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What is the Winning Formula?

The Toronto region's life sciences sector has a long-standing legacy of global medical impact. From the discovery of insulin and stem cells to the invention of the first cardiac pacemaker, our researchers have consistently advanced the frontiers of medical science. Yet, we often fail to bear the fruit of those innovations here at home. Though invented here in Toronto, they are commercialized elsewhere, limiting our ability to fully capture their economic value.

Efforts to scale the sector have so far been hindered by a fragmented approach, with investments falling short of the magnitude required to develop a world-class ecosystem. To compete with intent and succeed, we must think and act differently. Meaningful progress requires coordinated action that addresses long-standing barriers across four strategic pillars: capital, infrastructure, talent, and a fast path to market access.

This action plan is a call for ecosystem players and policymakers to acknowledge that incremental fixes, while well-intentioned, will not move the needle. **Our economic future hinges on decisive steps to mobilize and unlock capital, accelerate critical infrastructure projects, strengthen talent pipelines and streamline access to the Canadian healthcare system. That's the Winning Formula.**

The Winning Formula embodies two central ideas:

1. Each of the four pillars reinforces the others; there is no silver bullet.
2. To rise to the top, Toronto's life science ecosystem requires bold and decisive action.

A company without capital can't lease space or hire top talent. Without space, it can't validate research or advance clinical trials. Without the right talent and viable path to market, it can't raise capital or scale operations. When the conditions are not in place, companies leave—taking with them jobs, intellectual property, and the broader benefits of building global champions.

This needs to change. What comes next will depend on reimagining how we grow, retain, and attract the next generation of life sciences companies in Toronto.



About this playbook series

The 'Winning Formula' series offers an action plan for the Toronto region's life sciences sector, supported with four in-depth playbooks that identify the critical barriers holding the sector back.

The Toronto Region Board of Trade ('the Board') has long recognized the life sciences sector as a critical economic engine for the region. For over a decade, the Board has demonstrated thought leadership in this space, championing the sector's potential through events, reports, and rallying support across government, industry, and academia. This work is deeply aligned with the Board's broader mission to build a globally competitive, resilient economy anchored in innovation and inclusive growth.

Toronto-Waterloo Corridor Definition

Throughout the series, the area described as the Toronto-Waterloo corridor or 'the region' refers, unless otherwise specified, to the Toronto Census Metropolitan Area (CMA), Oshawa CMA, Kitchener-Cambridge-Waterloo CMA, Hamilton CMA, and Guelph CMA. Together, these areas encompass a functionally integrated, urban economic region that

the Board defines as the Innovation Corridor.

In cases where data collection and comparison are not possible for the region, smaller geographic units will be used, including the Greater Toronto Area and/or the City of Toronto.

Stakeholders Consulted

Insights in this report are informed by extensive engagement with stakeholders across the Toronto-Waterloo life sciences ecosystem, including multinational corporations, home-grown companies, post-secondary institutions, and industry associations. Contributions took various forms: some stakeholders offered direct input through individual consultations, while others shared their experience as speakers and panelists at the Board's latest life sciences events, including the following:

- **Life Sciences Symposium:**
[Can Toronto be the Next Boston?](#)
- **Life Sciences Breakfast Series:**
[Medical Isotopes Revolution](#); [Attracting Capital Investment and Anchor Companies](#); and [Toronto's Regenerative Medicine Frontier](#)

The authors are grateful for the invaluable insights, inputs, and resources shared by a wide variety of stakeholders, including:

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adMare Academy

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MaRS Discovery District

Magdalena Mahlstedt
Canadian Alliance for Skills
& Training in Life Sciences

Mary Argent-Katwala
Ontario Bioscience Innovation
Organization (OBIO)

Maura Campbell
Ontario Bioscience Innovation
Organization (OBIO)

Matthew Bureau
Roche Canada

Marzieh Zare
Dreeven Technologies

Michael R. Jones
Ontario Centre of Innovation

Neelam Bance
MedGeneus Inc.

Orchid Jahanshahi
Thinkrbelle

Parimal Nathwani
Toronto Innovation Acceleration
Partners (TIAP)

Piru Perampalam
Copoly.ai

Raquel De Souza
SpinUp

Rob Henderson
Biotalent Canada

Scott McAuley
Paradigm Capital

Sigrun Watson
Canadian Entrepreneurs in Life
Science

Simona Chiose
University of Toronto

Action plan and four playbooks to transform the life sciences sector

For too long, efforts to bolster the life sciences sector have been cautious and piecemeal—falling short in the scale and coordination required to build a world-leading life sciences ecosystem here in Toronto. This action plan lays out a path forward, recognizing that meaningful progress demands bold and simultaneous movement across four key pillars: capital, infrastructure, talent, and a fast path to market.

Building on this action plan, we developed four complementary playbooks that dive deeper into how each proposed action can address the sector's major challenges:



PLAYBOOK 1

Unlocking Capital

Life sciences companies in Ontario face barriers raising capital. Companies argue that the challenges boil down to a low risk tolerance amongst Canadian investors for the life sciences sector, given uncertainties with clinical trials and long product development cycles. Conversely, investors active in the sector often note that the challenge lies less in the availability of capital than in the state of readiness of companies for investment.

In the absence of opportunities to raise capital, firms increasingly look abroad for funding, taking with them the economic benefits of high-growth, high-potential companies (job creation, intellectual property, and export development capabilities).

To unlock the capital needed for a growing sector, we must do three things:

1. Strengthen the domestic investment ecosystem
2. Develop growth-focused programs to accelerate startups' development journey
3. De-risk investments through government incentives



PLAYBOOK 2

Accelerating Wet Lab Construction

Ontario's life sciences sector faces a critical shortage of wet lab space, meeting only 52% of the estimated two million sq. ft. demand causing innovative companies to stall growth or relocate. Wet lab facilities, essential for biotech and pharmaceutical research, cost up to five times more than standard office spaces, and developers typically require 60% pre-leasing with long-term commitments, an unrealistic ask for most startups.

To accelerate wet lab construction, we must do five things:

1. Increase construction incentives
2. Provide rental guarantees
3. Establish public-private partnerships
4. Expedite permitting and adjust land use policies
5. Better connect demand with supply



PLAYBOOK 3

Strengthening Talent Pipelines

Ontario's life sciences sector faces critical workforce gaps, including a shortage of C-suite executives, experienced market-ready scientists, and bio-manufacturing workers, with only 25% of bio-manufacturing positions projected to be filled in the next five years. Despite a 36% increase in life sciences graduates from 2017 to 2022, the region struggles to retain talent due to lower average wages and fewer job opportunities compared to key competitors such as Boston and San Francisco.

