

A couple stands on a rocky outcrop, looking out over a vast, forested landscape at night. The sky is dark, and the aurora borealis is visible as a vibrant, multi-colored light display in the sky. The couple is seen from behind, looking towards the horizon. The man is wearing a dark jacket and the woman is wearing a light-colored sweater and a beanie. The landscape is covered in dense, dark green trees, and a body of water is visible in the distance.

Ontario Genomics
STRATEGIC VISION
2026-2031

TWO MISSIONS, ONE VISION

FROM PRECISION HEALTH TO A
SCALED BIO-BASED ECONOMY

**Ontario Genomics' vision
is to build a globally competitive
bio-based economy for Ontario**

OUR VALUES



EXCELLENCE

We pursue high scientific and operational standards by applying evidence-based rigour and expert-informed processes to deliver high-quality, measurable commercial outcomes.



PASSION

We bring energy and purpose to our work, staying curious as we seek innovative solutions that make a meaningful difference in our communities.



INTEGRITY

We build trust through respect and informed judgment, demonstrating dependability in delivering on our mandate to support Ontario's bio-based economy.



COLLABORATION

We achieve more together by fostering safe, inclusive, and respectful environments across our organization and in the communities we serve, where compassion and diverse perspectives strengthen decision-making.

LAND ACKNOWLEDGEMENT

We recognize the land we operate on. Ontario is home to many diverse First Nations, Inuit and Métis peoples and is covered under more than 40 treaties and other land agreements.

At Ontario Genomics, we are committed to walking the path of reconciliation, which includes learning about the issues impacting Indigenous peoples and finding opportunities to include Indigenous perspectives and participation both in the work we do and in the field of science.

MESSAGE FROM OUR LEADERSHIP

Two missions, one vision



Ann Marie Vaughan (Chair)
President and CEO, Humber
College Institute of Technology
& Advanced Learning

Biotechnology is a critical driver of better health and a stronger bio-based economy in Ontario. This **Strategic Vision** sets Ontario Genomics' direction for the next five years: to turn our scientific and commercial strengths into much-needed solutions that reach patients, customers, and markets faster.

With two missions supporting one vision, we can build a competitive, resilient bio-based economy, supported by the distinct pathways necessary to achieve it. Precision health requires clinical evidence, trusted data, and adoption within a patient-centred health system. Food and industrial biotechnology need strong unit economics, greater sustainability, integration of value chains, and access to scale-up pathways.

We will focus our ambitions on **accelerating commercialization** that delivers real uptake, strengthening the platforms that enable responsible collaboration within each mission.

In **precision health**, we will drive \$500M in new investment into the Canadian health ecosystem, sequencing the genomes of 100,000 people in Canada via a shared platform governed by responsible data use practices. In **food and industrial biotechnology**, we will see \$100M in direct industry funding for research and development, accessible scale-up capacity up to 10,000L, with made-in-Ontario upcycled bio-based products on the market.

This plan is designed for execution, with clear ambitions and outcomes across both missions. Working with partners across Ontario and beyond, we will turn game-changing progress in biotechnology into **tangible benefits** for individuals, communities and our economy.



John M. Rafferty
President & CEO

BIO-BASED ECONOMY

PRECISION HEALTH

Commercialization
Data Infrastructure
Patient Journey



FOOD & INDUSTRIAL BIOTECH

Sustainable Growth
Digital Platforms
Scale-up Infrastructure

A GENOMIC SHIFT:

DNA Sequencing to Biotechnology Solutions

Over the last decade, we have witnessed a monumental shift from genomics being used to understand biology to biology being used as technology. The price of sequencing a genome, now approaching \$100 per human genome, is leading to a boom in genomic data generation ripe for AI analysis, and patient and commercial benefit. At the same time, scientists have an unprecedented ability to edit and write genomes, which has created a molecular toolkit to design products from therapeutics to food and materials. Biomanufacturing builds on this molecular toolkit, taking lab discoveries into commercial manufacturing processes, representing a \$1.5T opportunity.



