## Local companies





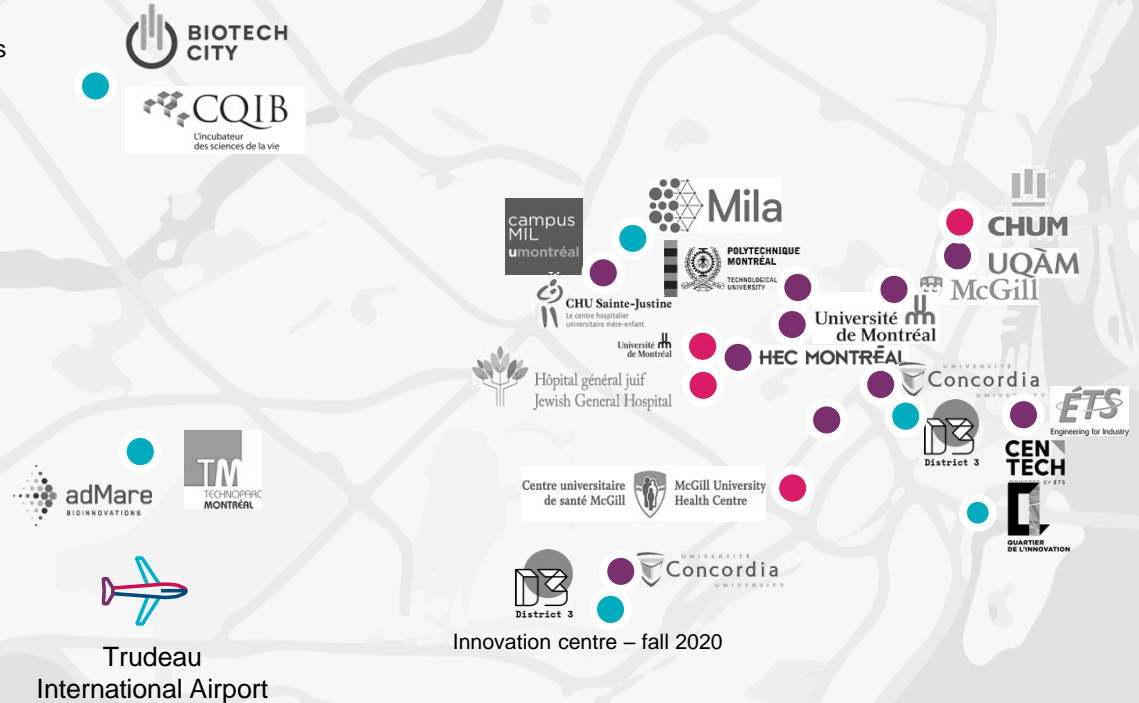
# Major hub to boost business partnerships throughout the region

Click [here](#) to visit our interactive map of companies



## Legend

- Industrial park / innovation cluster
- University Hospital Centre
- University



Innovation centre – fall 2020

# World-renowned scientific excellence centres and infrastructures

Montréal is reputed for its **collaborative approach**  
(Research – Industry – Government)

Recent major investments in **cutting-edge infrastructures**:




**Centre hospitalier  
de l'Université de  
Montréal (CHUM)**

500,000  
ambulatory  
visits/year



**McGill University  
Health Centre  
(MUHC)**

220,000  
ambulatory  
visits/year



**CHU Sainte-Justine,  
Mother & child  
university Hospital  
Centre**

80,000  
ambulatory  
visits/year

Research centres		
		
		
		
		
		
		

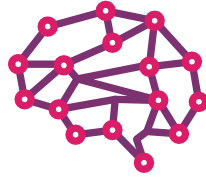
# Montréal has developed an internationally acclaimed expertise in several fields



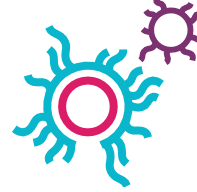
**Oncology**



**Cardiovascular  
and metabolic  
diseases**



**Neuroscience  
and mental  
health**



**Infectious  
diseases**



**Aging**



**Cellular therapy,  
regenerative medicine**

**Rare diseases**



**Medical imaging  
and cytometry**



**Precision medicine  
(genetics, genomics  
and proteomics)**



**Big data and  
artificial intelligence**



# Many opportunities for foreign investors within the Montréal Health Tech strategic axes



## Connected health

### ITC

- Patient autonomy patient and home-based care
- Mobile applications
- Wellness
- Healthcare logistics
- Electronic medical record
- Optimization of operations