To close the talent gap, we must do three things:

1. Leverage short-term executive expertise and advisory
2. Expand support for talent development and retention programs
3. Encourage entrepreneurship



PLAYBOOK 4

Streamlining the path to market

Accessing the Canadian life sciences market is challenging for life sciences companies given its fragmented regulatory, reimbursement, and procurement frameworks. While regulatory and reimbursement systems are complex to navigate, procurement policies focus on cost savings rather than value-added through innovation. For pharmaceuticals, this results in an average timeline of 2.5 years from global authorization to public reimbursement, compared to just eight months in the United States. For medical devices and other medical products, it means fewer opportunities to be commercialized, deterring the adoption of innovative technologies in the healthcare system.

To accelerate companies' paths to market, we must do four things:

1. Adopt international standards
2. Ensure transparency on pricing practices
3. Harmonize reimbursement processes
4. Adopt a value-based approach to procurement

Meaningful progress demands bold and simultaneous action across four key pillars: capital, infrastructure, talent and a fast path to market.

Top priorities checklist

Putting The Winning Formula into practice

Government of Canada

- ☐ Double investment under the Venture Capital Catalyst Initiative co-investment model
- ☐ Strengthen Canada's Industrial Research Assistance Program (IRAP) by focusing on commercialization projects
- ☐ Prioritize domestic life sciences projects for funding in Canada's Strategic Innovation Fund
- ☐ Expand support under Canada's Biomedical Research fund
- ☐ Offer a preferential tax treatment for Intellectual Property (IP) royalties
- ☐ Introduce capital gain exceptions for investors in early-stage life science companies
- ☐ Strengthen the federal Scientific Research and Experimental Development (SR&ED) credit by expanding expenditure limits, easing phaseout thresholds, and including public corporations
- ☐ Provide grants for life sciences infrastructure embedded in post-secondary institutions
- ☐ Canada Infrastructure Bank (CIB) should establish public-private partnerships with real estate developers to fast-track wet lab development projects
- ☐ Support the expansion of Elevate – CASTL's national biomanufacturing skills and training program – to Ontario
- ☐ Align Health Canada's regulatory standards with those of the Food and Drug Administration (FDA) and European Medicines Agency (EMA) standards
- ☐ Implement an agile, non-mandatory review process for internationally approved products

Municipalities

- ☐ Review and amend zoning laws and land use policies to allow wet labs in mixed-use innovation districts

Government of Ontario

- ☐ Increase Venture Ontario Fund's life sciences allocations by 55 percent annually to reach its goal of reaching \$725 million by 2030
- ☐ Introduce a tax credit for angel investors and venture capitalists investing in R&D and intensive life sciences companies
- ☐ Offer a R&D tax relief for capital investments in research facilities and laboratory equipment
- ☐ Increase the Ontario Wet Lab Program's conditional grants from 33% to up to 50%
- ☐ Create a rental guarantee program for pre-revenue companies to secure wet lab space
- ☐ Fund fellowships and exchanges to place entrepreneurs in leading life sciences hubs
- ☐ Provide financial aid to help high-potential firms hire key executives
- ☐ Offer a retention incentive to retain new professionals
- ☐ Introduce a streamlined medical devices certification pathway
- ☐ Launch a province-wide directory of approved local technologies
- ☐ Develop a one-stop procurement concierge program

Ecosystem partners

- ☐ Develop a centralized catalogue platform to provide easy access for all funding options available
- ☐ Consolidate and share data on demand and availability for wet lab space
- ☐ Build a network of life sciences executives for fractional or short-term advisory roles
- ☐ Implement matching programs to connect fractional executives with startups
- ☐ Launch a "Bench to Business" fellowship for life sciences researchers



What is life sciences?

The life sciences sector consists of multiple subsectors spanning research and development, manufacturing, and distribution across various fields. These include pharmaceuticals, biotechnology-based foods and medicines, medical devices, biomedical technologies, nutraceuticals, food processing, and other products that improve healthcare, agriculture practices, and sustainability. Life sciences can be broadly categorized into four primary subsectors:

- **Drugs & Pharmaceuticals**
Pharmaceutical companies discover, develop, produce, and/or distribute drugs.
- **Medical Devices & Equipment**
A medical device company develops and produces technologies that support the prevention, diagnosis, and treatment of diseases.
- **Scientific Research & Development (R&D)**
These companies conduct R&D activities (e.g., clinical trials, drug development) and diagnostic testing to support healthcare, biotechnology, and pharmaceuticals discovery and production.
- **Biosciences**
Bioscience companies use renewable biological resources to produce products, services, and energy. They integrate biotechnology, forestry, and bio-based manufacturing to drive innovation in areas such as healthcare, agriculture, environmental protection, and industrial processes.

Areas of high growth potential in life sciences include (but are not limited to):

- **Health data analytics**
A health data company collects, manages, and analyzes healthcare-related data from sources like electronic health records, wearables, and clinical trials.
- **Regenerative medicine**
Regenerative medicine focuses on developing and applying new treatments to heal and restore functions lost due to aging or medical conditions. Efforts in this industry span stem cell research, applications, and tissue engineering.
- **Generative AI (GenAI)**
Gen AI relies on deep-learning algorithms to create new content from unstructured, complex datasets, improve diagnostics and decision-making, and streamline healthcare operations.
- **Precision medicine**
Precision or personalized medicine technologies allow doctors to offer more targeted and effective medical treatments, leading to better patient outcomes.
- **Medical isotopes**
Medical isotopes are radioactive atoms used in various diagnostic and therapeutic medical procedures, particularly in oncology, cardiology, and neurology.
- **Genome editing**
Genome or gene editing is a type of engineering in which DNA is inserted, deleted, modified or replaced to facilitate the development of targeted therapeutic solutions.

Note: the working definition of the life sciences sector for the purposes of this report excludes the broader health sector and general healthcare delivery systems.



Realizing the economic power of life sciences

Ontario is Canada's life sciences powerhouse—home to 3,500 firms driving \$15 billion in GDP and 88,000 jobs with \$10 billion in compensation. In 2023, Ontario's life sciences sector generated an estimated \$86 billion in revenue and exported \$13 billion in cutting-edge innovations worldwide.¹

Ontario has strong research capabilities anchored by top-tier institutions and exceptional talent with the ability to present solutions to the most pressing healthcare challenges on a remarkable scale. Such competitive advantage has attracted substantial investment from multinational companies, leading to the highest density of foreign players and life sciences activity in Canada. Since 2018, Ontario has attracted over [\\$6 billion in investments](#) from leading life sciences companies and global

biomanufacturers. Moreover, [69 percent](#) of Canada's clinical trials are conducted in Ontario, many led by the top ten largest pharmaceutical companies in the world in several therapeutic areas.

