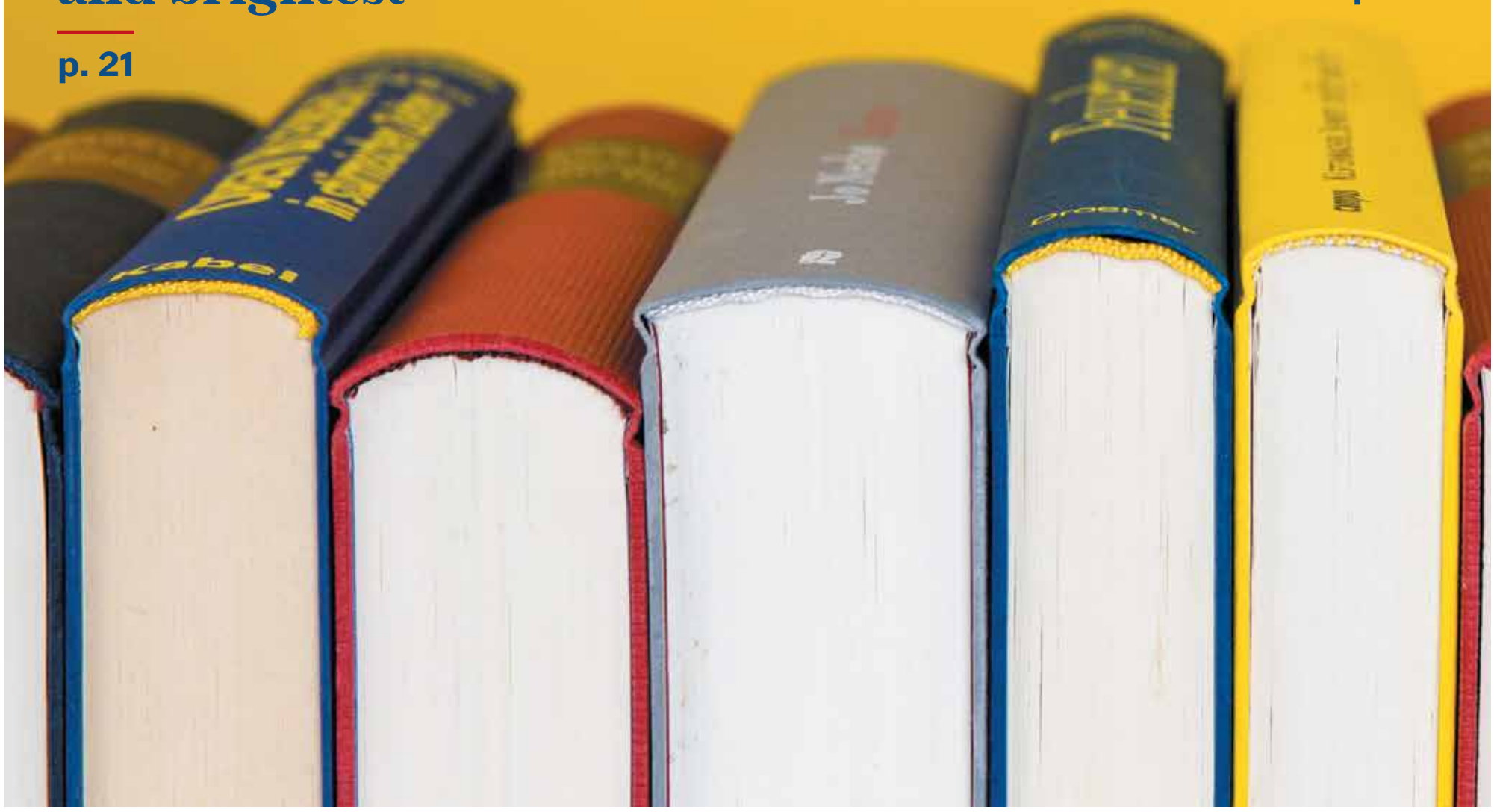
UNIVERSITY AND COLLEGE RESEARCH



U.S. war on science has 'damaged' Canada's research ecosystem, but also offers opportunity, say university advocates

The gutting of science funding in the U.S. hurts research everywhere, including in Canada, says Gabriel Miller, president and CEO of Universities Canada.

BY JESSE CNOCKAERT

Canada has an opportunity to pick up the slack in North America's research ecosystem in the wake of sharp drops in support for sciences in the United States, but doing so will require protecting funding measures and streamlining a "broken" international student system, according to university advocates.

"The Americans are a scientific superpower, so to see their science funding gutted means you're going to hurt research everywhere, and it's been damaging to research in Canada, as well. Having said that, it's not the most important problem facing Canadian scientists," said Gabriel Miller, president and CEO of Universities Canada. "The [Canadian] government has outlined an economic agenda that hinges on the country's ability to produce new ideas and very talented people, but right now there's no strategy on the table to do that."

Recent cuts to science and research in the U.S. under the administration of President Donald Trump have also been terrible for Canada and the rest of the world due to losses in cross-border collaboration opportunities or for funding from American agencies, according to Miller.

In April 2025, preliminary budget documents obtained by *The Washington Post* indicated the Trump administration's intent to reduce funding for a variety of science agencies for the fiscal year starting on Oct. 1, 2025. This includes the Centers for Disease Control and Prevention, with a proposed 44-per-cent budget cut, or a reduction in funding from US$9.2-billion to US$5.2-billion; and the National Institute of Health, with a proposed budget cut of roughly 40 per cent, or a drop from US$47-billion to US$27-billion.

In a July 9 press release, Industry Minister Mélanie Joly said Canada's researchers 'aren't just imagining the future—they're building it,' with work covering topics such as pandemic readiness and cutting-edge technology. *The Hill Times photograph by Andrew Meade*

Gabriel Miller, president and CEO of Universities Canada, says, 'when a player as big as the United States decides that it's going to take its toys and go home, that inevitably means that the opportunities for Canadian researchers are going to be more limited.' *Photograph courtesy of Universities Canada*

Trump's budget request for fiscal year 2026 also includes major cuts to the National Science Foundation (NSF), from US$9-billion to US$4.1-billion, according to *Forbes*.