“Biotechnology has already changed how we feed the world, but we’ve only scratched the surface. The enormous potential in transforming how we grow food and develop new materials depends on more than scientific discovery; it depends on building stronger pathways between innovation, industry, and market adoption.”

Dave Smardon, President & CEO, Bioenterprise Canada

Within **precision health**, the low cost of sequencing and scientific advances make genomic data a commonplace clinical tool. Genomics, coupled with Artificial Intelligence (AI), is being used to diagnose rare diseases more quickly through comprehensive genome-wide sequencing here in Ontario, funded through the healthcare system. The development of targeted genetic therapies is next, driven by novel regulatory frameworks and improved gene-editing technology. AI and Machine Learning (ML) are being used to design drugs based on genomic tumour sequences to target previously untreatable diseases like triple-negative breast cancer. Advances in precision health are gaining commercial success, with recent acquisitions of mRNA and RNAi therapies.

Canada largely relies on imports across food, materials, and chemicals that are produced using biomanufacturing abroad. Farmers rely on imported feed additives like amino acids, which Canada can make right here using feedstocks like Ontario corn. Enzymes needed in our **agriculture and food processing** sector are also imported. In the next five years, we can build a diverse domestic capacity to supply existing markets and use Ontario-grown feedstock and byproducts from crops, dairy, and other sidestreams to strengthen our agricultural communities. New mandates like Extended Producer Responsibility create an economic incentive for manufacturers to bring new packaging solutions like biodegradable plastics into the supply chain, where biomanufacturing plays a key role. And with the race to produce critical minerals to supply diverse sectors, including electric vehicles, semiconductors and defence, we need ways to speed up mining and extract value from legacy tailings. Biomanufacturing will be central to developing new solutions and Ontario can take a leadership position if we effectively shepherd technology out of the lab into pilot and commercial scale manufacturing.

WHAT WE HEARD

Ontario Genomics has engaged hundreds of stakeholders across academia, industry, investors and government.



“Ontario Genomics is one of the few organizations who understand the breadth and depth of potential impacts for genomics across these sectors – potential that has gone widely untapped.”

George Burton, President, Canadore College

1

Commercialization pathways differ by sector, so support must be tailored

Stakeholders were clear that “commercialization” is not a single pathway. Health innovations require clinical validation, regulatory clearance, reimbursement, and integration into clinical workflows. Food and industrial biotech innovations require proof of unit economics, scale-up readiness, supply chain integration, and customer qualification.

CONCLUSION: If we use a one-size-fits-all approach then outcomes will be diluted. Program design, partner selection, metrics, and timelines must reflect the realities of each commercialization pathway.

2

Infrastructure access can be a major accelerator for food and industrial biotech

In food and industrial biotech, access to scale-up infrastructure is a key opportunity in Ontario’s commercialization value chain. With increased access to scale up infrastructure and expertise, strong innovations can grow beyond the bench, creating jobs, as well as proving manufacturing readiness, yields, and cost competitiveness.

CONCLUSION: infrastructure is not an optional add-on. It is a central lever to increase the rate of commercialization, reduce time-to-market, and anchor scale-up activity in Ontario.

3

Start-ups face a more difficult funding environment, and the goal posts have moved

Across both missions, stakeholders described a harder financing landscape with investors requiring later-stage de-risking, stronger commercial traction, and a clearer path to scale. This issue is magnified for Canadian companies that already face smaller cheque sizes and a narrower domestic market.

CONCLUSION: support must help companies meet the new bar, including stronger validation, evidence, partnerships, and customer pull. Ontario Genomics can also play a connective role to attract outside capital and strategic partners.

4

Strong leadership in data harmonization will unlock innovation

Stakeholders identified a need for leadership in data harmonization and dissemination. In health, reducing fragmentation improves interoperability, speeds up research translation, and strengthens the ability to generate real-world evidence. Across sectors, harmonizing data processes will de-risk investments.