In recent years, the federal and provincial governments have introduced investment plans to support Canada and Ontario's life sciences sector. At the federal level, the 2021 [Canada's Biomanufacturing and Life Sciences Strategy](#) introduced a \$2.2 billion commitment over seven years to rebuild and strengthen vaccine and therapeutic production, cutting-edge research, and attract talent. In addition, the Innovation, Science and Economic Development (ISED) [Strategic Innovation Fund](#) has further supported 29 transformative life sciences projects, totalling \$1.7 billion in investment across the country.

1. TRBOT Calculations. [See Appendix for more details.](#)

The Ontario government has demonstrated a unique commitment to addressing the challenges faced by the life sciences sector. In 2022, the province launched its sector-specific strategy, *Taking Life Sciences to the Next Level—Phase 1*, with a focus on four strategic priorities: expanding Ontario’s biomanufacturing footprint through foreign direct investment, strengthening domestic resilience in personal protective equipment (PPE) and critical medical supplies, enhancing commercialization capacity, and driving the adoption of Ontario-made innovations in healthcare. *Phase 1* launched the \$15 million Life Sciences Innovation Fund (LSIF) to help entrepreneurs advance their ideas from the lab to the marketplace.

Building on Phase 1, the provincial government introduced the *Driving Growth in Life Sciences and Biomanufacturing: Ontario’s Strategy—Phase 2* in October 2024, unveiling *new initiatives* to advance R&D, unlock additional streams of capital, and foster a culture of innovation across the sector. The province is putting \$46 million into an infrastructure fund to boost research capacity at post-secondary schools and hospitals, \$5 million to speed up clinical trials, and \$40 million in venture capital funds. More recently, the province announced the *Ontario Wet Lab Program*, an initiative to support the rapid construction and fit-out of new wet lab space with conditional grants of up to 33% of the total eligible project cost to a maximum of \$5 million.

Ontario Government Life Sciences Commitments:

Initiative	
Life Sciences Scale-Up Fund (LSSUF)	\$24 million
Ontario Biosciences Research Infrastructure Fund	\$46 million
Clinical Trials Acceleration	\$5 million
Venture Ontario fund	\$40 million
Ontario Wet Lab Program	Up to 33% grants

Government efforts have already been translated into a wave of transformative investments by leading global firms and domestic firms. Some of the most impactful projects include:

- **Expansion of a medical isotopes production plant in Etobicoke.** In January 2025, Kinectrics Inc. made a \$22 million commitment to enhance the production of medical isotopes and meet the growing demand for these critical components for cancer treatments.
- **Roche’s expansion in Mississauga.** In November 2024, Roche Canada announced an investment of \$130 million over five years to support 250 new jobs in AI, machine learning, computational biology, and data analytics.
- **A new biomanufacturing facility in Hamilton.** In October 2024, OmniaBio announced the opening of a cell and gene therapy (CGT) manufacturing and artificial intelligence (AI) centre of excellence, which is now Canada’s largest contract development and manufacturing organization (CDMO) facility dedicated to CGT.
- **Launch of Canada’s largest vaccine manufacturing facility in Toronto.** In May 2024, Sanofi opened a new state-of-the-art facility to produce pediatric and adult vaccines for pertussis (whooping cough), diphtheria, and tetanus.
- **AstraZeneca expansion projects in Mississauga.** In February 2023, AstraZeneca committed to expand its research and development facilities and the company’s newest rare disease development hub: Alexion.
- **Expansion of AtomVie Global Radiopharma’s facility in Hamilton.** In March 2023, AtomVie Global Radiopharma announced the opening of a new facility dedicated for high volume clinical and commercial GMP manufacturing and worldwide distribution of radiotherapeutics, an innovative, high-growth class of drugs for the treatment of cancer patients.
- **Moderna’s expansion in Cambridge.** In May 2023, Moderna Inc. in partnership with Novocol Pharma committed to a multi-million-dollar investment to expand its vaccine manufacturing capacity of respiratory mRNA vaccines.

Economic impact of the life sciences sector



**\$15
billion**
in GDP



3,503
firms



88,632
employees



**\$13
billion**
in exports



**\$86.1
billion**
in revenue



**\$10
billion**
in compensation

Despite such remarkable activity, Ontario continues to lag behind other regions in turning innovations into market-ready products. Domestic companies face considerable challenges, such as limited access to capital, lack of space, talent shortages, and regulatory burdens. As a result, many organizations seek the resources they need elsewhere. The departure of companies has a detrimental effect on the local ecosystem, leading to significant losses in intellectual property and missed opportunities for commercialization.² This trend also reduces the potential for future investments from multinational corporations, limiting their capacity to effectively engage with the local market as fully as they might otherwise consider.

It is hardly surprising when a promising firm leaves Toronto for funding in California or Massachusetts. These two states have mature ecosystems with the financial backing and commercialization pathways for spinning out cutting-edge firms built upon the world-class research undertaken at their research universities, and the results speak for themselves.

California's life sciences sector supports over 335,000 direct jobs across more than 13,000 companies. Massachusetts has seen remarkable growth in the last few years, with its biopharma industry adding 36,936 jobs from 2019 to 2023 and achieving a year-over-year R&D growth rate of 3.67 percent—the highest in the United States.

The global life sciences sector is projected to grow rapidly, fueled by accelerating demand for healthcare innovation and unparalleled capacity to create high-value jobs and transformative companies. Ontario, and specifically the Toronto-Waterloo corridor, is well-positioned to capitalize on emerging opportunities within this sector.

However, addressing current challenges is essential to ensuring that this potential is fully realized. Developing a globally competitive life sciences sector requires comprehensive efforts that support firms at every stage of their growth. This involves strong collaboration among industry leaders, government agencies, and academic institutions to strengthen an ecosystem that both attracts foreign companies and fosters the development of homegrown firms.

2. [Ontario 360](#). How to boost Ontario's life sciences IP to help patients and the economy.

Toronto-Waterloo corridor's competitive advantage



Home to Canada's #1 Life Sciences research hub

powering life-changing healthcare discoveries through partnerships and collaboration.

The Toronto Academic Health Science Network (TAHSN).

Home to top ranked hospitals in the world.

SickKids

Sunnybrook
HEALTH SCIENCES CENTRE

UHN
Toronto General
Toronto Western
Princess Margaret
Toronto Rehab
McMaster Institute

Ontario ranks 1st in Active Clinical Trials

per capita among all G7 nations.

Global leader in medical isotopes production, regenerative medicine discoveries and AI health analytics.

Robust pipeline of graduates in engineering, physical and biological sciences, mathematics and AI.

