

# Canada's universities: Safeguarding our democracy and our sovereignty

In an era of geopolitical uncertainty and rapid technological change, Canada must invest in its security, sovereignty and prosperity. The government's focus on defence, sovereignty and innovation reflects the scale of the challenge the nation is facing. To succeed, Canada must expand its domestic capacity.

Canada's universities are a core part of this capacity, while also driving the talent and discoveries that support long-term economic growth. **In 2025, the higher education sector performed \$19 billion in research and development, accounting for 33 percent of Canada's total gross domestic expenditures on R&D.** This is not a marginal contribution. Canada relies more heavily on its post-secondary sector for research and innovation than any other G7 country.<sup>1</sup> At a time when Canada's business sector continues to underperform on innovation, universities are carrying a disproportionate share of the country's research capacity. Sustaining that capacity is therefore not only a sector issue; it is central to Canada's ability to compete in a knowledge-based global economy.

For decades, Canada's universities have collaborated with government, industry and communities to create new talent pipelines and develop and deploy new technologies that uphold our sovereignty. Today, they offer the country's most scalable platform for rapidly expanding defence talent, innovation and sovereign capability without building new systems from scratch. Deepening these collaborations and alliances will ensure Canada is developing the dual-use technologies that both serve our security and economic needs.



**Universities** **Universités**  
**Canada.** **Canada.**

<sup>1</sup> Higher Education Research and Development (HERD) share of total R&D 2023, OECD

# Context

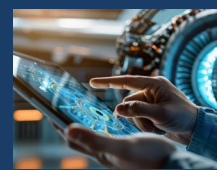
Universities are where technology and society meet. Decades of collaboration with government and industry have advanced capabilities in underwater monitoring, Arctic research, quantum, artificial intelligence, space and biotechnology.

Universities are not only responsible for helping develop and deploy technology, they are also centres of learning, allowing new generations to gain cutting-edge skills and excel in the economy of tomorrow. As integrated research and talent hubs, they span the full innovation continuum from discovery to application. Engaging universities in the implementation of Canada's defence innovation framework will accelerate practical solutions, expand the skills pipeline, support small businesses in defence technology and spread opportunity across regions.

## Real-world impact on Canadians

With the right supports, universities can scale the impactful work already underway. Across Canada, institutions of every size, from various regions and with different missions are contributing to defence-related research, talent development and innovation.

- This includes space and aerospace research at York University, Carleton University and Polytechnique Montréal;
- advances in artificial intelligence, quantum computing, cybersecurity and secure communications at Simon Fraser University, the Royal Military College of Canada and Université de Sherbrooke;
- medical and personnel protection research at McGill University and the University of Regina;
- specialized manufacturing at the University of New Brunswick, Dalhousie University and Memorial University of Newfoundland; and
- uncrewed and autonomous systems research at the University of Alberta and the University of Toronto.



Together, these examples illustrate the breadth, depth and diversity of defence-relevant expertise already embedded in Canada's university sector.

Beyond undertaking vital research, universities are also training the next generation of Canadians who will help uphold our sovereignty. Programs such as information technology and intelligent systems engineering at École de technologie supérieure, mechanical and aeronautical engineering at the Royal Military College of Canada and biomedical and chemical engineering at the University of British Columbia equip students with advanced analytical, digital and technical skills. These competencies support the development of secure communications systems, aerospace defence technologies and innovations in biosecurity and public health preparedness. Yukon University's Northern Environmental and Conservation Studies program provides students with critical expertise in Arctic monitoring, climate science and sustainable resource management, essential knowledge in maintaining Canada's Arctic sovereignty in the face of climate change.

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## Integrating dual-use

To ensure that the Bureau of Research, Engineering and Advanced Leadership in Innovation and Science (BOREALIS), the government's initiative to connect government, academia and industry to accelerate the development of advanced technologies, delivers on defence, economic and social benefits to Canadians, dual-use must be embedded as a core design principle. One of the successes of the U.S. Defense Advances Research Projects Agency (DARPA) is the integration of commercialization frameworks that actively identify civilian applications, provide flexible intellectual property arrangements, enable declassification where appropriate and support spin-offs and technology transition.

Dual-use innovation can address critical defence capability gaps, while simultaneously advancing technologies that support wider national security priorities such as food security, critical infrastructure protection, climate and disaster response, public health preparedness and secure supply chains. This flexibility would also create attractive pathways for researchers to gain hands-on experience in defence-relevant research and industry collaboration, building a stronger, more dynamic talent pipeline that reinforces Canada's defence research ecosystem.