More than 1,500 NSF grants have been terminated since April 18, according to Grant Witness, a non-profit organization that tracks federally funded research grants under the Trump administration.

As the war on science unfolds in the U.S., Miller said that Canada's universities have spent the last five months trying to adapt. About 60 per cent of Canadian researchers publish their work as part of collaborative, international research teams, he said.

"We were getting reports from universities across the country where researchers had just received letters from agencies in the United States saying, 'due to decisions by the Trump administration we're no longer able to honour the grant or partnership that we had with your research team.' That has a financial consequence for different research teams, but it also has a major implication, frankly, for our ability to contribute to scientific progress," said Miller. "A huge amount of what we do in science and research is done in tandem with researchers in other countries, and when a player as big as the United States decides that it's going to take its toys and go home, that inevitably means that the opportunities for Canadian researchers are going to be more limited."

Miller said that the next couple of months—including the yet-to-be-released federal budget expected on Nov. 4—will be "defining" for science and research in Canada. He argued that Canada can take advantage of the U.S. surrendering its position as a global scientific leader, but that involves protecting existing investments in science and research. Miller said that investments in science and research announced in 2024 mustn't end up on the chopping block in the coming budget.

In Canada's April 2024 federal budget, significant investments were proposed over five years to support new scientific talent, including $825-million for enhanced scholarships for master's and doctoral students and postdoctoral fellows, and an additional $1.8-billion for federal granting councils to boost core research grants for Canadian researchers.

Also in the vein of improving Canada's research ecosystem, on July 9, Industry Minister Mélanie Joly (Ahuntsic–Cartierville, Que.) and Health Minister Marjorie Michel (Papineau, Que.) announced more than $1.3-billion in funding to support more than 9,700 researchers and research projects across the country. The funding includes $365.6-million to 4,761 scholarship and fellowship recipients through the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council of Canada, and the Social Sciences and Humanities Research Council of Canada.

"These researchers aren't just imagining the future—they're building it. Their work covers topics such as pandemic readiness and cutting-edge technology, and it reflects the Government of Canada's commitment to driving innovation, strengthening the economy and tackling the challenges that matter most to Canadians. With this support, we're empowering the talent that will shape a more resilient, inclusive and globally competitive Canada," said Joly in a departmental press release.

Another key measure to support science and research in Canada will involve attracting international students. Miller argued that international students face too long a process in obtaining permits to study in Canada.

"We are hemorrhaging talent right now in Canada, and we're talking about the very people we're going to need to make new energy projects happen, reinvent manufacturing, [and] be a leader in artificial intelligence. We're seeing major drops in the number of graduate students enrolled in computer science. We are losing the people that are going to make the difference between success and failure in the new Canadian economy," he said. "Canada has always had a tough time being competitive when it came to our visa processing system, but that's now a critical national liability because much of the talent who were coming here have turned away from Canada because of a sense that the country—in the last couple of years—has decided we don't want them."

In 2024, Immigration, Refugees, and Citizenship Canada (IRCC) placed a cap on the number of study permit applications that could be accepted for processing as a way to help reduce strain on Canada's housing and health-care systems, among other services. This measure has reduced the number of international students coming to Canada by about 40 per cent, according to the IRCC.

To help international students in coming to Canada, IRCC's 2025–26 Departmental Plan, released in June, outlined an intention to spend $427.2-million under the "core responsibility" of facilitating the entry of people wishing to come to Canada temporarily, including international students and temporary workers.

Robert Asselin, CEO of U15 Canada, told *The Hill Times* that cuts to American granting agencies are "important and consequential," and also provide a lesson for Canada.

"What we're seeing in the U.S. shows the perils of basically self-inflicting wounds going forward on fundamental research that is so important for our future, including, obviously, on vaccines, on everything that the world is dealing with in terms of world-pressing problems," he said. "Hopefully there's a huge lesson for our decision-makers in Canada that this is the wrong way to go, and that, if anything, research should get more support, more funding, because this is how we're going to drive economic and national security."

When asked about how Prime Minister Mark Carney (Nepean, Ont.) is handling science and research in Canada, Asselin, a former Liberal staffer, said Carney's government hasn't yet made an pronouncements in that regard, but the upcoming budget will provide an opportunity to send a "signal and vision."

"I want to see the budget before making comments, but I think, if anything, what's happening in the U.S. should be a huge warning sign for Canada and the future of research, and—most importantly—the talent that we need to build this country and rebuild the economy in light

Continued on page 18

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U.S. war on science has 'damaged' Canada's research ecosystem, but also offers opportunity, say university advocates

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of the crisis that we're going through with the U.S.," he said.

As researchers are potentially driven away from the U.S. due to cuts to science, Canada has an opportunity to draw in that talent, argued Asselin.

"Notwithstanding the investments that were made in the 2024 budget, we're still far behind," said Asselin. "When we compare ourselves to the [Organisation for Economic Co-operation and Development] ... we're quite a laggard still."

In Canada, 14 per cent of people aged 25 to 34 hold a master's or equivalent degree, which is below the OECD average of 16 per cent, although this represents an increase since 2019 when the share was 11 per cent, according to the OECD.

Canada's research and development expenditure as a percentage of its gross domestic product was 1.81 per cent in 2022, placing it below the OECD average of 2.73 per cent for the same year.

Dominique Bérubé, vice-president of research and innovation with McGill University, told *The Hill Times* that American cuts to science and research are damaging the morale among researchers in the U.S.

"What is really changing is the morale, really the morale of the researchers in the United States," she said, adding that interest among U.S. researchers in relocating to Canada is now more obvious.

However, she argued that even as some U.S. researchers consider moving north of the border, Canada doesn't have the resources to be an attractive destination, depending on the field of research. As an example, she said that RNA research in Canada doesn't compare to the U.S.

