U15 Canada

Sovereignty, Security and Success

U15 Canada's submission to the House of Commons Standing Committee on Finance

July 2025

Recommendations:

To advance the government's mission to build a strong, secure, and prosperous Canada, U15 Canada recommends:

1. **Establish a Sovereign Technologies Fund (STF)**, with an initial investment of $1 billion over five years, to strengthen domestic capacity in sensitive technologies critical to Canada's national security, economic competitiveness, and technological sovereignty.
2. **Design BOREALIS to leverage Canada's research hubs to expand the country's defence capacity** in cutting-edge technologies, meet important commitments on defence spending, and secure sovereignty in dual-use technologies.
3. **Rebuild Canada's immigration system to attract the best and brightest through a distinctions-based approach** that rewards institutional excellence, reassures prospective students, and rebuilds Canada's international reputation.
4. **Deliver on the modernization of Canada's science and technology architecture** by establishing the capstone research organization and Council on Science and Innovation as platforms for mission-driven, interdisciplinary research that complements the granting agencies and supports a science-based industrial strategy.

About U15 Canada

U15 Canada is an association of fifteen leading research universities across Canada. U15 Canada works to optimize research and innovation policies and programs that advance knowledge, develop highly qualified leaders for all sectors, and mobilize knowledge for the benefit of all Canadians.

Introduction

Canada stands at a crossroads. In an era of accelerating technological change, intensifying global competition, and growing geopolitical uncertainty, research and innovation are foundational to Canada's long-term prosperity, sovereignty, and economic resilience. Given the urgency of the moment, now is the time to build on the strengths of Canada's leading research universities—world-leading hubs of discovery and innovation expertise that develop talent, drive innovation, and deliver impact across the country.

Canada's leading research universities are helping to fuel productivity, build sovereign capabilities, and help society respond to complex challenges—from public health and climate adaptation to emerging technologies and defence. As other countries move quickly to strengthen sovereign technologies, attract top research talent to build domestic capacity, and align research with national priorities, Canada must act with similar urgency and ambition to remain competitive and secure.

Budget 2024 laid a strong foundation by renewing investments in research, talent, and infrastructure. Budget 2025 offers the opportunity to build on that momentum by embedding science and research as foundational pillars of Canada's broader nation-building agenda. From expanding domestic capacity and strengthening defence, to attracting top talent and modernizing science funding, this is a pivotal moment to fully leverage Canada's research ecosystem to realize our collective security, resilience, and prosperity.

Launch a Sovereign Technologies Fund to Build Innovation Leadership

In a more uncertain and competitive geopolitical environment, it is increasingly clear that domestic capacity in critical technologies underpins national security, sovereignty, and economic resilience. Yet Canada is falling behind. The Australian Strategic Policy Institute ranks Canada in the top five for high-impact research in only 3 of 64 critical technology areas—such as defence, AI, and quantum. Similarly, Harvard's Belfer Center places Canada 12th overall in its Critical and Emerging Technologies Index, with mixed results across key sectors: 6th in quantum, 8th in AI, 9th in biotech, and 16th in both semiconductors and space. Notably, proactive and strong public policy that emphasized talent and innovation was identified as a key enabling strength for Canada's quantum ecosystem. Meanwhile, other countries are moving

Figure 1: Critical and Emerging Technologies Index Ranking by Select Countries

Rank	Country	AI	Biotechnology	Semiconductors	Space	Quantum	Total
1	U.S.	22.7	17.2	26.4	13.8	4.2	84.3
2	China	14.5	16.8	22.1	8.4	3.8	65.6
3	Europe	11.6	11.6	8.3	6	3.6	41
4	Japan	3.3	4.7	10.5	3.3	2	23.8
5	South Korea	3.5	3.4	9.4	2.5	1.2	20
6	U.K.	4.7	4.6	3.8	3.7	2.4	19.1
7	Germany	4.7	4.3	3.8	3.6	2.2	18.6
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12	Canada	3.5	3.6	1.5	1.9	2.1	12.6

aggressively to expand their domestic capacity and innovation ecosystems.

We can no longer afford to be reliant on access to technologies developed elsewhere. Canada must act now to expand its domestic capacity. U15 Canada recommends establishing a **Sovereign Technologies Fund (STF)** to strengthen Canada's sovereign capabilities in areas tied to economic and national security. With an initial investment of $1 billion over five years, the STF would align with the government's own *Sensitive Technologies List* and mobilize the research ecosystem around mission-driven national priorities, including:

- **Dual-Use and Defence Technologies**: Secure communications, advanced robotics, autonomous systems, and next-generation materials.
- **AI and Digital Transformation**: Foundational and applied AI, quantum computing, data infrastructure, and cybersecurity.
- **Energy and Resource Security**: Cleantech, energy storage, critical minerals, and technologies supporting the net-zero transition.
- **Biotech and Health Innovation**: Biomanufacturing, genomics, vaccine platforms, and life sciences infrastructure.