CONCLUSION: convening power matters. Progress requires shared approaches, practical standards, and collaboration across institutions. Ontario Genomics can help coordinate initiatives that are too complex for any single organization to lead.

5

Geopolitics is creating headwinds for researchers and industry

Stakeholders noted that the geopolitical landscape is adding friction across research collaboration, supply chains, investment flows, and competitiveness. This includes heightened competition for talent, increased security and compliance considerations, and uncertainty affecting partnerships and commercialization timelines.

CONCLUSION: Ontario needs resilient commercialization pathways, stronger domestic capacity, and more diversified partnerships. We can help innovators navigate this landscape by strengthening networks and reducing reliance on single points of failure.

VISION

Building a globally competitive bio-based economy for Ontario



MISSION 1: PRECISION HEALTH

Accelerating the development and commercialization of precision diagnostics and therapies to improve patient outcomes.



MISSION 2: FOOD AND INDUSTRIAL BIOTECHNOLOGY

Mobilizing innovators to develop, scale, and commercialize bio-based technologies across agri-food, materials, and critical minerals sectors.



With the impacts of climate change weighing heavily on us, consumers want better options and genomics technology helps fill this need in the marketplace. We're upcycling waste to bioengineer colourants for food, cosmetics and fabrics, giving producers in these sectors sustainable ingredients for their products and peace of mind for their customers.

**Iris Redinger, CEO and Founder of Material Futures,
a BioCreate and wasteCANcreate company**

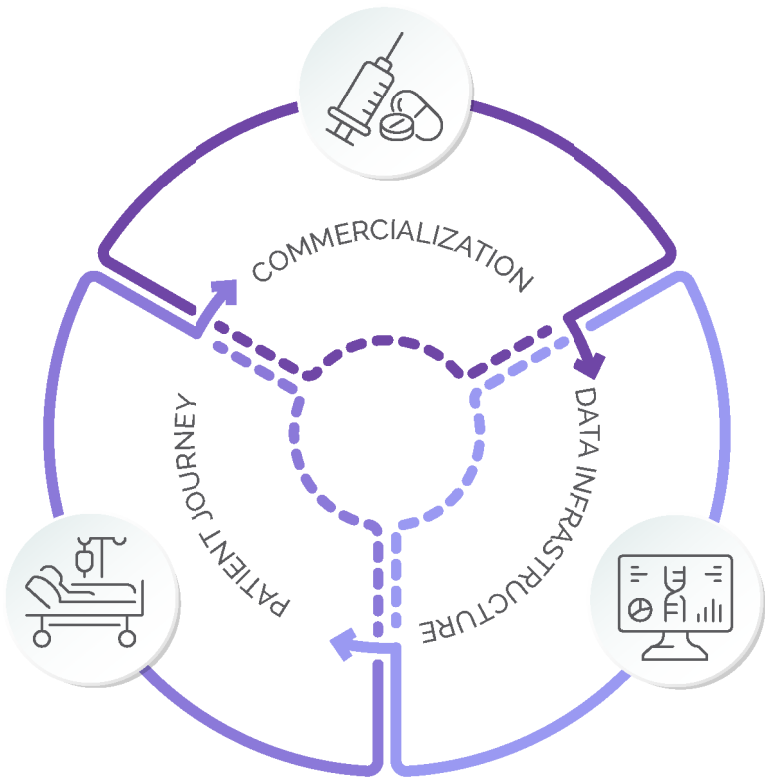


Food safety affects everyone, everywhere and genomics is saving lives by allowing us to better identify and understand dangerous pathogens. Ontario Genomics brings the right partners together at the right time to ensure critical biotech breakthroughs, like rapid testing, protect Ontario's food processing industry.