"McGill has a large scale initiative that has been funded by the Canadian government around RNA, but even that doesn't compare to the investment that the United States can make in such science," she said. "We might see some slowdown in some specific domain. [It] might be an opportunity, [but it] depends if we have the capacity."

Recent actions taken by universities intended to attract global talent to Canada have included the Polaris platform, which is focused on making Quebec a global hub for research talent. Four Quebec universities—McGill, Université Laval, Université de Montréal, and Université de Sherbrooke—formed Polaris in June, and have put together a series of proposed initiatives to help attract talent to the province, such as for Canada to create new research chairs in strategic sectors such as artificial intelligence, health, and biodiversity; and for Canada to offer targeted scholarships to recruit talented PhD students and post-doctoral fellows.

"In these uncertain times, we cannot simply wait to be called upon—we must step up. Our universities are ready to lead," said Bérubé in a McGill press release announcing the launch of Polaris. "We are putting forward bold, well-structured proposals to support the entire research ecosystem."

jcnockaert@hilltimes.com
The Hill Times

Canadian universities statistics


Image courtesy of Pixabay

- Universities performed $17-billion in research and development in 2023, accounting for 35 per cent of total Canadian research and development.
- University research institutes issued more than 272 patents in 2022.
- Universities welcomed approximately 1.16 million full-time, and 421,000 part-time students to campuses in fall 2023.
- There are more than 7,000 climate researchers at Canadian universities, and more than 70 climate-related research centres and institutes are spread across Canada.
- In 2024, the University of Toronto, University of British Columbia, and McGill University led in scientific publications, with increases in medical, engineering, and computer science research, highlighting a focus on health, technology, and transdisciplinary studies. The University of Toronto maintained its top position with 19,960 publications.

Source: Universities Canada and the Canadian Science Policy Centre

Higher education is under pressure, and we're up to the challenge

A Canada without our excellent universities would look very different. Now more than ever, we need to come together as a country to strengthen these invaluable institutions.

Jeff Hennessy

Opinion

This is a crisis moment in Canadian higher education. I don't say that to alarm. I write this as a cautionary tale.

I am very concerned about the public perception of the value of universities in this country.

We are falsely seen by many as bloated, purely public institutions, sitting on hundreds of millions of dollars of discretionary funds, paying no taxes, selling expensive and useless degrees, and offering little value to our communities and our country. This is a major problem. Somehow, there is a disconnect between what we do and the skilled labour force, the groundbreaking research, and the educated citizenry that help to keep a country like Canada the envy of the world.

We must change this.

I do not blame governments for placing us lower on their priority lists than other publicly supported organizations. Governments must respond to what the public needs and desires, and the value proposition for universities in Canada is lower than ever.

Like so many Canadian universities, Acadia offers excellent programs, brilliant faculty and staff, an ideal community setting, a fantastic research program, and is the major employer in the region. Like so many universities in this country, we have plans for growth.

Yet post-secondary institutions are facing budget pressures due to inflationary pressures, limited increases to provincial grants and student tuition, and the sudden change in federal policy around international student study permits.

Such is the state of the sector right now. Our operating funds come mainly from student fees and an annual grant from the provincial government, neither of which are increasing at the rate of our expenses. I have no doubt there will be hard decisions in our future.

One such decision we had to make at Acadia earlier this year was to close our swimming pool. Despite millions of dollars in maintenance over almost 60 years, the pool was at the end of its lifecycle, and we could no longer justify the financial impact of operating it.

In terms of pure fiscal analysis, there was no other option. Given all the challenges facing Canadian universities these days, the decision of whether to close a pool might seem less weighty than some other conundrums, but the public response revealed the contempt for universities that pervades in the public mindset. Some saw this for the prudent fiscal decision it was and respected the attention to our primary mission, but many others viewed this as a betrayal and a further example of how universities are not living up to their public promise.

What are some solutions?

We need to listen to students to determine their needs in navigating a complex and hostile world. We need to work with governments and our communities to add value to people's lives. We need to communicate all the wonderful things we are doing. And we need champions: alumni, employers, politicians, prominent leaders, and allies. We need to change the messaging on the value of universities. This is a call for all who care about maintaining a vital and effective higher-education system in Canada: we need your voices.

Is change needed? Of course. Universities are often slow to adapt to the changing needs of our society, but we do evolve. We must accelerate. And, yes, it will involve more hard decisions. Let there be no doubt: we are up to the challenge.

As an example, Acadia just completed an amicable and positive collective bargaining process. We focused on changes that will improve working conditions, streamline processes, enhance equity, and support our people through fair wages while ensuring financial sustainability. This was a joint achievement in every facet, and both parties brought a strong commitment to building relationships and moving forward.

As institutions, we can engage our campus communities to think differently about revenue and expenditures, and all areas of the university—from faculty to non-academic units—can contribute. We must preserve the excellent foundations of our universities as we innovate to prepare our students for a complex future.

Canadians also need to value their universities for our educational and research mission. A Canada without our excellent universities would look very different. Now more than ever, we need to come together as a country to strengthen these invaluable institutions.

Dr. Jeff Hennessy is president and vice-chancellor of Acadia University.

The Hill Times


Students walk through the University of Ottawa campus. Post-secondary institutions are facing budget pressures due to inflationary pressures, limited increases to provincial grants and student tuition, and the sudden change in federal policy around international student study permits, writes Jeff Hennessy. *The Hill Times photograph by Andrew Meade*

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UNIVERSITY & COLLEGE RESEARCH Policy Briefing

Research is a major Canadian project

Co-ordinated research and immigration policies can ensure that today's transformative initiatives deliver long-term dividends for Canadians.

Leah Cowen

Opinion

Discovery research and research commercialization provide the foundation for realizing the full economic potential of Canada's infrastructure investments, writes Leah Cowen. *Photograph courtesy of Pixabay*

This month marked the announcement of the first group of major national infrastructure projects—initiatives designed to transform the national economy at the speed and scale required to thrive in a changing global economy. University research is at the core of each project.