### TELEHEALTH

- Telemedicine
- Remote monitoring
- Remote training

### BIG DATA

- Diagnostic assistance
- Tailored treatment
- Genetic profile
- Predictive analysis
- Internet of things



## Imaging and simulation

### VISUALIZATION

- Diagnosis support

### SURGICAL APPLICATIONS

- Surgical planning
- Guiding
- Surgical robots

### MEDICAL TRAINING

- Health personnel
- Specialized training



## Human performance

### PREVENTION

### SPORTS MEDECINE

- Injury prevention
- Performance improvement

### REHABILITATION

- Prostheses
- Physiotherapy
- Environment adjustment
- Recovery
- Biomechanics



## Personalized health

### DIAGNOSIS

- Biomarkers
- Near-patient tests

### CUSTOM SOLUTION

- Implants
- Targeted treatment

### NEUROSCIENCE

### CARDIOLOGY

### ORTHOPAEDICS

## ENABLING TECHNOLOGIES

Textiles

BioMEMS

Biomaterials

Plastics/Polymers

Nanotechnology

# World-class Health Tech University research chairs



- Canada Research Chair in orthopedic Engineering & NSERC/Medtronic Industrial
- Research Chair in Spine Biomechanics  
Chairholder: Carl-Éric Aubin
- Canada Research Chair in Quantitative Magnetic Resonance Imaging  
Chairholder: Julien Cohen-Adad
- Canada Research Chair in Medical Imaging and Assisted Interventions  
Chairholder: Samuel Kadoury
- Canada Research Chair in Vascular Optical Imaging  
Chairholder : Frédéric Lesage
- Canada Research Chair in Medical Nanorobotics  
Chairholder: Sylvain Martel
- Canada Research Chair in Fabrication of Advanced Microsystems and Materials  
Chairholder: Daniel Therriault
- Canada Research Chair in Mechanobiology of the Pediatric Musculoskeletal System  
Chairholder : Isabelle Villemure



- Canada Research Chair in Biomedical Data Mining  
Chairholder: Neila Mezghani



- Canada Research Chair in 3-D Imaging and Biomedical Engineering  
Chairholder: Jacques de Guise
- Canada Research Chair in Biomaterials and Endovascular Implants  
Chairholder: Sophie Lerouge
- Canada Research Chair in Engineering Innovations in Spinal Trauma  
Chairholder: Yvan Petit



- Canada Research Chair in Micro and Nanobioengineering  
Chairholder: David Juncker
- Canada Research Chair in Biosynthetic Interfaces  
Chairholder: Marta Cerruti



- Canada Research Chair in Biomedical Imaging and Healthy Aging  
Chairholder: Habib Benali

# Examples of flagship programs to accelerate discovery, development and commercialization



Consortium for Industrial Research and Innovation in Medical Technology



Business incubator dedicated to high-tech companies, for instance medical technologies and manufacturing



Accelerator for medical technology companies

**MEDxlab**

Accelerator for digital health created by Centre québécois d'innovation en biotechnologie (CQIB) and Campus des technologies de la santé (CTS)



Startup accelerator and entrepreneurial community located within Concordia University



Connector and facilitator for the neurotechnology community providing key resources and technological initiatives



Concordia's New Science hub



# TransMedTech Institute, a unique transdisciplinary open innovation hub



- Supports the **development of next-generation medical technologies** for important diseases to facilitate their implementation in the health system and industry
- **Living Lab** focused on users and needs dynamics fostering transdisciplinary and intersectoral collaborative research, open innovation and creativity.
- **Partners and founding institutions**



## Confirmed initiatives since 2017:

- **47** projects in development
- **7** Chairs /recruited professors
- **40** Platforms
- **84** Students / 3 training programs (entrepreneur, industry, academic)
- **74** Scientists/clinicians
- **63** Partnering institutions companies
- **36** HQP

