Signal49
RESEARCH

Canada's Genomics Advantage

Domestic strengths and global market potential

Canada's genomics advantage

Genomics has a wide range of applications in the economy.[1] For example, precision medicine enables personalized treatments[2]; high-yield, drought-tolerant seeds increase agricultural productivity[3]; and microbial and enzyme-based processes reduce the environmental impact of mineral extraction.[4]

Canada's genomics sector

450 firms

- 100 genomics creators
  - 67 pure genomics creators that study DNA and its interactions
  - 33 diversified genomics creators that also study DNA but derive most of their revenue from non-genomics activities
- 350 genomics implementers that apply genomics tools, data, or methods to create products and services across sectors
  - 90 genomics-driven implementers that rely on genomics as a core input into their commercial offerings
  - 260 genomics-enabled implementers that use genomics within more diversified product lines

Source: Signal49 Research.

A 2025 working paper by the Canadian Genomics Strategy Secretariat found that core genomics companies (i.e. genomics creators) have grown between 2012 and 2023, with sales up 88 per cent, revenues up 103 per cent, the number of companies increasing 200 per cent, and the genomics workforce expanding 167 per cent.[5]

We found Canada has a relative intellectual property specialization index of 1.54 in biotechnology, the patent class in which most genomics-related patents are classified. This indicates Canada has 1.5 times more active patents (those with current enforceable rights) than the world average.[6]

Our analysis shows that Canada ranks in the top three in globally disclosed biological sequences in genomic patents and the number of venture capital-backed genomics companies.

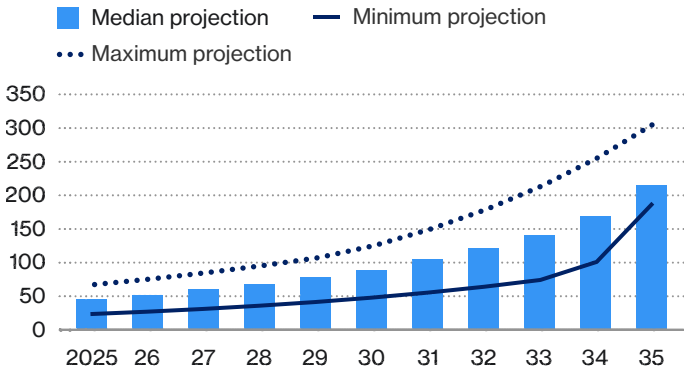
Personalized CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats) therapy for genetic disease was enabled by research conducted at the University of British Columbia.[7] To foster more breakthroughs in this area, Genome Canada launched the Canadian Precision Health Initiative (CPHI) in 2025 with approximatively $81 million in Government of Canada investment, and over $100 million more expected in co-investment, to integrate genomics into personalized care.[8]

1 Canadian Genomics Strategy (CGS) Secretariat, Analysis of Statistics Canada demographic and financial data.
2 National Human Genome Research Institute, "Personalized Medicine."
3 Food and Agriculture Organization (FAO) of the United Nations, "Gene editing and agrifood systems."
4 Defense Advanced Research Projects Agency (DARPA), "EMBER: Environmental Microbes as a BioEngineering Resource."
5 Canadian Genomics Strategy (CGS) Secretariat, Analysis of Statistics Canada demographic and financial data.
6 Sonmez, "Intellectual Property in Canada."
7 University of British Columbia, "World's First Personalized CRISPR Therapy for Genetic Disease Enabled by Groundbreaking Research at BMB."
8 Genome Canada, "Canada launches CA$200M genomics data initiative to drive precision health and economic growth."

Economic potential of genomics

According to our analysis of 10 distinct market projections from financial analysts in Canada and around the world, the global genomics market is expected to grow considerably over the next decade. (See Chart 1.) Projections for 2035 span US$186.6 billion to US$304.8 billion, with a median estimate near US$215.2 billion and a compound annual growth rate of 16.8 per cent.

Chart 1
Global genomics market size is on a strong growth trajectory (US$ billions)



Source: Signal49 Research's analysis of forecasts by 10 different market research firms (see Methodology for details).

The projections show that the genomics market is segmented into four primary revenue categories:

Consumables and reagents
- kits, enzymes, library prep, flow cells
- largest and most recurring segment

Instruments and systems
- sequencing platforms, automation, hardware

Services
- Next-Generation Sequencing-based sequencing services
- Clinical, Contract Research Organization, and core genomics services

Bioinformatics and genomics software
- data analysis, interpretation, Artificial Intelligence/ Machine Learning platforms
- cloud and data management solutions
- fastest-growing segment

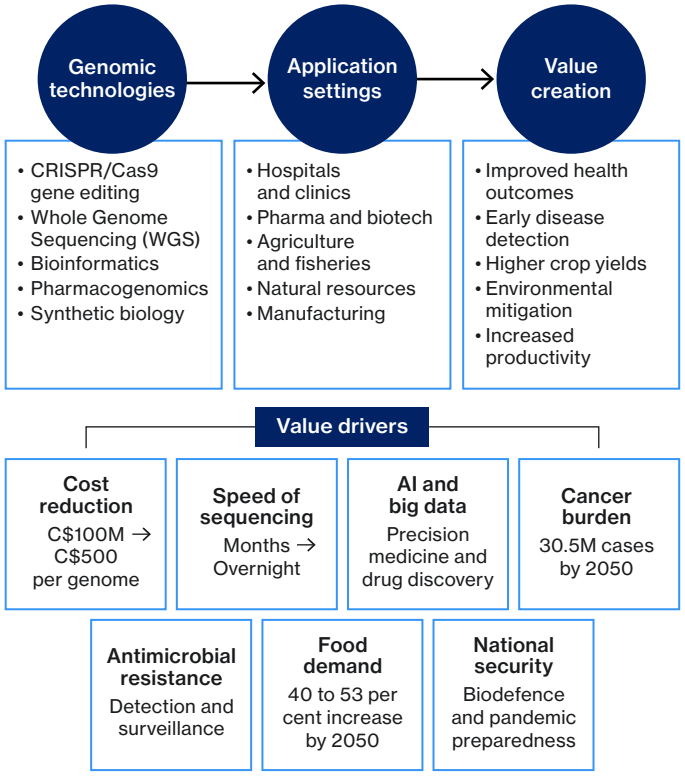
Canada's growing genomics sector, strong patent position, and established research networks appear to provide a solid foundation to capture this expanding global market.

Genome sequencing is now much more affordable and can be completed in hours, while AI makes it possible to analyze massive genomic datasets quickly.

Rising cancer rates, growing antimicrobial resistance, and the risk of emerging pathogens and other bio-threats are driving demand for genomics-enabled surveillance, early diagnosis, and personalized treatment.

Genomics supports natural resource management and higher-yield and climate-resilient crops and livestock—and strengthens national security through rapid pathogen detection, environmental monitoring, and vaccine development. (See Exhibit 1).

Exhibit 1
Economic and social value creation



Sources: Signal49 Research; National Human Genome Research Institute; Armitage; O'Connor and McVeigh; Luo and Smith; World Health Organization (WHO) ; Food and Agriculture Organization (FAO) of the United Nations; Executive Office of the President of the United States.

For details on our analysis, please download the methodology.