Submission to the Standing Committee on Industry and Technology

Study on the Defence Industrial Strategy

Submitted by U15 Canada

October 2025

Summary of Recommendations

To strengthen Canada's defence and innovation capacity, and ensure sovereign resilience in critical technologies, U15 Canada recommends that the Defence Industrial Strategy:

1. **Recognize the importance of research and innovation in industrial policy and the Defence Industrial Strategy**. Position research, development and innovation as the foundation of Canada's competitiveness, technological sovereignty, and economic security.
2. **Build and scale research capacity in critical areas through a Sovereign Technologies Fund** — Mobilize targeted investment in dual-use technology critical to developing sovereign capabilities in advanced fields, aligning public R&D with national security imperatives while catalyzing private-sector co-investment.
3. **Position leading research universities as a strategic asset, creating clear structures and mechanisms for long-term strategic engagement** — Partner with leading research universities and the research ecosystem to develop advanced capabilities. Through BOREALIS, establish durable frameworks, joint research programs, and partnership mechanisms that link government, industry, and universities in advancing Canada's industrial priorities.

Introduction

The global economy is undergoing a profound transformation. Around the world, security and economic policy are converging, and nations are re-evaluating their strategic economic advantage through the lens of resilience and sovereignty. For Canada, the Defence Industrial Strategy (DIS) is the framework through which this convergence can take shape—linking innovation, industry, and national security into a whole-of-country effort.

In this new era of transformation, research and innovation capacity have become the foundation of national power. History offers powerful lessons. In 1957, the launch of Sputnik shocked the United States into recognizing the strategic importance of science, prompting a transformational response as President Eisenhower established DARPA—whose innovations, from GPS to the internet, became the backbone of U.S. economic and technological dominance.

Today, Canada's international peers are drawing from this same lesson. Countries such as the United Kingdom, Australia, and the Netherlands have adopted comprehensive industrial strategies that link their defence, industrial, and innovation policies under shared strategic objectives. They recognize the foundational role research and innovation play in developing sovereign capabilities and have established formal mechanisms to integrate research universities and innovation ecosystems directly into national defence planning. These strategies treat defence not only as a security imperative but also an engine of economic growth.

Canada now stands at a similar crossroads. The advent of the Defence Industrial Strategy and the creation of BOREALIS, a new platform to strengthen defence innovation and partnerships, provide both the strategic imperative and the institutional foundation to move forward. Together, they present an opportunity to align Canada's research and innovation system with its national security and industrial priorities—to ensure that discovery and talent translate into capability, resilience, and competitiveness.

Canada's research sector—anchored by world-class research universities—already plays this role at a global level, producing the discoveries, technologies, and highly qualified personnel (HQPs) that help underpin innovation and prosperity. Yet, unlike many of our peers, Canada has not yet fully integrated these strengths into a coherent national framework for security and industrial strategy. Collaboration between the defence ecosystem and research universities has historically been transactional rather than strategic, with limited mechanisms for sustained institutional engagement. Enabling strategic engagement will be essential to transforming our scientific excellence into sovereign capability, industrial resilience, and sustained economic growth.

Innovation as a Pillar of Canada's Defence and Security

"Innovation power"—the ability to invent, adopt, and integrate technologies at scale—has become the foundation of both prosperity and security. In today's geopolitical landscape, technological leadership is inseparable from national sovereignty. Areas such as artificial intelligence, quantum computing, semiconductors, and advanced materials now underpin both economic competitiveness and defence capability. Sustained investment in research and development is what helps drive these advances—building the scientific foundations, talent, and intellectual capital that fuel industrial productivity and long-term growth.

Canada's leading research universities are national hubs that possess the expertise, infrastructure, and talent to accelerate defence innovation, connecting thousands of partners, producing thousands of invention disclosures, patents, and over 1,100 research-based start-ups since 2010. In 2022/23 alone, researchers at U15 Canada institutions partnered with over 3,600 organizations on federally funded projects spanning 325 federal ridings—from major urban centres to remote and rural communities

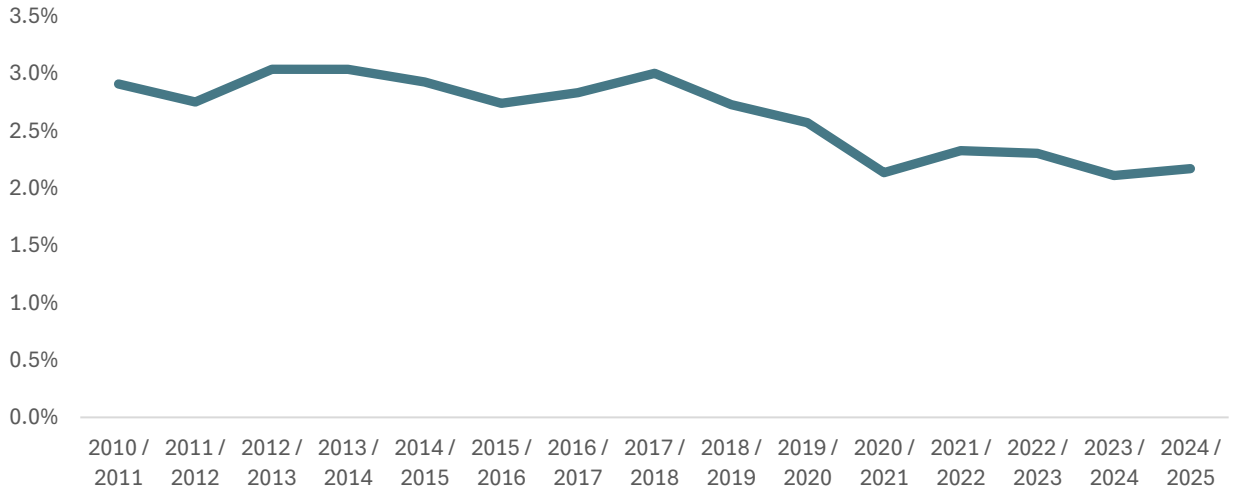
Figure 1: Collaborating Organizations on U15 Canada Federal Grants

