



## Introduction

As Canada emerges from the global pandemic, we have an opportunity to look around, both domestically and internationally, and take stock of how things have changed. COVID-19 has reshaped our world, accelerating many economic and social trends. Canadian public policy must respond to reflect new realities. It is investments in people and ideas that will enable Canada to tackle the challenges before us, create inclusive economic growth and facilitate a fair and just social recovery from the pandemic.

Front of mind throughout the pandemic has been Canada's tremendous healthcare response and the effort of first responders and essential workers. Both have been supported by leading-edge research and researchers, and by the talent developed at Canada's universities over the decades. While the COVID-19 vaccines were developed in 10 months, they were the product of 30 years of discovery research, including research at Canadian universities. This punctuates the need for sustained investment in the Canadian research ecosystem to tackle today's challenges and the unknown challenges of the next 30 years.

Beyond the critical contributions of talent and research, Canada's universities have served as anchor institutions for their communities throughout the pandemic. They have grown student enrollment, delivered on their educational missions, provided safe learning environments for students and helped to stabilize the economy of their local communities. Now, universities are preparing for a safe restart in the fall, bringing more than one million students back to universities and communities across Canada. Put simply, Canada's universities have delivered for Canadians throughout the pandemic, and are poised to accelerate Canada's economic and social recovery.

Internationally, the pandemic has created new headwinds to Canadian competitiveness. Many G7 countries have responded by massively reinvesting in their research ecosystems, including discovery research and knowledge mobilization. For instance, the United States' *Innovation and Competition Act*, has found strong bi-partisan support and proposes a \$250 billion investment in discovery science, advanced research and commercialization.

We need comparable vision to ensure Canada's economic growth, and to make our country more sustainable, more inclusive and better prepared for future emergencies. Through investments in people and ideas, universities can be a key partner in addressing these challenges—in their communities, nationally and internationally.



## Developing talent for Canada

Emerging from the pandemic, Canada must assert itself in a race for talent where success in the global knowledge economy is essential to short and long-term economic growth. As Tiff Macklem, Governor of the Bank of Canada, recently noted “...our biggest asset is a well-educated and diverse workforce.” Investments in talent development create a resilient workforce that can support and propel those most impacted by the effects of COVID-19 and help us best meet future challenges. These investments should also be leveraged to create opportunities for equity-deserving groups—including Indigenous peoples, Black Canadians, people with disabilities and women—to build a more inclusive Canada.

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Canada needs to invest in diverse talent, both undergraduate and graduate, domestic and international, to respond to an increasingly competitive global environment.

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Though the investments Canada has made in students and youth are significant, they are not sufficient for developing the highly skilled workforce we need to compete globally. Canada’s economy stands poised for tremendous growth, yet a shortage of skilled labour is still among the most cited impediments to Canadian business growth. This last year has only magnified the importance of skilled labour, particularly within the digital economy, which is set to lead Canada in future growth. High skilled and digital sectors such as cleantech, advanced manufacturing, agri-food, digital media, clean resources, and health and biotech are forecast to be among Canada’s fastest growing, both in terms of employment and economic growth. But to fully unlock this potential we need to continue developing robust, inclusive, and accessible educational and career pathways for Canadians. And to achieve this, universities must be strong.

Universities are central to meeting this challenge. Undergraduate, graduate and post-graduate programs create reliable talent pipelines, and by attracting international students and researchers, universities bring some of the world’s brightest minds to Canadian shores. And university programs that help workers upskill and reskill are expanding. As just one example, the Energy to Digital Growth Education and Upskilling Project (EDGE UP) supports the transition of displaced oil and gas professionals into in-demand informational technology careers.



It is imperative that investments in skills and talent support an inclusive recovery; advance equity, diversity and inclusion; and advance reconciliation with Indigenous peoples. The COVID-19 pandemic has exposed the need to build economic resiliency among equity-deserving groups. Creating inclusive and accessible educational opportunities will help to ensure all Canadians are equipped with the skills and credentials needed to both fully participate in Canada's economic recovery and adapt to future challenges.

Competition for international talent is increasing at all levels and Canada must think broadly about its approach to talent attraction and retention. Leading researchers have new opportunities to pursue their research in places that were recently less welcoming. Borders are reopening, giving international students more choice than even just two years ago. And due to the pandemic, immigration to Canada has fallen precipitously to the lowest levels since 1998.

Canada has a diverse and welcoming national brand with world-class institutions, and we are seeing more international students arriving from emerging markets. These strengths must be leveraged as global competition heats up. International students and researchers create opportunities for Canadians. With proper investments, we can grow and diversify our international student pools, remove barriers to permanent residency and increase access to post-graduate research opportunities—all of which are necessary to seize this moment to grow our skilled talent pool and enhance the fabric of Canada's economy and society.

