



# PRODUCING STRONG RESEARCH AND INNOVATION FOR A STRONGER PROVINCE

**The Issue:** Cutting-edge research and innovation are core ingredients for a thriving, globally competitive economy and also help produce the breakthroughs that lead to healthier lives and communities. Ontario's universities play a key role in producing groundbreaking and impactful research and innovation. But doing so requires years of work and commitment that is only possible with stable, long-term investment and support.



## KEY FACTS

# \$25B

The yearly impact of R&D conducted by universities

### The background

- In today's rapidly-changing economy, innovation is a crucial element for ensuring the province has competitive businesses and a dynamic society.
- The same report highlighted that "independent science and scholarly inquiry have been underfunded for much of the last decade," and that if Canada is to remain competitive when it comes to research and innovation, "major reinvestments are urgently required."<sup>3</sup>
- The impact of research and development (R&D) conducted by universities is nearly \$25 billion annually.<sup>1</sup> This research has a substantial impact on Ontarians, leading to agricultural innovations that help feed us by boosting farmers' yields, medical discoveries that keep us healthy and strong and new technology that inspires the launch of start-ups and keeps established industries, from mining to finance and manufacturing, innovative and competitive.
- A 2015 innovation report card from the Conference Board of Canada notes that while Ontario has a strong base when it comes to research and innovation, the province "might be facing challenges commercializing and reaping the larger benefits of innovation."<sup>4</sup>
- Fostering innovation requires investing all the way across the discovery-to-innovation process.
- The recent federal report delivered by Canada's Fundamental Science Review panel underlines the crucial role of discovery research in fostering innovation, noting that the "fruits of innovation do not materialize out of thin air... They grow out of the wellspring of knowledge, ideas, and insights that originate largely, albeit not exclusively, from basic research."<sup>2</sup>

### Research in action:

The University of Windsor and Ford Canada are working together to pursue groundbreaking research into combustion-engine technology, while research from the University of Toronto's Ethnography Lab has helped document the cultural diversity of Kensington Market in downtown Toronto and the neighbourhood's role in a city that's constantly growing and transforming.

For more examples of university research, visit [ontariosuniversities.ca](http://ontariosuniversities.ca).

<sup>1</sup> Council of Ontario Universities. "Driving a Prosperous Future: Economic Analysis of the Lasting Impact of Ontario Universities." 2017.

<sup>2</sup> Canada's Fundamental Science Review. "Investing in Canada's Future: Strengthening the Foundations of Canadian Research." 2017.

<sup>3</sup> Ibid.

<sup>4</sup> Innovation: Provincial and Territorial Ranking." The Conference Board of Canada, September 2015. <http://www.conferenceboard.ca/hcp/provincial/innovation.aspx> (Accessed August 22, 2017)

## The Discovery-to-Innovation Pipeline

The inventions and ideas that change our lives only come to fruition after years or decades of work to push research from **discovery to innovation**.

**Discovery** begins with fundamental research. Revolutions in artificial intelligence, medicine, computer science and more have come from allowing university researchers to pursue their discoveries and interests and seeing where they lead.

**Innovation** happens when research is adopted by larger society and inventions become available to Ontarians.

Ensuring that research continues to change everything from how we get the news in the morning to how we track our sleep at night requires partnerships among universities, the private sector and government, as well as broad investment across the whole research process, from discovery to innovation.



### KEY FACTS

# \$5.2B

The amount of R&D carried out by the higher education sector

# 34%

Percentage of the province's research activities in 2014 that was conducted by universities

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### What Ontario's universities are doing

The higher education sector is the second largest performer of research and development in Ontario (after businesses), carrying out an estimated \$5.2 billion in work, which translated into 34 per cent of the province's research activities in 2014.<sup>5</sup> This work spans all fields and disciplines and helps produce new thinking and technological breakthroughs that can be felt in factories, government offices, offices and homes across the province. Universities currently accomplish this through:

- Research projects that aim to improve lives across all areas of business and society: for example, reducing the harm of oil-and-gas industry flaring, examining new medical uses for wearable technology, and looking at ways of making commercial cross-border traffic between Canada and the U.S. more efficient.
- Collaborative work with local businesses, not-for-profits and industries that improves communities across the province: for example, through increasing food access in Northern communities, reducing the rates of bullying and working with police forces to improve officers' use-of-force decision-making during confrontations.

<sup>5</sup> Statistics Canada. CANSIM Table 358-0001. Data is for 2014.

### How government can help

The Ontario government can invest in strong research and innovation by:

- Working with the federal government to improve research funding and ensure Canada and Ontario are investing in research across the board, from discovery to innovation.
- Increasing investments in the Ontario Research Fund and ensuring it supports a wide range of research and innovation.
- Supporting the movement of universities' ideas and inventions into the marketplace by creating a research commercialization fund.

### Partnering for a better future

- Fostering strong research innovation will fuel the new ideas, new inventions, new ways of doing business, and new ways of thinking about social and economic challenges that improve how Ontarians live and work and help keep Ontario on the cutting edge.

### Stay informed

- Go to [ontariosuniversities.ca](http://ontariosuniversities.ca) to learn more about how to invest in research and innovation that improves lives and helps communities thrive.