By designing defence research programs to support both defence and civilian pathways, BOREALIS can accelerate the transition from research to deployment. Leveraging dual-use technologies can help ensure that defence investments strengthen national security while also advancing technologies that improve life for Canadians, from AI tools enhancing emergency communication and diagnoses, to drones and microsattelites supporting wildfire responses.



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## Close Canada's industrial gap

The Defence Industrial Strategy (DIS) presents a significant opportunity to better facilitate the transfer of technology from universities to Canadian industry partners, particularly small and mid-sized businesses (SMBs), who make up the majority of enterprises in Canada.<sup>2</sup> Many struggle to compete with multinational firms that have the scale and resources to absorb risk and advance the commercialization of new patents, even in the face of uncertain returns.

The DIS can act as a powerful anchor for Canadian innovation by creating domestic markets for Canadian defence products and services. This reduces market uncertainty and boosts credibility for Canadian companies, enabling them to attract private capital, secure export opportunities and scale technologies into adjacent civilian markets. When integrated with university research, this anchoring effect can help translate early-stage discoveries into deployable capabilities that retain IP and economic benefits in Canada.

The proposed Defence Innovation and Secure Hubs (DISHs) represent critical, specialized components of the Defence Industrial Strategy. While these hubs provide the essential infrastructure for refined, classified work, their inherent constraints — including highly specialized

<sup>2</sup> [Key Small Business Statistics 2024](#)

focus, limited physical capacity and geographic concentration — mean they cannot be the sole drivers of Canada’s industrial strength. To match the ambition of the Defence Industrial Strategy, Canada must leverage the university ecosystem to drive innovation both within and beyond these specialized environments. While DISHs are essential for classified outputs, the sheer volume of talent and technology development required for Canada’s strategic autonomy necessitates a more distributed approach.

This requires establishing clear pathways for unclassified research to securely feed into the DISH pipeline while supporting sovereign-critical research that can be securely advanced at scale outside of a fully classified environment. Strategic research areas such as Arctic sovereignty depend on sustained partnerships with Indigenous communities and local stakeholders and could be constrained by restrictive DISH environments that limit the capacity to build and support those necessary collaborations. By mobilizing universities within this broader innovation base, Canada can integrate industry partners more effectively, avoid infrastructure bottlenecks and ensure that mission-driven capabilities are developed at the pace and volume national security priorities demand.



## Align defence innovation with Canada’s talent and skills

Maintaining Canada’s sovereignty will require protecting critical infrastructure, including energy systems, navigation systems, health infrastructure and northern communities. This depends on a deep pool of talent capable of advancing and deploying dual-use technologies such as AI, robotics, cybersecurity and quantum computing.

Universities are central to this effort, producing the highly qualified personnel required across defence and sovereignty-critical sectors.

The Canadian Armed Forces are currently facing a shortfall of more than 14,000 personnel, particularly in advanced technological fields. Strengthening alignment with university programs can help address these shortages and build the skilled workforce the Armed Forces need.

Addressing this gap will require a more coordinated strategy that better aligns university training with defence needs, including expanded co-op programs, internships and embedded fellowships to strengthen the talent pipeline and align skills development with evolving defence requirements.

There is also opportunity within the DIS to better support veterans pursuing university studies following their service. Broadening initiatives like the Workforce Alliances can help align the skills of veterans and their families with defence priorities, while creating clear pathways into research and related sectors.

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# Building momentum to create homegrown solutions

For decades, universities have been strong partners in advancing Canadian technology and supporting national security. In a rapidly changing global landscape, universities are ready to partner with government to build on this success, strengthening research security, improving IP sharing and developing the technologies that address labour shortages in key sectors, including defence.

Deeper integration of the university research ecosystem into federal priorities will enable Canada to generate talent, accelerate innovation and build sovereign capability at scale, while driving economic growth, strengthening defence capacity and positioning Canada among the fastest-growing economies in the G7.

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## Universities Canada recommendations:

1. Develop standardized commercialization pathways and incentives for dual-use technologies that can be declassified for the broader benefit of Canadians.
2. Leverage university land, infrastructure and research security capabilities to support the creation of secure research facilities co-located with industry, enabling scale across the full ecosystem.
3. Mobilize secure, scalable, unclassified research environments for dual-use innovation to realize the full ambitions of the Defence Industrial Strategy.
4. Integrate university-led programs into the Defence Industrial Strategy and related workforce initiatives to ensure a sustained pipeline of talent aligned with defence and sovereignty priorities.



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### About Universities Canada

Universities Canada represents 97 universities across the country. We are a membership organization that provides universities with a unified voice in higher education, research and innovation. Our member universities are located in communities across Canada, serving over 1.4 million students.