From supply-chain optimization to critical-minerals processing and low-carbon energy, commercialized university research is a pillar of economic transformation. This research ecosystem may not be part of the visible physical projects it enables, but it ensures that tomorrow's bricks and mortar are built with smarter systems, stronger materials, and cleaner technologies. As we look to a nation-wide effort to create the conditions for Canada's economic success, two policy commitments are key to unleashing the tremendous potential of this country's research ecosystem: sustained research funding, and increased ability to train and attract the people who catalyze discovery and innovation and bring nation-changing projects to fruition.

The benefit of investing in this ecosystem is evident in the first projects announced. Artificial intelligence improves supply-chain management, including at the expanded Port of Montreal. AI can reduce the cost of mineral exploration, and improve safety through measures such as predictive maintenance. New materials can improve battery storage, while AI can predict and compensate for surges in energy demand, improving electrical grid resilience. And as Canada turns renewed attention to the Arctic, technology and community consultation will have to make equal contributions to achieving sovereignty and economic development.

Industry recognizes that researchers and learners generate the ideas and products needed to address emerging challenges. At the University of Toronto (UofT), companies like LG, Siemens, Vale Minerals, and Nissan are among more than 600 industry partners advancing progress across energy, supply chains, mining, and the auto industry. UofT's leadership in AI, regenerative medicine, and quantum computing makes it one of the world's most productive research institutions, contributing breakthroughs that shape entire industries.

Combining AI and life sciences will lead to a new era of health-care breakthroughs. By applying machine learning and AI to Canada's large health datasets, we can grow our global share of clinical trials, drive R&D investment, and improve patient care. Greater data integration can accelerate advances such as the early detection of emergent medical conditions, development of diagnostic tests, and the acceleration of drug discovery and development. We have the potential to scale health data infrastructure that will allow us to unlock health data for discovery while maintaining security, privacy, and public trust.

Discovery research and research commercialization provide the foundation for realizing the full economic potential of Canada's infrastructure investments. This focus on innovation *now* will galvanize the next generation of innovators. It is key to attracting and retaining the talent who foster discoveries that can make Canada a global leader, from semaglutides to neural networks to self-driving labs.

Scholars and innovators fuel the most research-intensive sectors of the economy, and support export competitiveness. Canada can do more to align industrial and talent policies. The time to adapt mechanisms to ease the entry of the best and brightest into the country is now. Other countries are acting decisively. Take, for example, Australia's National Innovation Visa, designed to attract exceptionally talented researchers regardless of age while prioritizing faster processing for those under the age of 55. Or the United Kingdom's Global Talent Visa, which has no upper age limit and recognizes outstanding researchers with academic appointments or national awards.

In Canada, encouraging signs are emerging. This summer, the federal government announced it is considering prioritizing scientists and researchers for permanent residence, placing them alongside technology, engineering, and education workers among other priority occupations. Such a step—paired with faster processing times—would make it easier for Canadian universities and industry to compete globally for talent.

As provinces and the federal government invest billions of dollars in countering tariffs and launch ambitious nation-building projects, co-ordinated research and immigration policies can ensure that today's transformative initiatives deliver long-term dividends for Canadians.

As vice-president of research and innovation, and strategic initiatives, professor Leah Cowen leads the implementation of strategies that advance research and innovation at the University of Toronto, which is home to more than 1,500 venture-backed companies and is the fifth most-cited university in the world.

The Hill Times

A new deal for post-secondary education and research

Finding a solution to the financial crisis our colleges and universities face requires action by both the federal and provincial governments.

David Robinson

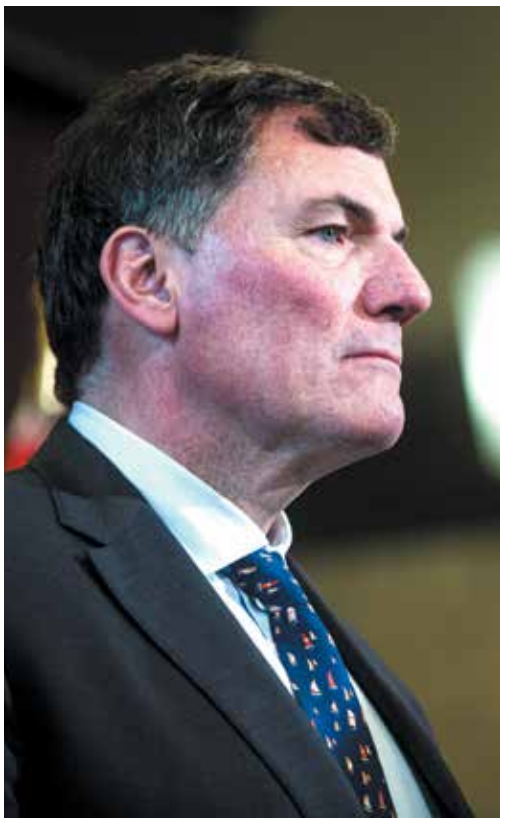
Opinion

As post-secondary students across the country head back to class, they face increasing uncertainty. Struggling with years of insufficient core funding and falling international student enrolments, many of our universities and colleges are in trouble.

Enrolment suspensions, program cuts and layoffs have already affected dozens of institutions. Provincial tuition freezes and caps might soon be lifted.

This is weakening our educational and scientific capacity at a time we can ill afford to do so.

South of the border, the Trump administration in the United States has launched, paused, and then re-launched a mutually destructive trade war against Canada and Mexico. It has upended long-established geopolitical alliances, and it is openly attacking the independence and integrity of the scientific community and higher education.



Canada-U.S. Trade, Internal Trade, Intergovernmental Affairs, and One Canadian Economy Minister Dominic LeBlanc. The federal government should immediately engage with the provinces to negotiate multilateral funding agreements to strengthen our universities and colleges, writes David Robinson. *The Hill Times photograph by Andrew Meade*

For Canadians, the message is crystal clear: under its current presidency, the U.S. is no longer a reliable economic, diplomatic, or scientific partner. That's why the federal government must step up on all these fronts if we are to build a more resilient Canada.