Home to **Canada's highest concentration of AI startups and talent.**

Toronto is home to **11 globally recognized universities.**



UNIVERSITY OF
TORONTO



UNIVERSITY OF
WATERLOO

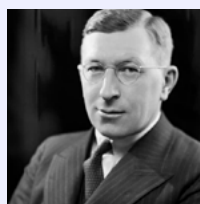


Ontario ranks among the top clusters in North America, by number of establishments.

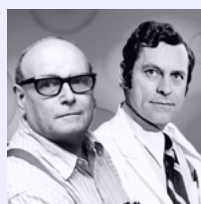
Top incubators and accelerators advancing AI-driven and cutting-edge solutions for healthcare.



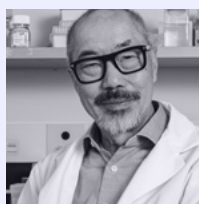
Leading researchers and scientists who have played a pivotal role in insulin discovery, stem cell therapies and advances in cancer research, AI, osteoarthritis, and surgery innovation.



Dr. Frederick
Banting



Dr. James Till
Dr. Ernest McCulloch



Dr. Tak Mak



Dr. Geoffrey
Hinton



Dr. Paul
Santerre



Dr. Shaf
Keshavjee

Significant footprint of multinationals



Vast number of domestic companies pushing the boundaries of medical science



An impressive network of Institutions supporting our companies to grow



Please note that the examples provided do not reflect an exhaustive list of ecosystem players in the region. For more information on Toronto's competitive advantage in life sciences, see the [2023 Toronto Academic Health Science Network's report](#) by Shift Health and the University of Toronto.



Major barriers

Why aren't we enabling Toronto-based startups to transform into the next generation of life sciences giants, anchored and thriving within our region? Why are the groundbreaking discoveries emerging from our research institutions not being translated into globally recognized, made-in-Canada products? What structural challenges prevent our innovative startups from scaling into globally competitive firms?

These are questions that lie at the core of *The Winning Formula*. The Toronto-Waterloo corridor ('the region') has the foundational strengths to lead in the global life sciences sector: world-class talent, cutting-edge health institutions, and a vibrant pipeline of promising early-stage companies. With the global life sciences market projected to grow rapidly, the region could stand at the forefront of this economic opportunity. However, persistent barriers continue to restrict the sector's growth.

Regions worldwide are leveraging their advantages proactively to solidify their leadership on the global stage. By building ecosystems rooted in collaboration between academia, government, and industry, many of our competitors have already established strong foundations for impact.

They recognize that success hinges on the seamless integration of capital pools, talent, and infrastructure to transform research into market-ready solutions. Achieving this requires more than resources existing in silos. It demands synergy through robust networks for knowledge sharing, streamlined regulatory processes, and sustained public-private partnerships. We could be doing the same by taking bold steps to align our efforts and ensuring that we not only keep pace but set the standard for the next wave of life sciences innovation.



Constrained access to capital

Canada's capital market is risk-averse, with little coordination between capital providers to support startups through critical growth stages. While investors are willing to invest, many domestic companies have not yet reached the maturity level needed to attract significant capital. As a result, startups face an ecosystem with unclear funding priorities and a lack of long-term strategic investment. With much of the later-stage funding coming from foreign sources, the economic benefits of successful exits—such as job creation, intellectual property (IP) retention, and trade—often occur outside of Canada. When companies leave in search of better capital markets, the regional economy loses out.

Why is it a challenge?

- Canadian investors tend to focus on businesses with proven revenue models and shorter timeframes to exit the public market. Risk aversion leads to more investment in generalist funds rather than specializing in particular sectors.
- Government funding allocation has often resulted in fragmented and ad-hoc programs operating independently and lacking a unified strategy at all levels.
- Canadian institutional investors and Corporate Venture Capital (CVC) firms tend to prioritize opportunities abroad over domestic investments.
- There is a small pool of high-valuation Canadian companies in domestic public markets, reflecting a less mature ecosystem, reducing exit opportunities and scale up potential —key factors that can deter investor confidence and capital flow.



Insufficient wet lab infrastructure

A thriving life sciences ecosystem depends on robust infrastructure that fuels R&D and growth at every stage. Wet labs, specialized spaces built for hands-on experimentation, are a critical piece that enables innovators to develop and test breakthrough medical products.

Ontario's life sciences sector faces a severe shortage of wet lab space. According to the Ontario Wet Lab Coalition, the demand for wet lab space was estimated to be roughly two million sq. ft. in 2023. When evaluating the supply, it becomes clear that the availability falls short of meeting such demand. Despite several projects in the development and delivery pipeline, the Toronto region will only meet 52% of the total estimated demand for wet labs by the end of 2025.

The short supply of wet lab space introduces a critical bottleneck for growth. Not only does it restrict the development of scaling companies, but it also deters real estate investment for developing this type of infrastructure. If the demand-supply imbalance of wet lab space persists, the region risks losing its next generation of life sciences companies to competing jurisdictions, where space is more readily accessible.

Conservative estimates suggest that meeting Ontario's demand for wet lab space, without accounting for an increase in demand, requires delivering 191,200 sq. ft. of new wet lab space each year over the next five years to close the infrastructure gap by 2030.

Why is it a challenge?

- Ontario's life sciences sector is caught in a paradox. Developers need proven demand to advance new builds. Yet, that very demand is slipping away as companies are increasingly forced to leave. The result is a misleading narrative that demand does not exist, when in fact, it is being lost to other markets.
- Wet lab construction or conversion is significantly more expensive than standard office space. To de-risk investments, developers require anchor tenants with strong financial covenants and seek pre-lease commitments that many companies are unable to meet.
- Despite being active in deals abroad, Canadian pension funds have limited engagement in the domestic life sciences real estate market. The perceived risk-return profile of Canadian infrastructure investments has not always been competitive with alternatives available globally.