**Dr. Lawrence Goodridge, Director, of the Canadian
Research Institute for Food Safety**

MISSION 1: PRECISION HEALTH

Accelerating the development and commercialization of precision diagnostics and therapies to improve patient outcomes.



FIVE-YEAR IMPACTS BY 2031

- Contributed to \$500M of new investment into the Canadian health ecosystem.
- Backed 65 made in Ontario health innovations.
- Supported the genome sequencing of 100,000 people in Canada and the development of a shared platform governed by responsible data use practices.



A clear set of data standards and collaboration across institutions is the best way to accelerate the development and use of novel therapeutics and diagnostics, as we strive for more personalized, tailored, and innovative approaches to care.

Dr. Jason Berman, CEO and Scientific Director, CHEO Research Institute, VPR CHEO, Professor of Pediatrics and Cellular and Molecular Medicine, Attending Physician, Division of Hematology/ Oncology

AMBITION 1: COMMERCIALIZATION

We will realize the value of precision health when innovations move beyond pilots into clinical practice, procurement pathways, and scalable business models.

Ontario Genomics will:

- Support innovation with clear clinical unmet need and product-market fit.
- Strengthen go-to-market capacity for researchers and companies, including evidence strategies, reimbursement pathways, and partnerships.
- Build international corporate and investor connections that bring capital and market insights to Ontario, while keeping growth anchored in Canada.

AMBITION 2: DATA INFRASTRUCTURE

Data is essential to precision health. Ontario's advantage will come from enabling responsible, interoperable use of genomics data paired with AI-enabled insights that improve accuracy and speed.

Ontario Genomics will:

- Advance practical initiatives that reduce friction in data access, mapping, and sharing.
- Support AI applications that accelerate diagnostics, improve decision support, and strengthen discovery and development.
- Enable secure, privacy-centred collaboration across institutions and jurisdictions through common approaches and shared platforms.

AMBITION 3: PATIENT JOURNEY

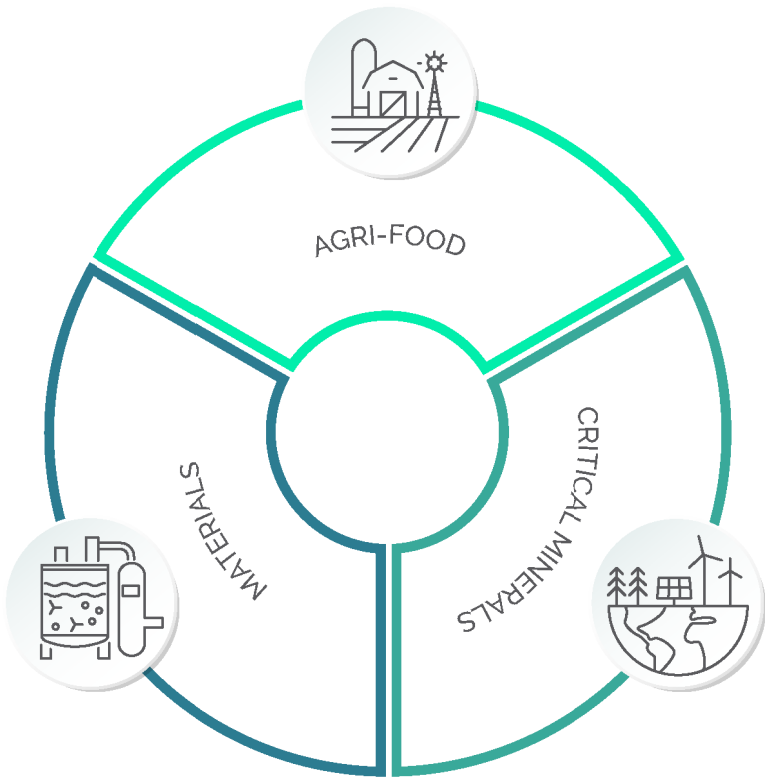
Precision health must work in the real world and across diverse populations, truly understanding the patient journey. The goal is better health outcomes, earlier answers, and more equitable benefit.