This must include a new approach to how we fund and support post-secondary education and research.

Finding a solution to the financial crisis our colleges and universities face requires action by both the federal and provincial governments. Now is not the time for jurisdictional bickering about who is responsible for creating this mess.

What is needed is leadership. The federal government should immediately engage with the provinces to negotiate multilateral funding agreements, as has been done for health care and childcare, to strengthen our universities and colleges, and ensure access, affordability, and high quality.

In tandem, the government should invest in a made-in-Canada research and science policy to counteract the anti-science and anti-education actions of the Trump administration. A lot has been written about what is increasingly looking like an existential threat to higher education and research south of the border. But Trump's actions aren't just confined to the U.S.

Earlier this year, I was contacted by Canadian researchers whose projects are funded wholly or in part by American federal agencies. They had been sent a lengthy questionnaire to confirm that their work does not include a climate or "environmental justice" component, a "gender ideology" component, or diversity, equity, and inclusion elements. The implication is that it doesn't matter if your research is scientifically important; if it doesn't conform to Trump's partisan political ideology, you're not going to be funded.

The Trump presidency poses many dangerous threats both domestically and internationally. But it also provides new opportunities for Canada to lead. Insulating ourselves from the Trump presidency means not just fighting the effects of tariffs and playing a stronger role on the global stage.

We also need to ensure that Canada is better placed to make up for the vacuum left by the U.S.'s abdication of its role as the world's scientific leader. To achieve this, we urgently need a new deal for post-secondary education and research.

David Robinson is the executive director of the Canadian Association of University Teachers.

The Hill Times

Policy Briefing **UNIVERSITY & COLLEGE RESEARCH**

Rebuilding our immigration system to attract the best and brightest

The decision last year to include graduate students in the federal study permit cap poses a serious limitation on this country's capacity to conduct research.

Daniel Jutras

Opinion

In this unprecedented moment when our sovereignty and economic security are under threat, now is the time to deliver an immigration system that can restore Canada's reputation and welcome the best and brightest talent from around the world. Doing so will be key for the health of our research ecosystem, and a central pillar towards building a strong, self-dependent, and resilient country.

Over the last two years, Canada's international student system has experienced profoundly disruptive changes. The fallout from these far-reaching reforms continues to be felt. While much of the attention has focused on the impact this is having on temporary resident numbers, post-secondary finances, and this country's reputation in the world, it also holds troubling repercussions for university research and the longstanding success of our research ecosystem.

That's because across Canada's leading research universities, talented graduate students—acting as research assistants, technicians, or support staff—are a foundational part of the success of any research that is conducted at our universities. The decision last year to include graduate students in the federal study permit cap now poses a serious limitation on this country's capacity to conduct research. The cap on graduate students has effectively become a cap on innovation.

U15 universities did not experience the rapid increases in international student numbers that prompted federal intervention; over the last decade, the share of international students across Canada's leading research universities has remained relatively static at 20 per cent. However, that has never been the case at the graduate level. By its very nature, the fierce international competition for talent and the mobility of top researchers have made graduate education highly international. Around 40 per cent of all PhD students in Canada are international students.

Our ability to attract and retain the best and brightest minds from around the world has provided a crucial talent pipeline for the country, and underpinned the capacity of the research ecosystem to compete internationally. Canada's reputation for world-class universities, a welcoming atmosphere, and excellent quality of life has been central to our success in building a vibrant, prosperous, and advanced country. At a time when this competition is fiercer than ever, the signal the graduate cap has sent to prospective students abroad has been significant.

It is being felt across the research ecosystem, especially at U15 universities where our institutions compete with some of the best in the world for a limited pool of talent. As a result, we are seeing graduate enrolment decline notably—down 4.4 per cent in a single year at U15 universities, and by as much as 20 per cent in some of the most in-demand fields. At Université de Montréal this fall, the drop has been 14 per cent. Without intervention from the new government, we risk long-term damage to our talent pipeline.

Every day on the campuses of Canada's leading research universities, graduate students are hard at work, supporting research projects, assisting senior researchers and developing their research skills with hands-on experience. These talented young researchers have the ideas, enthusiasm, and expertise to power innovations and offer the solutions that Canadians need for the future. We must continue to welcome the best and brightest graduate students if we want to build a strong and resilient country.

I see it across the Université de Montréal where graduate students in computer sciences have helped make Montreal a world-leader in artificial intelligence, attracting promising young talent to our university and fostering a thriving start-up ecosystem in the city, all while equipping Canada with the knowledge and understanding it will need to navigate the complexities of this digital transformation safely.

Canada's new federal government has signalled it shares this vision for a well-managed immigration system, with an emphasis on excellence and modest growth. After all, the prime minister's recent mandate letter to his cabinet committed to "attracting the best talent in the world to help build our economy." This is a positive path forward for how we rebuild Canada's immigration system.

However, to achieve this vision, it is vital that the government reconsider its approach. Now that numbers have been brought under control, it must pursue a more strategic set of policies that does not cap graduate students, promotes excellence, and identifies the high-quality talent we want to attract to Canada. That is the pathway to the managed, quality focused system that Canadians have long supported.

Daniel Jutras is chair of U15 Canada and rector of the Université de Montreal.
The Hill Times

Canada's next era of nation-building depends on AI and quantum innovation

The upcoming budget will be critical in charting this country's course in technological growth.

Gabriel Miller

Opinion

Prime Minister Mark Carney's decision to fast-track flagship national projects—from LNG in northern British Columbia, to nuclear power in Ontario—signals a bold push to reshape Canada's economic backbone. But bricks and steel aren't enough. Our prosperity now hinges on mastering the artificial intelligence and quantum revolutions already reshaping every industry, including these very projects.