# Strong venture capital funding from various players in Québec

- More than **US\$2.7 billion in VC investments** between 2018 and 2020 in Montréal
- 6 of the 10 most active VCs in Canada in 2020 are based in Montréal
- Example of funding for life sciences companies:



raised **US\$185 M** in 2021  
and **US\$37 M** in 2020



raised **US\$100 M** in 2021  
and **US\$60 M** in 2020



raised **US\$82.5 M** in 2019



raised **US\$80 M** in 2018



raised **US\$30 M** in 2020

## Private venture capital



## Institutional partners



# Montréal is home to Canada's AI cluster headquarters



**SCALE AI**

Canada's AI supply chain supercluster



**Forum  
IA Québec**

Québec's AI organization fostering the development of Québec's AI ecosystem



**Other health-related  
Canadian superclusters**



a cross-industry  
collaboration in healthcare,  
communications, technology

**NGen**

Next Generation  
Manufacturing Canada

The Innovative  
Manufacturing supercluster:  
manufacturing 4.0



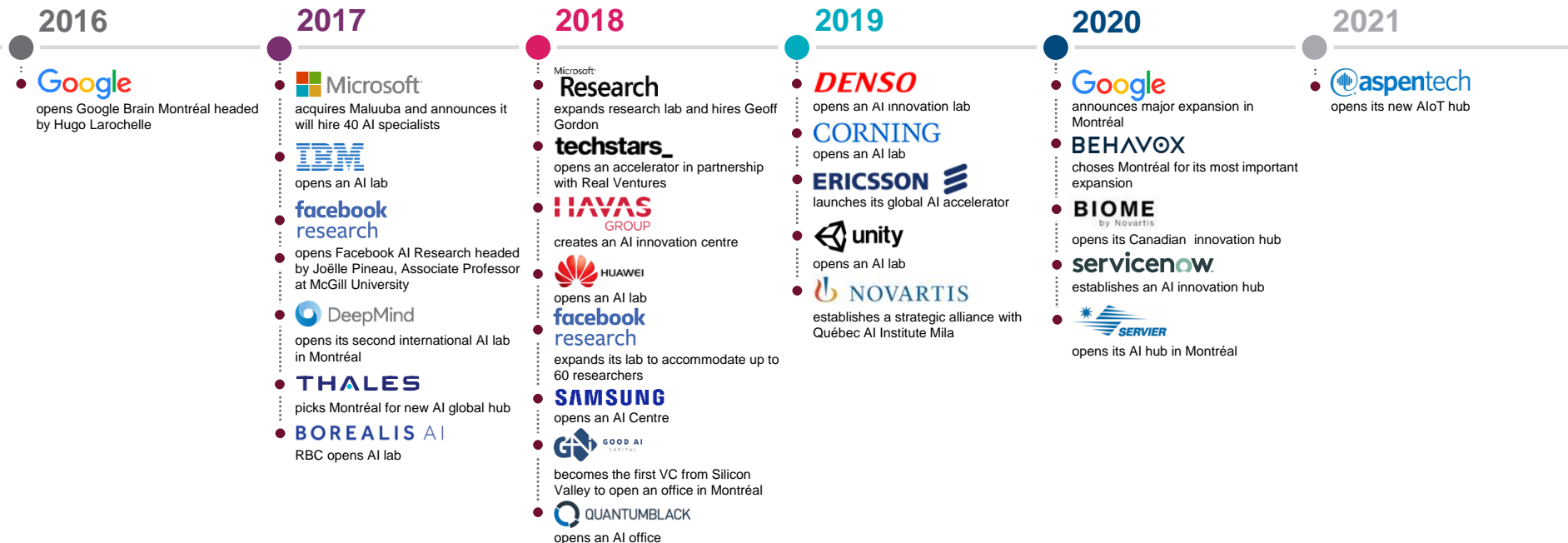
# Mila, a thriving AI hub in the Mile-Ex neighbourhood