Ontario Genomics will:

- Convene patients, clinicians, researchers, innovators, investors and system leaders to align on patient-driven solutions.
- Support solutions that close gaps for underserved populations, including rural and remote communities.
- Contribute to a stronger enabling environment through patient driven education, communications, partnership-building, and policy engagement.

MISSION 2: FOOD AND INDUSTRIAL BIOTECHNOLOGY

Mobilizing innovators to develop, scale, and commercialize bio-based technologies across agri-food, materials, and critical minerals sectors.



FIVE-YEAR IMPACTS BY 2031

- \$100M in direct industry funding of R&D projects.
- World-class, accessible scale-up infrastructure up to 10,000L.
- Five made-in-Ontario upcycled bio-based products on the market.



“Growing up on a dairy farm in Southwestern Ontario, and now owning and operating a farm producing corn, high-protein wheat, and soybeans, I see firsthand what’s at stake for Canadian producers. Ontario Genomics has been an essential partner in ensuring that cutting-edge genomic tools translate into real, practical gains for agriculture, all the way from healthier livestock to more resilient crop systems and everything in between.”

Prof. Christine Baes, Canada Research Chair in Livestock Genomics, University of Guelph

AMBITION 1: SUSTAINABLE GROWTH

For industrial biotechnology, adoption decisions are driven by performance, cost, and supply chains. The introduction of sustainable technologies must be paired with strong unit economics when making business decisions.

- Ontario Genomics will:
- Support technologies that improve productivity, reduce waste, and create diverse, high-value products from Ontario’s biomass, including agricultural sidestreams.
 - Advance circular bioeconomy pathways, enabling companies to become environmentally and financially sustainable.
 - Take a whole value chain approach, connecting technology developers with feedstock providers and end users.

AMBITION 2: DIGITAL PLATFORMS

Industrial biotech scales faster when companies can credibly demonstrate techno-economics, life cycle performance, and risk reduction.

- Ontario Genomics will:
- Support techno-economic analysis and life cycle assessments as standard commercialization tools.
 - Enable AI-driven optimization for strain development, bioprocessing and product performance.
 - Promote practical tools that shorten iteration cycles and improve predictability, including approaches such as digital twinning and high-throughput testing.

AMBITION 3: SCALE-UP INFRASTRUCTURE

Ontario’s commercialization value chain has a critical gap: accessible scale-up capacity. Without it, promising bio-based products stall between lab success and commercial production.

- Ontario Genomics will:
- Expand access to scale-up and bioprocess infrastructure so start-ups can de-risk their technologies here in Ontario.
 - Strengthen integration into existing value chains, including regulatory standards, materials testing, and customer qualification steps.
 - Work with industry and government partners to shape strategies that expand Ontario’s scale-up capacity and commercialization readiness.

OUR ONGOING IMPACT

Underpinning our strategy is a robust portfolio of high-impact programs that translate Ontario's world-class research into **market-ready solutions**. Through flagship initiatives like BioCreate and the Genomic Applications Partnership Program (GAPP), we continue to bridge the innovation gap, providing the critical funding, mentorship, and industry connections necessary to scale homegrown SMEs. Our specialized consortia, including wasteCANcreate and the Canadian Precision Health Initiative (CPHI), are driving the circular bioeconomy and precision health landscapes to upcycle organic waste into high-value products and integrating genomic data into frontline clinical care. In the past **ten years**, we have funnelled **\$606M in funding** directly into the bio-based economy leading to **\$513M in follow-on funding**, **310 patent applications** and **4,404 jobs**. Some of our featured projects are listed below:

GENOMIC APPLICATIONS PARTNERSHIP PROGRAM (GAPP):