To ensure flexibility and maximum impact, the STF should deploy a blended portfolio of funding mechanisms that span the full continuum from discovery to deployment. This could include research grants, challenge-based R&D competitions, SME commercialization support, work-integrated learning placements, and national research centres. By connecting talent, research, and commercialization across the ecosystem, the STF would help Canada move from technological dependence to technological leadership.

The next imperative is to fully leverage this capacity in support of Canada's defence and security objectives.

Building Canada's Defence Capacity Through Research, Innovation, and Talent

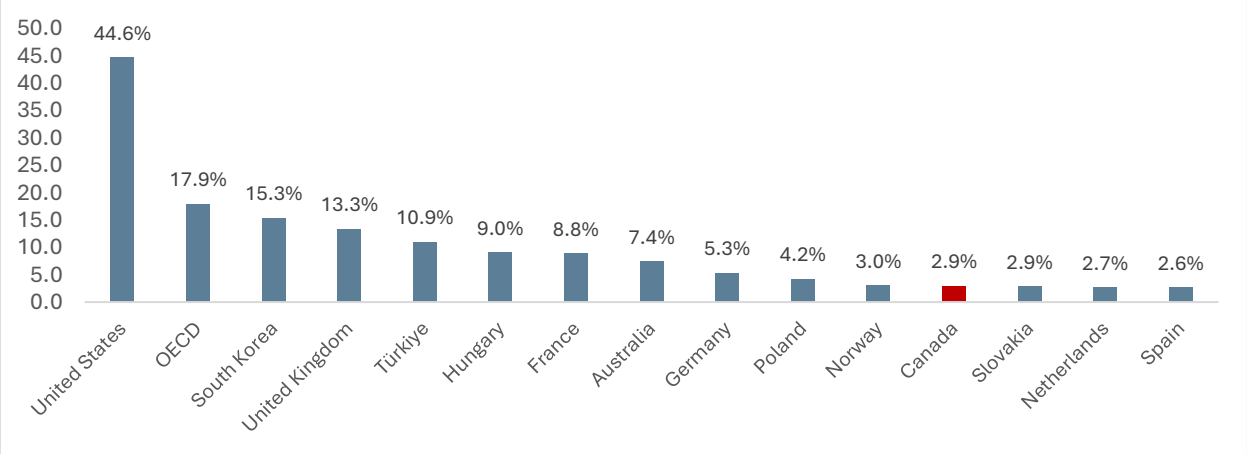
In a rapidly evolving global landscape, research and innovation are becoming increasingly central to national defence as emerging technologies shape new risks and challenge existing capabilities. This shifting reality makes clear that defence and dual-use research and development are increasingly important levers for national resilience.

Canada's peers have demonstrated that investments in defence R&D can help maintain collective security and also catalyze broader innovation, stimulate private-sector R&D, and boost economic productivity. For example, a 10% increase in government-financed defence R&D is linked to a 5–6% rise in private-sector R&D investment, while a one-percentage-point increase in the defence R&D-to-value-added ratio yields an 8.3% gain in annual productivity growth.

However, Canada continues to underinvest in defence-related R&D, despite possessing deep expertise in dual-use technologies from artificial intelligence to Arctic surveillance. In 2024, only 2.9% of the federal R&D budget supported defence priorities—well below the OECD average of 17.9% and far behind the U.S. at 44.6%. Federal support for extramural defence research—targeting

universities, companies, and other partners—totalled just $111 million, with only $40 million flowing to higher education institutions, leaving most of Canada's world-leading research capacity under-utilized. In contrast, the U.S. Department of Defense invests over $9 billion (USD) annually in university-based research and operates long-standing, mission-critical centres like Johns Hopkins' Applied Physics Laboratory.

Figure 2: OECD Defence R&D as a Share of Total Government R&D (2022)



Canadian expertise in AI, quantum, secure communications, and autonomous systems could help the federal government respond to emerging threats and maintain Canada's national security. With the right partnerships and support structures, Canada's leading research universities can help build the technological resilience, expand the talent pipeline, and deliver the discoveries needed to underpin our defence and sovereignty.