- With **600+ researchers**, Mila is the **world's largest academic research lab specialized in deep learning and reinforcement learning**
- A collaborative ecosystem of AI researchers, startups and major companies
- Examples of global strategic partners within Mila:

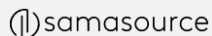




# A few of the world leaders developing their AI expertise in Montréal



## Other foreign companies that have chosen Greater Montréal



# Examples of Montréal-based companies using AI in healthcare



**IMAGIA:** developing radiomics biomarkers and clinical decision support systems



**My Intelligent Machines:** accelerating post genomic research by leveraging AI & bioinformatics



**QUANTUMBLACK:** using data, analytics, and design to optimize how drugs are brought to market



**InVivo AI:** facilitating accurate toxicity screening in the earliest phases of drug discovery



**Corstem:** medical imaging analysis and computer vision, using machine learning



**Informed experiments:** distilling the complexity of gene interaction networks with AI algorithms to accelerate cancer research



**Precision analytics:** predictive analytics and cloud computing to handle large datasets



**Diagnos:** early detection of critical health issues through the use of AI



**Mr Young:** AI-powered chatbot designed to help cope with anxiety



**Myelin:** AI synthesis of ASD scientific data



**Innovie Health:** AI solution to drive the most accurate care management strategy for healthcare system



**Arctic Fox AI:** AI-assisted radiology for Alzheimer's and related dementias



**BIOS:** developing neural interfaces to enable AI-based treatments on organs and nerve systems throughout the body



**Zilia:** combines imaging, spectrometry and AI for the detection of biomarkers involved in ocular, neurological and systemic conditions



# Key initiatives at CHUM to facilitate data access and the use of AI

## Data lake project CITADEL

- **The Center for the Integration and Analysis of Medical Data (CITADEL)** of the Centre hospitalier de l'Université de Montréal (CHUM) is one of the initiatives adopted to facilitate learning, teaching and communication:
  - 20 integrated information systems
  - 19.4 million episodes of care
  - 3.6 million patient data

## School of AI in Healthcare (SAIH)

- Devoted to the study of the social, legal and ethical implications of **AI in the health sector**
- Doctors and researchers at the CHUM are pursuing **80 projects involving artificial intelligence**

# Some examples of Montréal's expertise in VR and AR in healthcare



Pixel Dairy Productions Inc.  
**pixelmolkerei**  
creative company

VR Ecosystem mixed and augmented reality: Designed for medical healthcare companies



  
**JINTRONIX**

VR rehabilitation system



**OSSimTech™**

VR open surgery simulators in orthopedics



  
**PAPERPLANE**  
THERAPEUTICS

VR video games to reduce pain for children receiving medical care



# At the forefront of AI for good initiatives

- For ethical & responsible AI



< >  
Montréal Declaration  
Responsible AI\_  
< / >

An initiative of the Université de Montréal

Since December 2018  
more than 1,900 signatures  
from citizens and 108  
organizations

- Research centres with AI for good initiatives



Fostering a dialogue on the socially responsible use of AI and the development of social and environmental applications.  
Montréal's AI4Good lab aims to get more women working in Artificial Intelligence and other events

HumanIA

Directing AI towards the common good through humanistic and multidisciplinary studies and research