This work is already underway at Canadian universities. In labs across the country, students, researchers, and professors are driving breakthroughs in secure quantum communications, advanced materials, and AI applications for health care and infrastructure. They're building the next generation of cybersecurity researchers because today's tools won't stand up to AI and quantum-powered threats. These are innovations with direct relevance to Canada's priorities: safeguarding critical systems, modernizing the grid, and improving patient care.

Universities across the country are leading in these key sectors. At the Université de Sherbrooke, the Institut quantique is advancing internationally recognized research in quantum computing, materials, and communications. The University of Waterloo continues to lead in quantum science and computer engineering, while the University of Toronto's Vector Institute anchors Canada's AI ecosystem.

In B.C., the University of British Columbia, Simon Fraser University, and the University of Victoria each pursue distinct strengths in quantum computing and algorithms, and collaborate through Quantum BC to connect their expertise, develop talent, and engage global industry partners.

The Alberta Machine Intelligence Institute, headquartered at the University of Alberta and working with the Universities of Calgary and Lethbridge, is pioneering applications of AI across sectors. In Quebec, Mila—based at Université de Montréal, and uniting researchers from McGill University, Polytechnique Montréal, and HEC Montréal—is one of the world's most influential AI institutes.

In Atlantic Canada, the University of New Brunswick's Quantum Sensing & Ultracold Matter Lab is advancing navigation technologies for environments where GPS fails, with potential defence applications.

Together, these stories show how universities are generating breakthroughs that position Canada to lead in tomorrow's innovations.

However, leadership is not guaranteed. The United States, the European Union, and China are investing in AI and quantum at a scale Canada has yet to match. In the absence of a Canadian initiative, a competition for U.S. Defense Advanced Research Projects Agency funds has identified that three of the 18 companies that have a near-term path to building quantum computers are Canadian, including Photonics, which spun out of Simon Fraser University, and Nord Quantique out of Université de Sherbrooke. They are ensuring stable funding, attracting global talent, and linking innovation directly to economic and security strategies.

The consequences are real if we don't keep up—homegrown talent will move abroad, and our domestic capacity will weaken, leaving Canada reliant on foreign technologies to power our economy and defend our infrastructure. Short-term programs and shifting rules on immigration undermine our reputation and make it harder to compete for the world's best minds.

The upcoming budget will be critical in charting Canada's course in technological growth. As the federal government weighs research cuts in its spending review, nearly all the investments promised just last year now hang in the balance. Slashing funding would drive researchers away and undercut Canada's efforts to attract top talent and seize the opportunity of the U.S. brain drain. Those goals can't be achieved by pulling support from Canadian researchers.

A commitment to stable research funding would provide universities with the foundation needed to plan ahead and deliver results. At the same time, stronger ties with industry and government would speed the path from campus discovery to national impact. Establishing new Industrial and Quantum Research Chairs could serve as a way to attract talent while creating stronger ties between university and Canadian industry.

As an early mover on quantum, Canada is well positioned to lead on creating new industries and technologies. Let's not squander it.

AI and quantum are the next frontier. Investing in Canada's universities means securing our economy, strengthening defence, and shaping future infrastructure. The expertise is here—all it needs is the commitment to succeed.

Gabriel Miller is the president and CEO of Universities Canada. He is an experienced not-for-profit leader who has built an extensive track record in member relations, advocacy, stakeholder engagement, and public policy development over his 22-year career.

The Hill Times

Trust universities to lead Canada's next wave of innovation

The talent, infrastructure, and ideas are here. What's needed now is federal leadership that matches the scale of our ambitions.

Julie St-Pierre

Opinion

Canada's next global breakthrough might already be growing in a university lab, but will it have the support it needs to thrive?

From AI-driven health diagnostics to climate-resilient agriculture, Canadian universities are not standing by—we are leading the charge. We're driving the next wave of innovation, and now is the time to spotlight our successes and affirm the role of federal investment in securing Canada's global competitiveness.

Universities are not just educational institutions, they are national assets. They are where ideas are born, tested, and translated into real-world impact. Sustained federal support ensures that these ideas don't stall in the lab, but reach the communities, industries, and systems that need them most.

At the University of Ottawa, we're building the infrastructure and talent base that powers tomorrow's breakthroughs. Through core facilities and cross-disciplinary research clusters, we're tackling today's challenges—housing, homelessness, climate change—while shaping the models that will guide Canada's economy and public policy for decades to come.

This foundation is already attracting top talent—a strength the federal government amplifies through programs like the Canada Excellence Research Chairs and the Canada First Research Excellence Fund (CFREF). These initiatives build on what universities have created, ensuring Canada continues to punch above its weight in global innovation.

One such CFREF-funded initiative is the Brain-Heart Interconnectome (BHI), a flagship program that unites researchers in neuroscience, cardiology, mental health, and data science to explore the intricate connections between the brain, heart, and mind. With more than 45 academic, government, and industry partners, BHI is already shaping new approaches to diagnostics and care, and exemplifies how federal investment can catalyze bold, cross-sectoral research with real-world health implications.

Another federally funded success is the Canadian Pandemic Preparedness Hub (CP2H), co-led by uOttawa, The Ottawa Hospital, and McMaster University. Supported through the Canada Biomedical Research Fund and the Biosciences Research Infrastructure Fund, CP2H is building Canada's capacity in vaccine development, infectious disease research, and biomanufacturing. It connects universities, hospitals, industry, and government to prepare Canada for future health emergencies, and serves as a blueprint for how academic research can reinforce public health infrastructure.

Complementing these national efforts is the Advanced Medical Research Centre (AMRC),a $300-million, seven-storey facility currently under construction at uOttawa's Faculty of Medicine. Supported by investments from the Government of Ontario, the AMRC will feature cutting-edge wet labs and house the Ottawa Health Innovation Hub, which supports biotech startups and accelerates the translation of discoveries into therapies and technologies.

The AMRC is more than a building, it is a launchpad for Canada's next generation of health innovation. And it's a regional example of how provincial support can reinforce and amplify federally funded innovation ecosystems. By aligning provincial and federal support, we can ensure breakthroughs made here in Ottawa ripple across Canada and beyond.