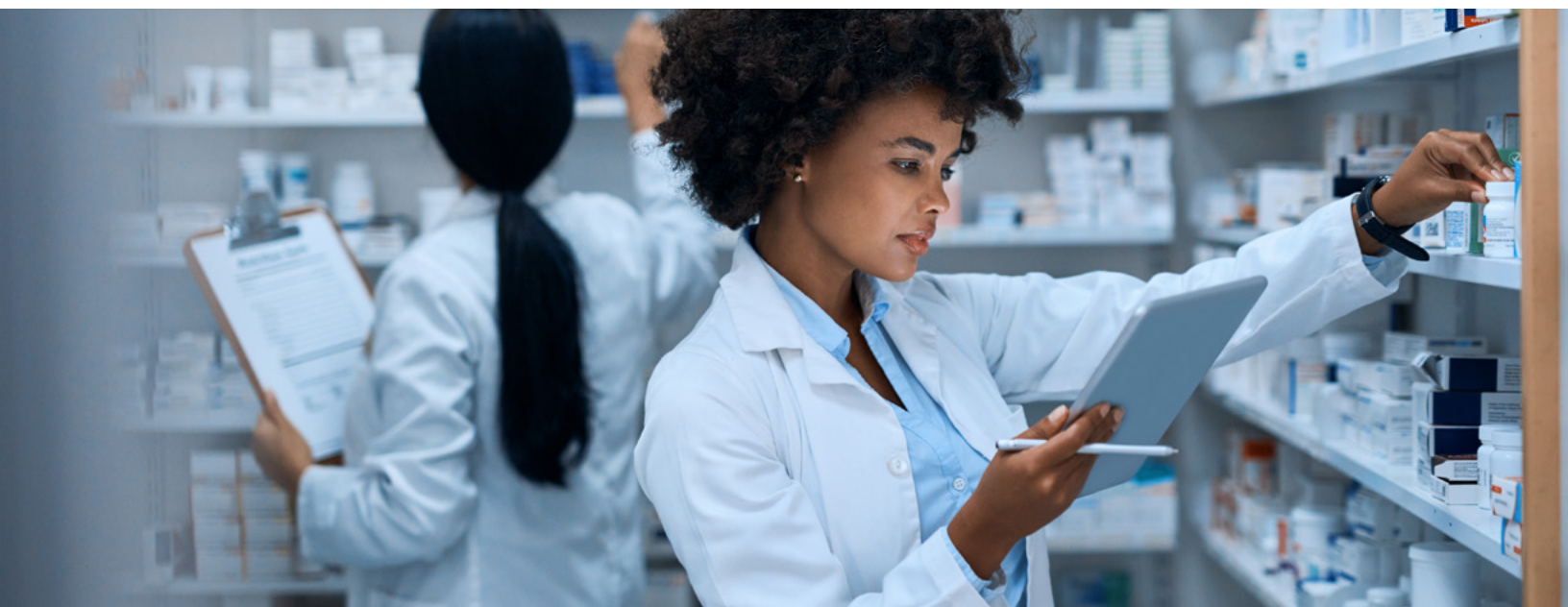
Experienced talent gaps

While Ontario boasts an exceptional supply of entry-level life sciences talent, there is a critical gap across three categories of experienced talent: C-suite executives, market-ready scientists, and bio-manufacturing workers.

Talent is the cornerstone of any thriving ecosystem. Skilled professionals draw in both venture capital and operational support, providing the financial backbone and experience needed for business development. Executives and professionals ready to respond to industry demands are much needed to guide emerging businesses, where insights from past successes and failures propel new ventures forward.

Why is it a challenge?

- Toronto offers lower salaries and has fewer large-scale firms than other jurisdictions. As a result, domestic companies find it difficult to recruit talent as many find more attractive compensation packages and a broader range of employment opportunities in dominant centres of life sciences activity.
- Although an increased number of science graduates are moving into industry roles, [academia is still their dominant career path](#). University professors and lecturers are the top occupations for many life sciences doctoral graduates, including biological science (33.3%), physiology (34.8%), biochemistry and molecular biology (28%), medical engineering (26.8%), and pharmacology (21.8%).



Fragmented regulatory, reimbursement and procurement frameworks

The timelines and multiple layers of life sciences product regulation result in delays and uncertainty for companies entering the Canadian market. Reimbursement and procurement pathways are slow, meaning companies must navigate individual negotiations with several institutions, many with their own compliance requirements.

Canada's regulatory environment is among the slowest in the OECD for bringing new drugs to market. This lag not only delays patient access to potentially life-saving treatments but also discourages global companies from prioritizing Canada as a destination for launching innovative therapies. The prolonged timelines for market entry (To illustrate, [pharmaceuticals market entry](#) takes on average 2.5 years in Canada versus only 8 months in the U.S.) presents a major barrier for a thriving pharmaceutical industry.

Medical device companies encounter limited opportunities to test new products and secure early adopters within the Canadian healthcare system. This lack of access to real-world testing environments doesn't allow companies to refine and validate their innovations, nor to secure business opportunities.

Why is it a challenge?

- Drug regulatory and reimbursement processes are inefficient, lack transparency, and often duplicate each other.
- The cost-centric focus of procurement evaluations prioritizes short-term financial savings over long-term value for patients.
- Medical device procurement policies hinder the adoption of new technologies within the healthcare sector. First, the prolonged timelines inherent in public procurement impose significant financial and operational burdens on companies. Second, companies encounter a lack of structured pathways for scaling and commercializing their innovations; once a product is purchased under a specific contract, the opportunity ends there.

What's at stake?

If the barriers and challenges in the life sciences sector go unresolved, the region risks major economic, social, and innovation setbacks, including:

Outflow of intellectual property, talent, and investment

Companies unable to access sufficient capital, infrastructure, or talent locally will relocate to more accessible and supportive jurisdictions, taking their groundbreaking research, skilled employees, and economic contributions with them. In many instances, much of the domestic private and government capital invested in local companies is not fully translating into local IP ownership and job creation.

Promising made-in-Canada discoveries commercialized elsewhere

Without the means to scale locally, discoveries originating from Toronto's world-class research institutions will be commercialized in other countries, depriving Canadians of the financial and social benefits of domestic healthcare innovation.

Missed economic multiplier effect

The stagnation of successful companies diminishes the ecosystem's capacity to reinvest in startups, talent development, and infrastructure.

Inability to create high-paying jobs

The life sciences sector's capacity to generate high-value employment will be stifled, reducing the opportunities for skilled professionals and undermining the region's economic competitiveness.

Brain drain

The region's inability to provide competitive salaries, and job mobility opportunities will drive talent, especially highly skilled professionals, to seek opportunities in regions like Boston and the San Francisco Bay Area.

Delayed access to life-saving treatments

Regulatory inefficiencies and slow commercialization mean Canadians may wait longer for cutting-edge therapies that could already be available in other markets.



The Winning Formula Puzzle

The life sciences sector stands at a crossroads: either address these longstanding challenges head-on or risk losing ground to more agile global competitors. The conditions are in place for transformative growth but unlocking them requires recognizing the need for change is just as important as seizing the opportunities ahead. Success will depend on decisive action, collaboration, and commitment in the following **four high-impact areas**:



Please refer to the following pages for additional information on each action item.

The Winning Formula Action Plan outlines the actions needed to support Canadian life sciences companies by fostering innovation, enhancing investment opportunities, and accelerating the journey from research to commercialization.