inven.T  
Centre d'innovation technosociale

Catalyst for technosocial and responsible innovation projects



TechAide AI4Good Conference and Hackathon 2020

**SINCE ITS OFFICIAL LAUNCH IN 2016,  
TECHAIDE HAS RAISED \$1.34M FOR  
CENTRAIDE**

# 03

## A Deep and Growing Pool of Highly Qualified Talent



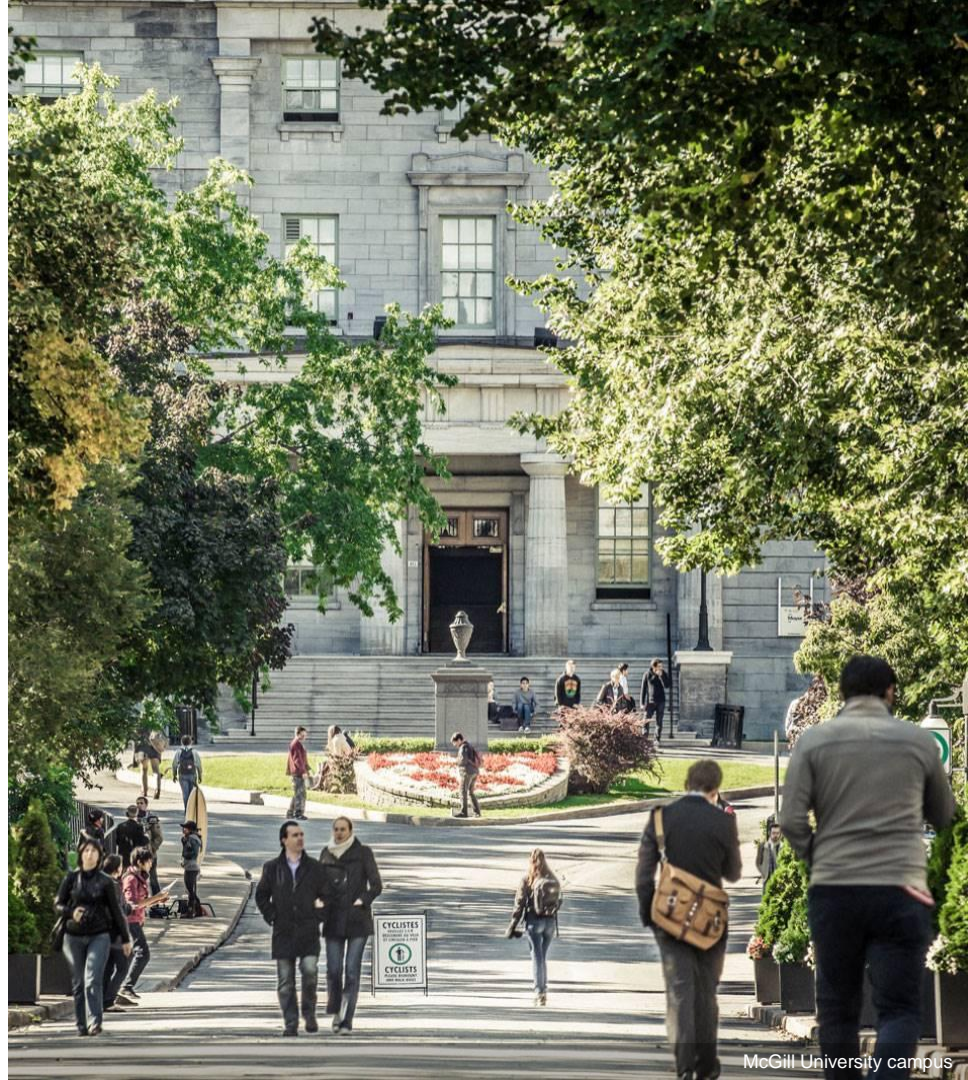


# The best student city in the Americas and Canada's university capital

- **Canada's university capital:**  
15 university institutions and 60 colleges
- **320,000 post-secondary students,**  
including **more than 200,000 university students**  
and **35,500 international university students**
- **1<sup>st</sup> in Canada for university research funding**  
with \$1.34+ billion yearly



Best student city in the Americas tied with Boston  
QS Best Student Cities Rankings 2022



McGill University campus

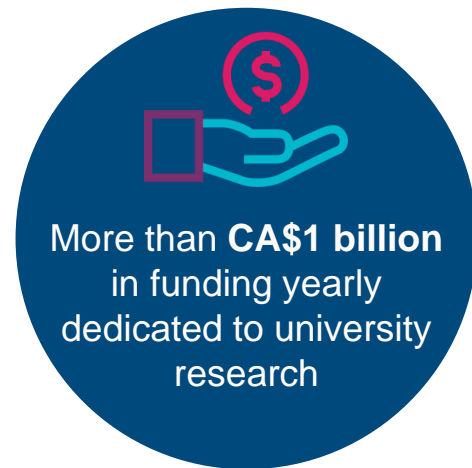
# A large pool of university students in life sciences and STEM-related programs\* in Québec