The Genomic Applications Partnership Program (GAPP) drives the translation of genomics research into tangible solutions that address critical challenges across key sectors including health, food and agriculture, environment, and natural resources. By fostering strategic collaborations between Ontario's industry and academic researchers, GAPP accelerates the **adoption and commercialization of innovative genomics-based products**, processes, and services. Through targeted investments, GAPP empowers organizations to capture the value of genomics, strengthen innovation capacity,

and enhance societal and economic outcomes. Ontario Genomics' success in the GAPP program is a cornerstone in positioning Canada as a global leader in genomics-driven innovation:

GAPP impact over 10 years

(April 2015 – March 2025)

- 44 GAPP projects funded
 - Total project value \$167M
 - Federal investment \$54M
 - Industry investment \$66M
- \$172M in follow on funding
- 1,140 jobs created

THE CANADIAN PRECISION HEALTH INITIATIVE (CPHI):

A **\$200 million** national initiative establishing a genomic database accessible to researchers and industry, aimed at accelerating the development of faster, more affordable diagnostics and therapeutics for Canadians. This effort will create Canada's largest-ever human genomic data collection, comprising over 100,000 genomes. Notably, Ontario projects are set to contribute **50,000 genomes** to this landmark initiative. Of \$71M invested by Genome Canada in this initiative, Ontario projects received **\$37M (52%)** of available funding together with **\$6M** of industry co-funding. Key outcomes and impacts in Ontario include:

- Generation of highly valuable datasets for industry
- Real-time diagnoses for children with rare and neurodevelopmental conditions
- Accelerate the diagnosis of hundreds of treatable diseases by applying genome sequencing to all newborns
- Screening for genetic links to chronic diseases that disproportionately affect Black Canadians.

BIOCREATE

BioCreate is a five-year, **\$11.6-million** accelerator program led by Ontario Genomics and supported by the Government of Canada through FedDev Ontario. The program is designed to help high-potential **biotechnology SMEs** in health, food and agriculture, and cleantech move innovations into real-world use faster by pairing targeted funding with hands-on business mentorship and investor connectivity. Since launch, **32 companies** have been funded and they are collectively delivering strong economic and innovation outcomes, which are growing year over year:

- \$72M in follow-on investment raised to date
- \$26M in sales and revenue generated
- 32 companies supported
- 122 jobs created across Ontario



SUCCESS IN 2031 AND BEYOND

This Strategic Vision sets out a blueprint for what's possible for **Ontario's bio-based economy**. It sets a clear direction for how Ontario Genomics will help translate genomics capability into solutions that are adopted, scaled, and sustained, with the agility to move quickly, learn, and deliver. We achieve this through outcome-driven programming, partner-led execution, strong stewardship of diverse funding, and robust governance.

By 2031, Ontario can be in a **competitive position** to move faster from discovery to adoption. **Precision health** innovations will be reaching patients with fewer delays, and the foundations for responsible data use will be stronger. In **food and industrial biotechnology**, more solutions will be advancing from pilot to commercial reality, strengthening value chains and growing Ontario-made products. Most importantly, Ontario-built companies will have clearer routes to market and scale.

One vision sets the direction. **Two missions** unlock momentum, with the focus and creativity required to build tomorrow's **bio-based economy**.



BioCreate accelerator support came at a critical time for Afynia. The seed funding allowed us to expand clinical testing and raise another \$5M in follow-on investment.

Dr. Jocelyn Wessels, CEO Afynia (Hamilton)



Ontario Genomics' patient-centric approach to improving healthcare keeps the focus on the human aspect of medicine while pushing for equal access to medical advancements for everyone.

Fanny Sie, Head of Business Architecture, AI Enablement, Global Roche Information Solutions, Roche



Ontario has the opportunity to show strong leadership in data harmonization to speed up research and development for more breakthroughs in precision healthcare.

Dr. Stephen Scherer, Chief of Research, Northbridge Chair in Paediatric Research, Senior Scientists, Genetics & Genome Biology Program