By advocating for targeted government incentives and strengthening venture capital ecosystems, the plan aims to accelerate growth, mitigate investment risks, and provide critical infrastructure. It emphasizes rapid development of wet lab facilities through financial incentives, streamlined approval processes, and strategic partnerships, while also addressing critical talent gaps by leveraging executive expertise, enhancing retention programs, and encouraging entrepreneurial initiatives. Lastly, harmonizing regulatory and procurement frameworks can further support domestic companies by accelerating the path to the Canadian market, positioning them to succeed and compete globally.

Three actions to unlock capital

ACTION 1

Strengthen the domestic investment ecosystem

- The federal government should double funding under the Venture Capital Catalyst Initiative (VCCI) co-investment model—from \$50 million to \$100 million—to continue supporting life sciences companies with strong growth potential and healthcare market demand.
- The provincial government should increase allocations to the Venture Ontario Fund support for life sciences by 55% annually—adding \$130 million per year—to meet its \$725M VC investment goal by 2030.
- An industry association should create an Ontario Funding Hub as a centralized platform designed to catalogue and streamline access to all available funding options.

ACTION 2

Develop growth-focused programs to accelerate startups' development journey

- The federal government should strengthen Canada's Industrial Research Assistance Program (IRAP) by increasing the focus on commercialization in addition to R&D.
- The federal government should prioritize domestic life sciences projects for federal funding through Canada's Strategic Innovation Fund and expand support under Canada's Biomedical Research Fund for projects with a direct adoption pathway into the Canadian healthcare system.
- The federal government should introduce a preferential federal tax treatment for Intellectual Property (IP) royalties in proportion to the investment made in developing life sciences patents.

ACTION 3

De-risk investments through government incentives

- The federal government should introduce partial or full capital gains exceptions for investors in early-stage life sciences companies.
- The federal government should strengthen the Federal Scientific Research and Experimental Development (SR&ED) credit by increasing the annual expenditure limit, adjusting taxable capital phase-out thresholds, and allowing eligible public corporations to access the tax credit.
- The provincial government should introduce an investment tax credit for angel investors and venture capital funds that invest in R&D-intensive life sciences companies.



Five actions to accelerate wet lab construction

ACTION 1

Increase construction incentives

- The federal government should offer refundable tax credits or grants to help post-secondary institutions fund life sciences infrastructure, offsetting high construction and equipment costs amid ongoing budget constraints. Examples include Massachusetts' 10% tax credit for life sciences facilities, the NIH's grants covering up to 75% of research construction costs, and Ireland's 30% R&D building tax credit.
- The provincial government should offer a R&D tax relief for businesses that make capital investments in research facilities and laboratory equipment.
- The provincial government should increase the Ontario Wet Lab Program (OWLP)'s conditional grants from the proposed 33 percent to up to 50 percent of total eligible costs.

ACTION 2

Provide rental guarantees

- The provincial government should create a rental guarantee program to support pre-revenue, scaling companies in securing leases for wet lab space.

ACTION 3

Establish public-private partnerships

- The federal government, through Canada's Infrastructure Bank (CIB), should establish a public-private partnership with real estate developers to combine public funds with private sector know-how. To incentivize developer participation and de-risk private investment, the CIB should provide low-interest, flexible financing tailored to lab infrastructure projects.

ACTION 4

Expedite the permitting process and adjust land use policies

- Ontario municipalities should review and amend zoning laws and land use policies to streamline the approval process for wet lab projects and allow life sciences labs in mixed-use innovation districts.

ACTION 5

Better connect demand with supply

- Industry associations and post-secondary institutions should work together to proactively consolidate and share data on demand and availability for wet lab space.



Three actions to close the talent gap

ACTION 1

Leverage the advantages of short-term executive expertise and advisory

- Industry associations should develop a robust network of domestic and international life sciences executives interested in fractional or short-term advisory roles.
- Industry associations should implement a structured matching program to connect fractional executives and consultants with domestic startups.
- The provincial government should fund exchanges or fellowships that embed entrepreneurs into established life sciences hubs.
- The provincial government should provide financial support to help high-potential businesses fill critical executive gaps.

ACTION 2

Expand support for talent development and retention programs

- The federal government should support an expansion of the [Elevate program](#) to Ontario.
- The provincial government should introduce a Graduate Retention Incentive to retain top life sciences talent in Ontario.

ACTION 3

Encourage entrepreneurship

- Post-secondary institutions should develop a “Bench to Business” fellowship program for life sciences post-graduates and post-doctoral researchers with promising scientific ideas.
- Universities should establish dedicated “research commercialization tracks” that students can opt into, providing structured support in market discovery, intellectual property, and pitch development, and culminating in a demo day or investment-readiness program.



Four actions to streamline the path to market

Building Canada's global competitiveness in the life sciences sector requires a comprehensive reform of its regulatory frameworks, designed to harness the country's innovation potential and strengths. A key component of this transformation involves streamlining and harmonizing regulatory processes to eliminate redundancies, expedite approval pathways, and foster a more business-friendly environment for the commercialization of cutting-edge health technologies.

ACTION 1

Adopt international standards

- Health Canada should work toward greater alignment with trusted international regulators such as the U.S. Food and Drug Administration (FDA) and the European Medicines Agency (EMA).
- Health Canada should implement a more agile, non-mandatory review process for products already approved by recognized international agencies.

ACTION 2

Ensure manufacturers have access to drug pricing evaluation criteria

- Canada's Drug Agency (CDA) and pan-Canadian Pharmaceutical Alliance (pCPA) should work toward ensuring more transparent drug pricing negotiations with manufacturers.

ACTION 3

Harmonize provincial drug reimbursement frameworks with those of national bodies

- The Ontario Committee to Evaluate Drugs (CED) should align its methodologies to avoid redundant assessments.
- The CED should adopt a mutual recognition model that accepts CDA and pCPA's clinical assessments.

ACTION 4

Adopt a value-based approach to procurement

- The provincial government should create a province-wide value-based procurement system that prioritizes health outcomes, economic value, and efficiency across all hospitals and healthcare institutions.
- The provincial government should create a Provincial Technology Certification Office to assess and certify medical devices for procurement across Ontario.
- The provincial government should create a directory of market-ready, made-in-Ontario life sciences technologies to support the adoption of local innovation.
- The provincial government should develop a one-stop procurement concierge program to allow businesses of all sizes to engage in public sector procurement.

Appendix: Ontario's life sciences sector economic impact

methodology and data sources

Life sciences definition

There is no consistent definition of what constitutes life sciences in Canada, and data related to the sector is dispersed across multiple classifications. This report captures the sector's economic potential by focusing on activities related to the discovery, manufacturing, and distribution of life sciences products—excluding areas such as healthcare delivery.