More than **50,000**  
university students (80% in Greater Montréal)



More than **16,000**  
graduates (80% in Greater Montréal)



More than **CA\$1 billion**  
in funding yearly  
dedicated to university  
research



# A pool of highly qualified workers

## Life sciences and STEM-related occupations in Greater Montréal

### Employees in 2020

Life sciences professionals (including chemists, chemical engineers and biologists, etc.)	12,800
Other engineers (including Industrial, manufacturing and computer engineers)	15,900
Computer and information systems professionals	96,700
Mathematicians and statisticians	3,200
<b>Total</b>	<b>134,500</b>



# 04

## Attractive Operating Costs and Incentives



# Competitive operating costs among the 20 largest metro areas in Canada and the U.S.

**1<sup>st</sup>** clinical trials and life sciences R&D centre<sup>1</sup>

**1<sup>st</sup>** Software development centre

**2<sup>nd</sup>** bio-pharma manufacturing<sup>2</sup>

**2<sup>nd</sup>** medical devices manufacturing plant

Source: fDi Benchmark, 2020.

1: Research, discovery, design, development or testing of biotechnology or pharmaceutical related products and/or medical devices.

2: Companies in this industry develop and manufacture therapeutic products and in vitro diagnostics using biotechnology.





# Québec offers corporations an attractive tax treatment

## Comparison of effective corporate tax rate (%) Selected Canadian provinces and U.S. States, 2021

Québec (Montréal)	26.50%
Ontario	26.50%
Massachusetts	27.32%
California	27.98%
New Jersey	28.11%
Illinois	28.51%
New York	34.64%





# Advantageous salaries for medtech companies

## Median annual salaries\* (US\$) for ten typical occupations in **medtech**

	Montréal	Toronto	Raleigh	Dallas	Minneapolis	San Diego	Boston	San Francisco
Quality Assurance Specialist	\$53,226	\$56,865	\$64,008	\$66,835	\$69,898	\$70,235	\$76,867	\$81,966
Clinical Liaison	\$54,887	\$58,662	\$63,651	\$68,292	\$69,685	\$72,026	\$74,789	\$83,097
Project Management Specialist	\$55,615	\$59,646	\$63,363	\$67,690	\$67,293	\$69,523	\$76,853	\$82,299
Regulatory Affairs Specialist	\$62,505	\$66,982	\$73,888	\$78,783	\$77,122	\$80,116	\$88,644	\$94,956
Manufacturing Engineer	\$68,290	\$72,564	\$83,694	\$91,962	\$88,976	\$93,911	\$97,815	\$104,287
Field Service Manager	\$72,362	\$76,404	\$91,794	\$96,812	\$96,483	\$99,235	\$108,584	\$118,101
Mechanical Engineer	\$76,023	\$80,536	\$95,517	\$104,745	\$100,393	\$106,178	\$110,255	\$118,086
Project Leader	\$78,257	\$83,523	\$102,382	\$108,053	\$105,484	\$110,388	\$118,172	\$128,516
Software Developer	\$77,046	\$81,550	\$99,087	\$104,234	\$100,897	\$106,539	\$111,951	\$125,225
Production Manager	\$83,956	\$89,461	\$105,907	\$113,545	\$109,576	\$113,695	\$122,580	\$133,606

\* Base salaries based on 5 years of experience, Medical Device Manufacturing (NAICS 3391).

Currency exchange based on the monthly average of May 2021: US\$1.00 = CA\$1.2126.

Source: Economic Research Institute Inc., June 2021.

# Various incentives tailored to your project



- ▶ Strategic Innovation Fund
- ▶ Canada Economic Development for Québec regions
- ▶ Tax credit on SR&ED
- ▶ Mitacs Acceleration program for talent
- ▶ Support for technology innovation



- ▶ ESSOR Fund for Major Projects
- ▶ Tax credits for Large Investment Project
- ▶ Refundable Tax credit on R&D
- ▶ Tax Credit for Investments and Innovations (C3i)
- ▶ Deduction for the Commercialization of Innovations (IDCI)
- ▶ Financial assistance for job creation and training
- ▶ Tax holiday for foreign experts and researchers