To meet these needs, U15 Canada recommends:

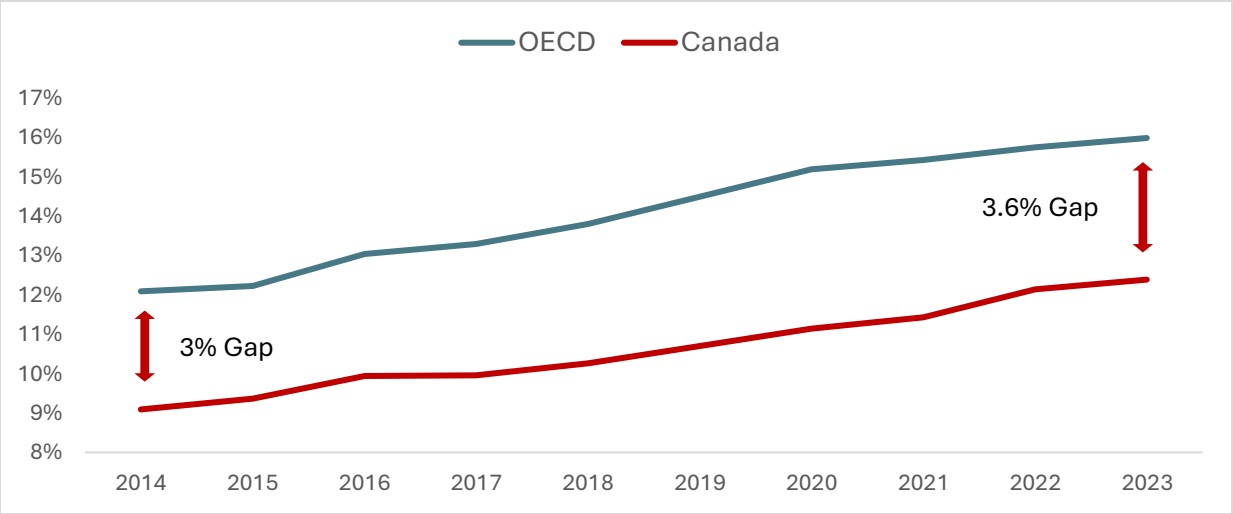
- **Embedding research universities as core partners in the design and delivery of new initiatives, such as BOREALIS**, ensures that long-term research, innovation, and talent development are integrated from the outset.
- **Building on and aligning investments with the proven capabilities of Canada's national research hubs**, particularly in key dual-use technology domains such as AI, quantum, cybersecurity, aerospace, and pandemic preparedness.
- **Exploring opportunities within the appropriate scope to establish or expand mission-critical research centres within the academic ecosystem and engage in a dialogue on the role of leading research universities to respond to defence priorities**, drawing on successful international models like the U.S. University Affiliated Research Centers.

To meet today's threats and secure tomorrow's advantage, Canada must fully harness the strength of its research universities as core partners in building defence capacity and national resilience.

Refocus Canada's Immigration System on Attracting the Best and Brightest

People are the foundation of a productive, secure, and innovative country. Achieving Canada's nation-building priorities—from economic growth, technological sovereignty and defence to important social and environmental issues facing the country—depends on our ability to develop, attract, and retain highly qualified talent. Yet Canada ranks just 25th among OECD countries in advanced degree attainment, leaving us at a disadvantage in building the expertise required to lead in a more competitive and contested global environment. Moreover, recent policy changes risk eroding Canada's reputation as a high-quality, welcoming destination for top-tier talent—undermining the government's objective of attracting the world's best and brightest to build a stronger, more resilient, and sovereign future.

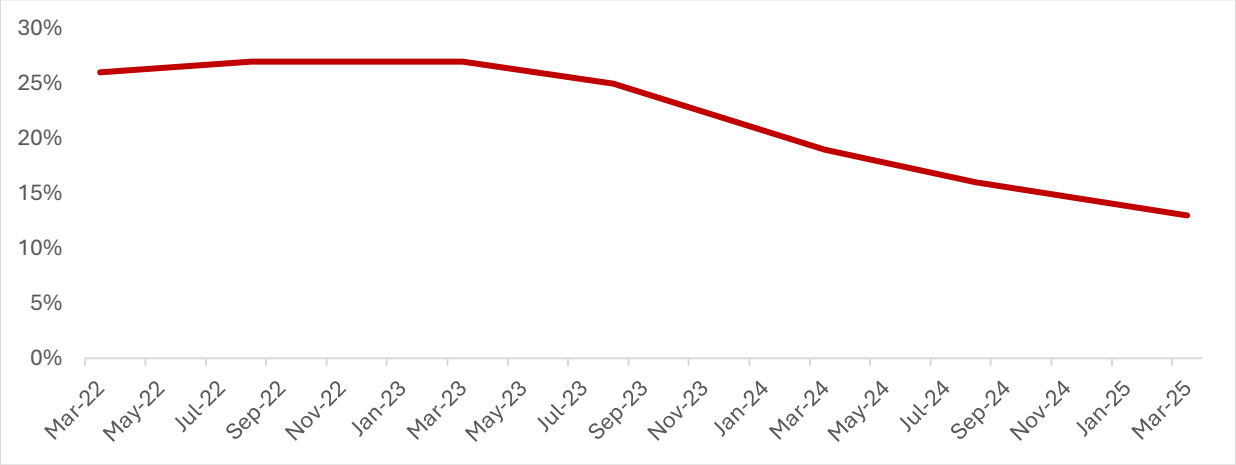
Figure 3: Share of Population, 25-64, with a Master's or Doctoral Degree/Equivalent (%)