To achieve this, we used 15 six-digit North American Industry Classification System (NAICS) codes (see Figure 1) categorized into four groups that accurately represent these activities. Our selection aligns with methodologies used in previous studies of the life sciences landscape and is consistent with how the sector is defined in other countries, such as the United States.

Figure 1: North American Industry Classification System (NAICS) codes for life sciences

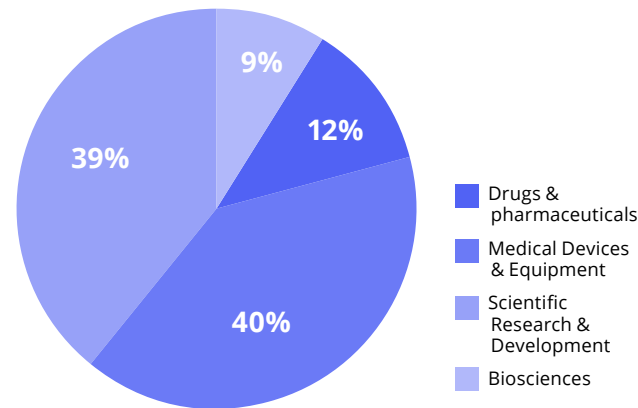
LIFE SCIENCES CATEGORY	NAICS DESCRIPTION AND CODE AT THE SIX-DIGIT LEVEL
Drugs and Pharmaceuticals	Pharmaceutical and medicine manufacturing [325410] Pharmaceuticals and pharmacy supplies merchant wholesalers [414510]
Medical Devices & Equipment	Medical equipment and supplies manufacturing [339110] Professional machinery, equipment and supplies merchant wholesalers [417930]
Scientific Research & Development	Testing laboratories [541380] Research and development in the physical, engineering and life sciences [541710]
Biosciences	Wet corn milling [311221] Oilseed processing [311224] Other basic organic chemical manufacturing [325190] Artificial and synthetic fibres and filaments manufacturing [325220] Chemical fertilizer (except potash) manufacturing [325313] Mixed fertilizer manufacturing [325314] Pesticide and other agricultural chemical manufacturing [325320] Seed merchant wholesalers [418320] Agricultural chemical and other farm supplies merchant wholesalers [418390]

Composition

Statistics Canada’s Business Counts dataset was used to identify the number of life sciences companies in Ontario and analyze the sector’s composition. As of December 2023, Ontario was home to 3,503 firms with a varying presence of companies focused on the research and discovery, manufacturing, and distribution of life sciences products (see Figure 2).

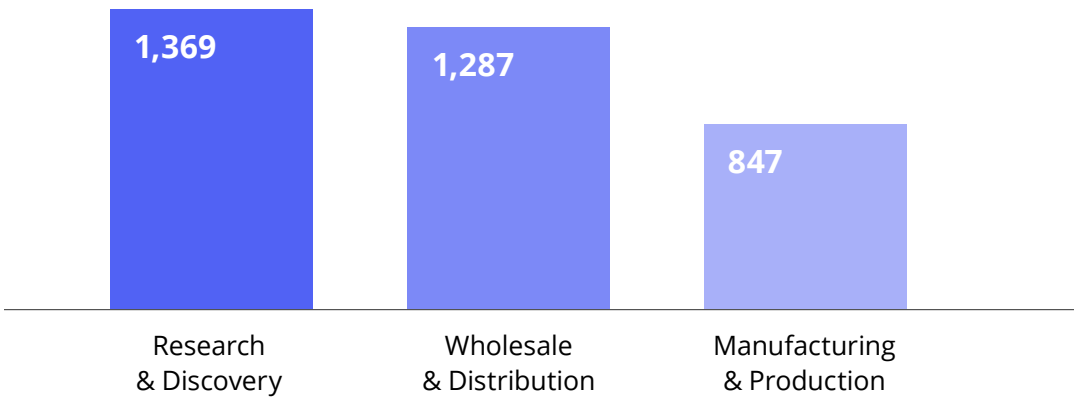
Within the sector, medical device manufacturers and distributors form the largest segment with 1,417 firms, accounting for 40% of the total. Close behind are scientific research and development firms, with 1,369 companies. Drugs and pharmaceutical manufacturers and distributors represent a smaller share, with 416 firms making up 12% of the sector. The smallest segment is biosciences companies, with 301 firms.

Figure 2: Life Sciences sector firms in Ontario by industry group



Source: TRBOT analysis. Statistics Canada. Table 33-10-0806-01 Canadian Business Counts, with employees, December 2023.

Figure 3: Life Sciences sector firms in Ontario, by type of business activity



Source: TRBOT analysis. Statistics Canada. Table 33-10-0806-01 Canadian Business Counts, with employees, December 2023.

Weighting factor used across all calculations

A minimum-bound methodology was used to calculate employment estimates for each six-digit level NAICS code by multiplying the number of business counts in each size category (e.g., 1-4 employees) by the category’s minimum employee count (e.g., 1). The same methodology was applied to the number of business counts at the four-digit level NAICS code. Once estimates at the four-digit level were calculated, the weighting factor for each six-digit level NAICS code was determined by dividing six-digit level NAICS code estimates by four-digit level NAICS code estimates. The table below (figure 4) includes the weighting factor for all life sciences NAICS codes used to estimate GDP, compensation, and revenue numbers.

Figure 4: Weighting factor for all life sciences NAICS code using Business Counts data

NAICS CODE	WEIGHTING FACTOR
Wet corn milling [311221]	19%
Oilseed processing [311224]	16%
Other basic organic chemical manufacturing [325190]	32%
Artificial and synthetic fibres and filaments manufacturing [325220]	26%
Chemical fertilizer (except potash) manufacturing [325313]	49%
Mixed fertilizer manufacturing [325314]	41%
Pesticide and other agricultural chemical manufacturing [325320]	10%
Pharmaceutical and medicine manufacturing [325410]	100%
Medical equipment and supplies manufacturing [339110]	100%
Pharmaceuticals and pharmacy supplies merchant wholesalers [414510]	69%
Professional machinery, equipment and supplies merchant wholesalers [417930]	56%
Seed merchant wholesalers [418320]	13%
Agricultural chemical and other farm supplies merchant wholesalers [418390]	46%
Testing laboratories [541380]	12%
Research and development in the physical, engineering and life sciences [541710]	13.12%*

*NAICS 541710 includes non-life sciences activities. To refine employment estimates, we apply a weighting factor from [Accelerating Prosperity: The Life Sciences Sector in Ontario \(LSO, 2019\)](#). The factor—0.144—was derived from Statistics Canada's 2016 Census (NOC data, p.74). We adjust NAICS 541710 employment using this factor, then divide by total NAICS 5417 employment to determine a more accurate weighting for life sciences.