## Internationally competitive research

Long-term investments in university research were key to our breakthrough successes in fighting COVID-19. Yet these investments were not made with COVID-19 in mind. Vaccines and other critical elements of our pandemic response were the result of decades of discovery research, proving the strategic value of pushing the frontiers of human knowledge. Recognizing this, many of our international partners and competitors are seizing the moment to build a consensus around large-scale investments in their research ecosystems.

Meanwhile Canada's overall share of economic activity dedicated to R&D (GERD) has declined over the last two decades, dropping from two per cent of GDP in 2004 to 1.5 per cent in 2019, well below the current OECD average of 2.4 per cent. This stands in contrast with Canadian peers. In the same year the United Kingdom recorded 1.75 per cent, France 2.2 per cent, Germany 3.2 percent and others approached five per cent. To our south, the Biden administration's budget includes plans for a historic nine per cent increase in non-defence research investments, bringing it to levels not seen since the "space race." Canada needs a historic re-investment in our research ecosystem to avoid being left behind.



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Canada needs to expand investments in Canadian research to globally competitive levels, including support for fundamental research through federal granting agencies, knowledge mobilization and international research collaboration.

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Research of all kinds generates tomorrow's jobs, as well as creates new breakthroughs for many of our world's pressing issues such as climate change and sustainable development. In addition, social science research provides the tools that society needs to tackle challenges such as inequality, vaccine hesitancy and mental health. Investments in the arts and humanities build understanding and cohesion. Research investments should also be made to specifically support equity-deserving groups.

Canada now has the opportunity to refresh our vision for fundamental research and provide increased multi-year and predictable funding levels for our research ecosystem, doing away with the episodic funding of the past. Research remains one of our greatest tools for shaping Canada's future and the federal granting agencies (NSERC, CIHR, SSHRC) serve as the central pillar of our research ecosystem. Multi-year granting agency investments will signal that Canada remains serious about its research and innovation enterprise, and is seeking to leverage the full capacity of our researchers and universities.

Funding for knowledge mobilization is required to ensure that academic knowledge and research are translated into innovation opportunities for end users, including businesses, civil society and governments. These investments are critical for translating ground-breaking research work into social and economic growth, vibrant communities, and for advancing national priorities.

Building a strong, inclusive economy and combatting global challenges requires that Canada's researchers collaborate on the global stage. Canada's economic partners are looking to work with internationally recognized Canadian researchers as research-driven innovations continue to catalyze the global economy. Canada needs to build a strategic, national approach to international research collaboration that would allow it to build relationships with target countries, improve its access to strategic markets, and pool resources and expertise with trusted partners to advance its interests globally.



## Building modern campuses

Universities contribute in many ways to Canada's future—from educating the next generation of leaders, to building inclusive and accessible campuses, and reducing the carbon footprint of their own institutions. Today, universities across the country have at least \$7 billion in new infrastructure needs and more than \$17 billion worth of deferred maintenance projects. Universities need multi-year sustained infrastructure investments that allow them to keep pace with Canadian growth.

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Canada needs to invest in green, digital, accessible and cyber infrastructure to build safe, digitally-enabled and environmentally sustainable university campuses and learning environments.

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Universities are partners in the fight against climate change and in Canada's commitments to meeting our Paris Agreement targets. Universities are reducing their environmental impact through energy efficient retrofits to existing buildings and ensuring new buildings are built to the highest environmental standards. These projects bring benefits to the air quality in their communities and reduce energy costs for public institutions. Federal support can help prioritize these investments and accelerate reductions in carbon emissions.

The transition to digital education in most regions of the country highlighted the digital divide in Canada. For so many Canadians—particularly Indigenous peoples and people with disabilities—digital access and infrastructure is a question of basic equity. Universities provide opportunities for lifelong learning, advanced education and community engagement. Digital investments ensure these opportunities are more broadly available to as many Canadians as possible, wherever they might be. Universities can act as learning hubs for those learners and communities without reliable, affordable high-speed internet. Investments in digital infrastructure ensure universities create the maximum social and economic benefit across Canada.

Digital infrastructure is no substitute to meeting the on-campus needs of learners. Universities are working to modify the built environment of their campuses to be more accessible and inclusive environments for all Canadians. As learners of all ages and abilities look to universities for education opportunities, our institutions are working to retrofit campuses by including new ramps, outfitting lecture halls with hearing loops, posting accessible signage and installing new elevators.

Strategic support is also needed to ensure university cybersecurity infrastructure is state of the art and that Canadian science is protected. Increased cybersecurity investment is essential to conducting research in today's dynamic geopolitical environment. Not only will these investments help protect research from threats, they will also secure university-business collaborations—ensuring Canada's research investments benefit all Canadians.