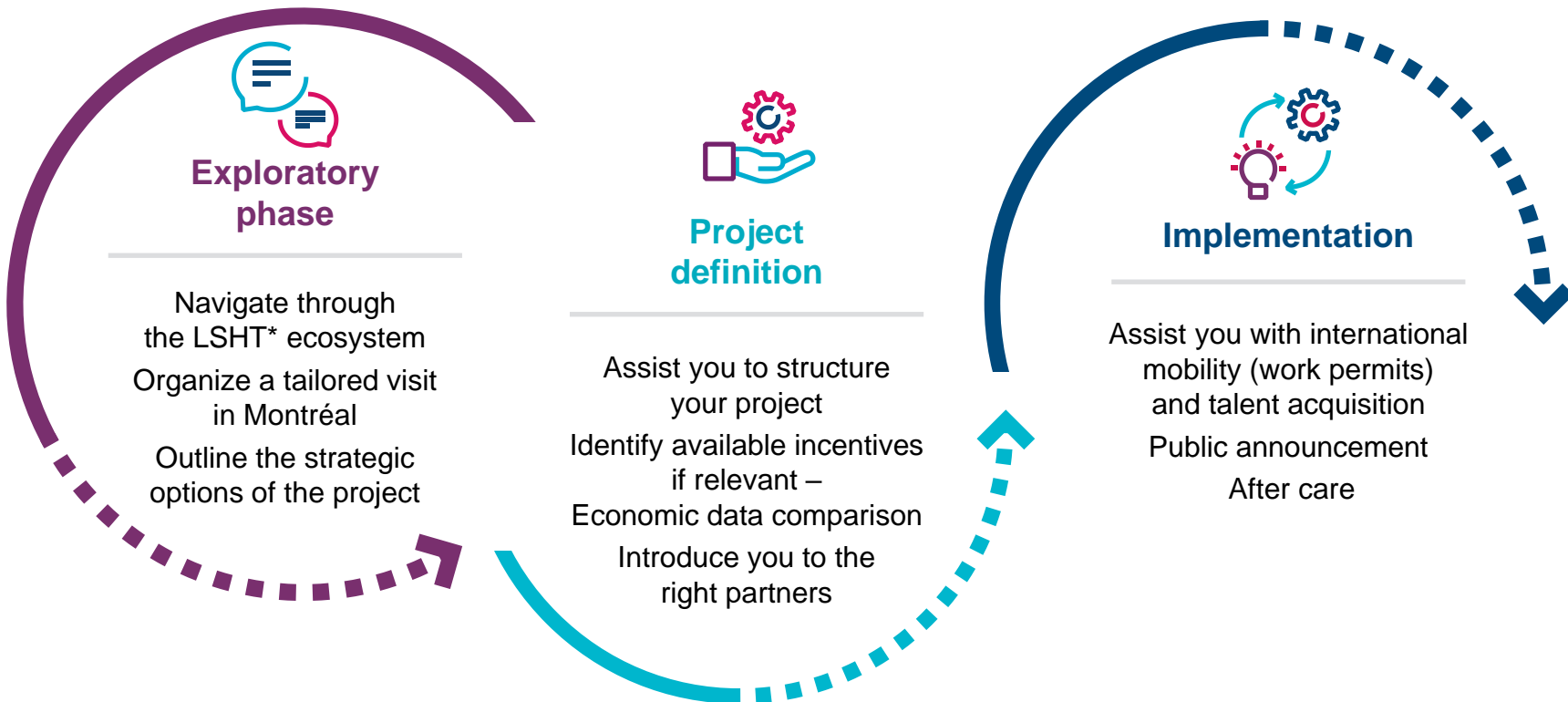
Sustainable development programs are also available at the municipal level

# 05

## Montréal International's Personalized, Free and Confidential Services



# Your development in Montréal: Montréal International can assist you through the whole process







## Contact us



Montréal  
International

**Montréal International**  
380 Saint-Antoine Street West  
Suite 8000  
Montréal, Québec H2Y 3X7

**t** +1 514-987-8191  
[www.montrealinternational.com](http://www.montrealinternational.com)

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