Canada's talent shortage is a major barrier to innovation, particularly in high-growth, tech-driven sectors. U15 Canada universities are helping close this gap—training nearly 60% of graduate students, awarding over 48,000 graduate degrees in 2023–24, and attracting 70% of international PhD students, over half of whom stay and contribute to Canada's economy. At the same time, global shifts are presenting new opportunities. As U.S. science leadership weakens, Canada has a narrow but urgent opportunity to position itself as a destination of choice for top global talent. A recent Nature survey found 75% of U.S.-based scientists are considering leaving—underscoring the need to act now.

Yet recent reforms to Canada's international student program—including caps on study permits and new administrative hurdles for applicants—are undermining that potential. These changes have failed to distinguish high-performing institutions that accept the best and brightest, damaged Canada's reputation as a welcoming destination for talent, and triggered enrolment declines—even in graduate programs central to Canada's economic future. According to IDP, just 13% of international students now rank Canada as their top choice—down from 27% in 2023.

Figure 4: Share of Prospective International Students Identifying Canada as the Preferred Destination, (IDP, Emerging Futures Survey, 2022-2025)



To restore Canada's competitiveness, build domestic capacity, and deliver on the federal government's ambition to make Canada a global leader in science and innovation, **U15 Canada recommends:**

1. **Attract Top Global Talent**: Seize the opportunity to position Canada as a premier destination for world-class researchers and graduate students, thereby strengthening its sovereign innovation capacity and securing long-term economic growth.
2. **Exempt Graduate Students from Study Permit Caps:** Graduate students are vital to Canada's research and innovation ecosystem. Remove a key barrier to recruitment by exempting master's and doctoral students, signalling that Canada remains open to top-tier talent.
3. **Implement a Distinctions-Based Recognized Institutions Framework**: To ensure sustainable growth, IRCC should advance the proposed framework to recognize responsible institutions, uphold the highest standards, and restore Canada's global reputation in international education.

Canada cannot afford to lose the next generation of researchers, innovators, and leaders.

Modernizing Canada's Science and Technology Architecture

Championing reforms to the governance of science and research in Canada has been rightly identified as a government priority. Finalizing the proposed capstone research organization, alongside the development of a science-based industrial strategy through the proposed Council on Science and Innovation (CSI), offers a defining opportunity to act on that vision. Anchored by national priorities, the capstone organization can serve as the government's central vehicle to leverage the full strength of Canada's world-leading research ecosystem—mobilizing talent, expertise, and infrastructure to deliver impact.

To succeed, this reform must build on the globally respected foundations of Canada's research system: excellence in discovery, academic freedom, rigorous peer review, and effective tri-agency programming. The new organization should complement—not replace—these strengths while enhancing Canada's ability to direct research and innovation toward shared national and global priorities, including economic resilience, climate action, strong democratic engagement, health innovation, and national security.

Just as the federal government launched the Canada Biomedical Research Fund (CBRF) and the Biosciences Research Infrastructure Fund (BRIF) to ensure Canada is prepared for future pandemics by building essential domestic capacity, the capstone organization must be positioned to initiate similar targeted, mission-driven investments—such as the proposed Sovereign Technologies Fund—ensuring that science and innovation are treated as core pillars of Canada's nation-building agenda.

U15 Canada recommends that the federal government design the capstone organization and CSI to:

- Safeguard the core strengths of Canada's research ecosystem.
- Enable flexible, strategic, and mission-driven programming.
- Deliver interdisciplinary and internationally engaged initiatives.
- Provide the federal government with a fit-for-purpose platform to connect discovery to deployment and align research with national goals.

The transition must be consultative, clearly communicated, and minimally disruptive to protect confidence in the research system and avoid unintended consequences.