Employment

Employment estimates at the six-digit NAICS level were calculated by applying a weighting factor (see Figure 4) to employment figures at the four-digit NAICS level. In 2023, Ontario's life sciences sector employed 88,632 professionals. Drugs and pharmaceutical companies lead in employment, accounting for 38% of the sector's workforce. Nearly as large, the medical devices & equipment industry employs 31,286 people, representing 35% of the sector's employment.

Scientific research and development companies supported 14,676 jobs (17%), enabling innovation across biotechnology, drug discovery, and medical advancements. Meanwhile, the biosciences sector, with 8,803 employees (10%), continues to grow as new technologies in genomics, synthetic biology, and regenerative medicine emerge.

Figure 5: Employment estimates for Ontario's Life Sciences Sector by industry category

INDUSTRY CATEGORY	EMPLOYMENT
Drugs and Pharmaceuticals	33,867
Medical Devices & Equipment	31,286
Scientific Research and Development	14,676
Biosciences	8,803
Total	88,632

Source: TRBOT analysis. Statistics Canada. Table 14-10-0202-01 Employment by industry, annual.

Revenue

Revenue estimates at the six-digit NAICS level were calculated by applying a weighting factor (see Figure 4) to total 2023 revenue figures at the four-digit NAICS level, except for testing laboratories and research and development in life sciences. For these categories, the only available data for calculating estimates was total revenue at the two-digit NAICS level for 2022. To refine the estimates, an additional weighting factor was developed by dividing employment data at the two-digit by four-digit levels to determine the proportion of revenue attributable to the four-digit level. Once these estimates were calculated, the original weighting factor (Figure 4) was applied to derive the six-digit revenue estimates for NAICS 541380 and 541710.

Figure 6: Revenue estimates for Ontario's life sciences sector by type of business activity

BUSINESS ACTIVITY	REVENUE (\$ BILLIONS)
Research and Discovery, 2022	\$3.456
Manufacturing & Production, 2023	\$63.154
Wholesale & Distribution, 2023	\$19.568
Total	\$86.188

Source: TRBOT analysis. Statistics Canada. Table 33-10,0551-01 Financial and employment statistics for enterprises, by province, territory and region, Table 16-10-0117-01 Principal statistics for manufacturing industries, by NAICS and Table 20-10-0077-01 Annual wholesale trade survey.

Compensation

Compensation estimates at the six-digit NAICS level were calculated by applying a weighting factor (see Figure 4) to total 2023 revenue figures at the four-digit NAICS level, except for life sciences wholesalers and distributors. For these categories, the only available data for calculating estimates was total compensation for all jobs at the three-digit level. An additional weighting factor was developed to refine the estimates by dividing employment data at the two-digit by four-digit levels to determine the proportion of compensation attributable to the four-digit level. Once these estimates were calculated, the original weighting factor (Figure 4) was applied to derive the six-digit revenue estimates for NAICS 414510, 417930, 418320, and 418390.

Figure 7: Compensation for all jobs estimates for Ontario's life sciences sector by type of business activity

BUSINESS ACTIVITY	COMPENSATION (\$ BILLIONS)
Research & Discovery, 2023	\$1.660
Manufacturing & Production, 2023	\$3.537
Wholesale & Distribution, 2023	\$4.932
Total	\$10.130

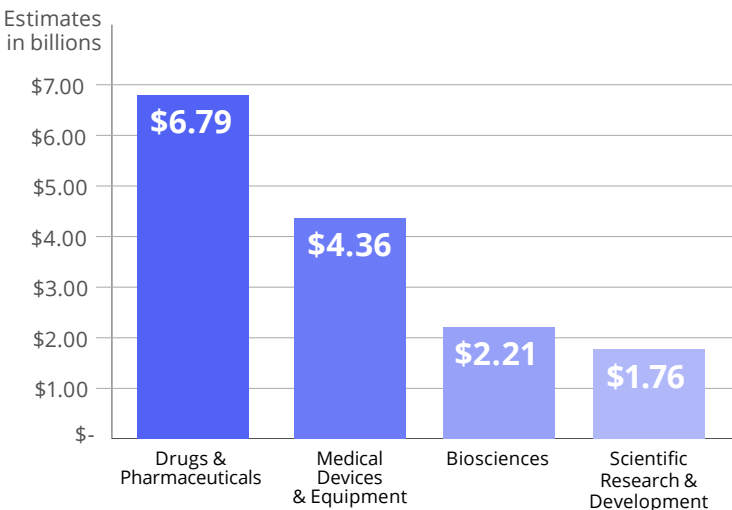
Source: TRBOT analysis. Statistics Canada. Table 36-10-0489-01 Labour statistics consistent with the System of National Accounts (SNA), by job category and industry.

Gross Domestic Product (GDP)

GDP estimates at the six-digit NAICS level were calculated by applying a weighting factor (see Figure 4) to total the latest GDP figures available at the four-digit NAICS level (2021 current dollars). Drugs & pharmaceuticals companies led with more than \$6 billion, followed by medical devices & equipment firms with \$4 billion. The biosciences industry contributed \$2 billion, while scientific research and development added close to \$2 billion (see Figure 8).

Figure 8: Contribution of the Life

Sciences sector to Ontario's GDP, 2021



Source: TRBOT analysis. Statistics Canada. Table 36-10-0402-01 Gross domestic product (GDP) at basic prices, by industry, provinces and territories.

Exports

The total export value of Ontario's life sciences goods was determined using data from Trade Data Online, which provides detailed information at the six-digit NAICS level.

Figure 9: Total Ontario life sciences exports, 2023

INDUSTRY	EXPORTS (\$ BILLIONS)
Mixed fertilizers	\$0.046
Pesticide and other agricultural chemicals	\$0.101
Artificial and synthetic fibres and filaments	\$0.244
Wet corn milling	\$0.290
Chemical fertilizer (except potash)	\$0.378
Oilseed processing	\$0.630
Medical equipment and supplies	\$1.239
Other basic organic chemicals	\$1.953
Pharmaceutical and medicines	\$8.982
Total	\$13.863

Source: Trade Data Online. Innovation, Science and Economic Development Canada. (accessed: January 14, 2025)



The Toronto Region Board of Trade is one of the largest and most influential chambers of commerce in North America and is a catalyst for the region's economic growth agenda. Backed by more than 11,500 members, we pursue policy change to drive the growth and competitiveness of the Toronto region, and facilitate market opportunities with programs, partnerships and connections to help our members succeed – domestically and internationally.

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