These examples prove the model works: when governments back ambitious university-led initiatives, Canada competes—and wins—globally. So, the question isn't whether this approach is effective, but whether we have the vision to scale it—to grow its impact through wider institutional collaboration, and embed it in a long-term national strategy.

Canada doesn't need to imagine this future, we can build it now. The choice is whether to lead or lag. That's why the federal government must champion universities as key partners in shaping Canada's future, not only through funding and policy, but through public messaging that builds trust and secures public buy-in.

Let's invest boldly in the innovation ecosystem that begins at our campuses and extends into every corner of society. The talent, infrastructure, and ideas are here. What's needed now is federal leadership that matches the scale of our ambitions, and a national commitment to trust in the power of universities to lead us forward.

Julie St-Pierre is vice-president of research and innovation at the University of Ottawa where she leads strategic initiatives to foster research excellence, support infrastructure, and strengthen partnerships that benefit society at the local, national and international levels.

The Hill Times

Policy Briefing **UNIVERSITY & COLLEGE RESEARCH**

More to be done for Canada to become a leader in open science, research, and innovation

The federal government must do more to seed sustainable, community-driven approaches to open science.

Susan Haigh

Opinion

University libraries have long been recognized as essential hubs for study, scholarly resources, and expert guidance, but their role today extends far beyond these traditional functions. Across Canada, academic libraries are driving the creation, sharing, preservation, and application of scientific knowledge through a commitment to open science—a global movement dedicated to making research data, publications, software, and methods freely accessible and reusable.

To support this movement, academic libraries engage in an open and networked research ecosystem, enabling global visibility, use, and impact of Canadian scholarship. With campus partners, libraries support the implementation of government policies such as the Tri-Agency Open Access Policy on Publications and the Tri-Agency Research Data Management Policy, and they actively engage in international networks, allowing our community to learn from key developments in other countries.

Co-operative, innovative, and technology-enabled national approaches keep Canadian research strong during difficult times, like now, when funding cuts and policy uncertainties challenge the post-secondary sector. The Canadian Research Knowledge Network, the Scholars Portal at the University of Toronto, and the Research Data Management arm of the Digital Research Alliance of Canada each illustrate how nation-wide collaboration leads to innovation, improved practice, and cost efficiency. While Canadian academic libraries vary in size and serve communities with different research strengths, these cross-cutting infrastructure organizations have proven that pooling our expertise and resources creates capacity and outcomes impossible to attain on an individual institutional basis.

While our joint efforts have seen success, there is more to be done for Canada to become a leader in open science, research, and innovation.

Recently, Canadian stakeholders in the research community have articulated a national strategy for persistent identifiers. Persistent identifiers (PIDs) are long-lasting digital links to research "entities," which can be a journal article, a scholar, or an institution. Broad adoption of persistent identifiers—ORCID iDs for researchers, and digital object identifiers for research outputs—is key to ensuring long-term access, streamlining administrative processes, and clarifying research impact for institutions and funders. PIDs enable systems to connect and function as an ecosystem.

Through university and government investment, Canada has been building strength in open journal publishing. A key example is the innovative Coalition Publica, which unites two internationally-recognized Canadian platforms: the Open Journal Systems, developed by the Public Knowledge Project at Simon Fraser University; and Érudit, a publishing platform created by Université de Montréal, Université Laval, and Université du Québec à Montréal. Such non-commercial, open source infrastructure—combined with a vibrant pan-Canadian community of practice and continued government and institutional backing—will allow domestic open access publishing to gain a stronger foothold across all domains, and in both official languages.

Additionally, universities are supporting greater dissemination of research outputs through nation-wide, bilingual repository infrastructure. Three library-led services are driving this forward: the Federated Research Data Repository, a curated, general-purpose repository custom built for large datasets; Borealis, a multidisciplinary, secure Dataverse service used by 75 institutions across the country for preserving and sharing smaller datasets; and Scholaris, a new initiative to provide common infrastructure, technical expertise, and community support for institutional repositories of research publications.

These national strategies and services demonstrate that collective approaches reduce costs to our individual universities, yet build a strong, integrated, and resilient research ecosystem. To achieve their potential at scale, however, requires real and ongoing investment.

The federal government must do more to seed sustainable, community-driven approaches to open science. Many countries, especially in Europe, have developed national open science strategies and established co-ordinating bodies to oversee targeted programs to advance their science policy goals.

Canada, too, must invest in the promotion and co-ordination of open science, and in the sustained provision of national research infrastructure—and research libraries play a strategic role in advancing Canada's scientific sovereignty.

Susan Haigh is executive director of the Canadian Association of Research Libraries, an association of Canada's 31 largest research libraries.

The Hill Times

Our immigration system is locking out some top global researchers

We're losing out on global talent at a time when Canada has a golden opportunity.

Alan Shepard

Opinion

Immigration Minister Lena Metlege Diab. A nimble immigration process that prioritizes much-needed expertise will signal to the world that Canada welcomes top talent, writes Alan Shepard. *The Hill Times photograph by Andrew Meade*

Nearly two years ago, Western University recruited Dr. Robyn Klein as the Canada Excellence Research Chair (CERC) in Neurovirology and Neuroimmunology.

She earned her MD and PhD from Albert Einstein College of Medicine in New York, completed her clinical and postdoctoral training at Harvard, and is one of the world's top neuroscientists. She is spearheading a research program to understand how infectious diseases affect the brain—a field she essentially created.

Klein moved her career and full research program to Canada from Washington University School of Medicine in St. Louis, Mo. Next-level Canadian funding sources like the $8-million Canada Excellence Research Chairs Program were key selling points in her recruitment. (I'm discussing her case with her permission.)

But sometimes the right and left hands of government are not in sync. Having awarded Klein a CERC, it has now paused her pathway to permanent residency. Why? Her age.

Klein hasn't been able to fully put down roots because of Canada's complex permanent residency system, including recent changes for foreign nationals who must wait to receive an invitation to apply.

In 2024, the federal government slashed permanent residency targets by more than 20 per cent, and declared more than 40 per cent of new permanent residents would be drawn from the international labour pool already in the country.

And permanent residency assessment favours younger immigrants—aged 20 to 29—who are seen as better positioned to fuel Canada's long-term economy.

Researchers are just building their careers in their 20s, and few, if any, would be strong candidates for a CERC at that age—perhaps Albert Einstein excepted. Established researchers are often 40-plus years old, by which time they receive very few points for age in the comprehensive ranking system used to assess permanent residency applications.

After 45, there are no points for age. Apparently not even for the highly specialized experts our economy needs.

Without permanent residency, outstanding researchers like Klein are inhibited from fully committing to Canada in ways both intangible and tangible—buying a home is out of reach due to augmented taxes up to 25 per cent for non-residents, for example. Renewing work permits is tedious and time-consuming, and can prevent participation in international professional activities because of the long processing times.

Just being on a work permit, without a sense of permanency, produces uncertainty. And all of this is very stressful—the opposite of the welcome we need to send to attract senior talent from around the world.

Multiply that situation for hundreds of researchers across the country, and we've got a serious problem.

We're losing out on global talent at a time when Canada has a golden opportunity.

After drastic cuts to American funding agencies and perceived government interference in university operations in the United States, top academics—both in the U.S., and worldwide—are looking elsewhere.

For many, Canada is a preferred destination.

The federal government wants to align our immigration levels with current social and physical infrastructure. That makes good sense.

But we must offer more than a lottery system for senior scientists, engineers, physicians, and other top researchers.

We need to make it more straightforward and less uncertain to recruit global research leaders—those who will help drive our efforts to innovate across so many fields.

A nimble immigration process that prioritizes much-needed expertise will signal to the world that Canada welcomes top talent. Lifting the cap on international graduate students would also be a winning idea.

Otherwise, we're spinning our wheels when the stakes for Canada's future couldn't be higher.

Alan Shepard is the president of Western University. He immigrated to Canada from Texas in 2002, and is a proud Canadian citizen.

The Hill Times

UNIVERSITY & COLLEGE RESEARCH Policy Briefing

A building on the University of Ottawa campus. Continuous financial support in university and college research is vital, write Dr. Thomas Pulinilkunnil, Ecaterina Cozma, and Dr. Walid A. Houry. *The Hill Times photograph by Andrew Meade*

The unsung guardians of Canadian dominion, innovation, and prosperity

To fully leverage the capabilities of academic institutions, Canada must adopt a future-oriented research approach by aligning research priorities with national interests.

Thomas Pulinilkunnil, Ecaterina Cozma & Walid A. Houry

Opinion

Canadian universities and colleges influence national priorities; however, their contributions are frequently undervalued.

These institutions serve as hubs for research, innovation, job creation, talent cultivation, and social transformation, thereby fulfilling their educational missions. The effective execution of their research mandates fortifies Canada's strength, independence, and progressiveness. With $17-billion invested in R&D in 2023, Canadian universities accounted for 35 per cent of the national total.

Research-intensive academic institutions—beyond university campuses—are discovering breakthroughs to tackle real-world issues, progressing in life sciences, health care, quantum computing, net-zero energy, and artificial intelligence. Research conducted in universities and colleges also plays a crucial role in the non-profit sector by tackling critical health and social challenges, thereby improving the quality of life for Canadians and strengthening the nation's social cohesion. As of 2022, Canadian universities and research institutions had supported 875 startups and filed 272 patents.

With the complex global issues that the country faces, improving research capabilities at Canadian universities and colleges is necessary. Research strides will bolster our self-sufficiency and help effectively confront future problems, including natural resource disputes, climate change, and trade barriers.

Nonetheless, academic institutions continue to face persistent challenges in undertaking and sustaining research, including federal restrictions on international students, domestic tuition caps, and sluggish tri-council grant funding increases. The current financial crisis has compelled universities and colleges across the country to implement hiring freezes, decrease staff, downsize research, discontinue student services, limit programs in essential sectors, and, in certain instances, close campuses. Funding research at the university and college levels is a foundational element that drives academic innovation, enabling institutions to conduct impactful research, develop infrastructure, advance the economy, and foster collaboration for the benefit of society.

However, innovation does not occur in isolation; it originates from people. Continuous financial support in university and college research is vital, not just for the advancement of research initiatives and infrastructure, but also for nurturing and developing talent.

Today's trainee researchers are tomorrow's leaders, safeguarding the Canadian research ecosystem. Universities and colleges prepare the next wave of intellectuals, innovators, and future leaders. Continued funding of university and college research guarantees a strong pipeline of highly qualified personnel with hands-on research opportunities, fostering innovation and equipping students with the competencies necessary to compete and collaborate in a rapidly evolving international job market, thereby driving economic growth.

Without adequate research funding for trainees and early-career researchers, Canada risks diminishing its global leadership in research. Indeed, students, faculty, and academic institutions are demanding that provincial and federal governments invest in post-secondary education and research aggressively by committing to continually increasing research funding for the core budgets of the federal research granting councils.

To fully leverage the capabilities of academic institutions, Canada must adopt a future-oriented research approach by aligning research priorities with national interests. This involves harnessing the entire range of scholarly expertise to secure this country's autonomy and foster its role as a global leader in advancing groundbreaking innovations across various fields, including biology, biotechnology, pharmaceuticals, quantum computing, artificial intelligence, and climate change.

In a landscape where knowledge equates to power, the research output from Canada's higher education institutions represents an essential asset and a rich resource.

Academic research institutions are not merely centres of learning, but are launchpads for ideas, solutions, innovation, and progress. The national growth and economy are strengthened by impactful research conducted by universities and colleges; hence, they are a critical stakeholder that deserves a spot at the table discussing the Canadian research ecosystem.

By strategizing sustainable investments in research, universities and colleges can lead innovation, augmenting Canada's standing in global research and development, and fostering inclusive prosperity.

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