Each year, Canadian firms invest more than $1.2 billion in R&D conducted at higher education institutions—nearly $900 million or 75% of which occurs with U15 universities—to access the expertise, facilities, and intellectual property directly relevant to industrial technology development.

In a more uncertain international landscape, now is the moment to leverage the excellence and critical mass of Canada's leading research universities to a national advantage. Doing so will not only ensure that the Government of Canada has access to advanced sovereign capabilities developed by top researchers in world-class labs but also drive greater industrial and economic benefits for the country. Evidence shows that defence R&D generates substantial spillover benefits in the broader economy. For example, a 10% increase in government-financed defence R&D is associated with a 5–6% rise in private-sector R&D, while a one-point increase in the defence R&D-to-value-added ratio yields an 8.3% gain in annual productivity growth. In short, investing in defence research strengthens not only national security but also innovation, competitiveness, and economic resilience.

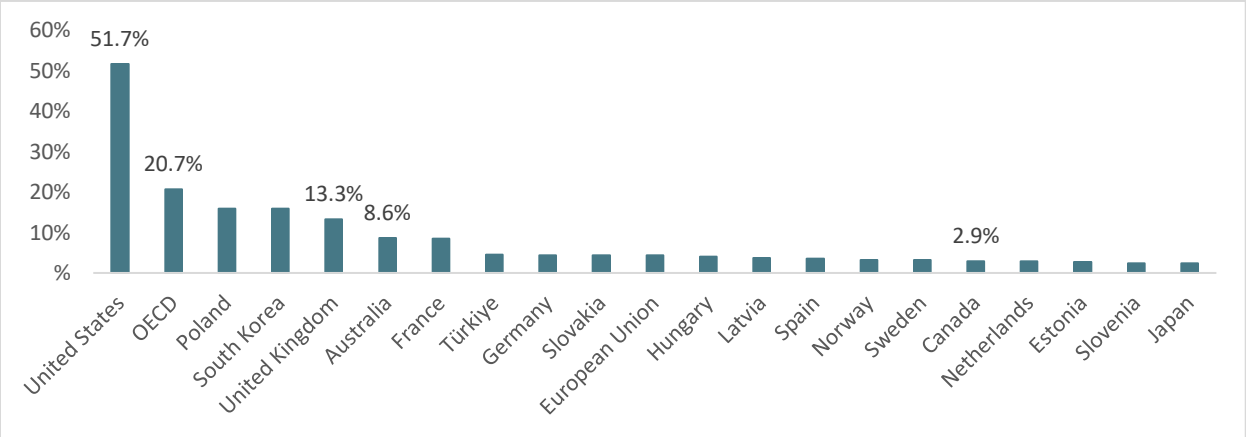
However, Canada's innovation system is under strain at a time when we can least afford it. In 2023, total R&D spending in Canada amounted to just 1.81% of GDP, well below the OECD average of 2.7%. Moreover, total federal R&D investments (intramural and extramural) as a share of Main Estimates have fallen from 3% in 2010 to under 2.2% in 2024.

Figure 2: Government R&D Expenditures as a Share of Main Estimates



This underinvestment extends to most sectors, including defence R&D, where Canada's commitments fall well below those of its allies and fail to fully leverage the nation's research strengths for strategic advantage. Currently, only 2.9% of Canada's federal R&D budget is invested in defence—well below the OECD average of 20.7% and the U.S. share of 51.7%. Of the federal government's $9 billion in total R&D spending, just $366 million supports defence priorities, with less than $40 million reaching universities. As a result, defence R&D ranks 10th out of 12 federal socio-economic objectives—illustrating a long-standing gap between Canada's research potential and its strategic investment.

Figure 3: OECD Defence R&D as a Share of Total Government R&D (2023 or latest)



Linking Canada's research capacity directly to sovereign capability development will be essential to achieving the objectives of the Defence Industrial Strategy. To fully translate the capacity of the research ecosystem, developed by long-standing investments in excellence and fundamental research into national capability, Canada needs a coordinated system, anchored in the DIS, that connects institutional strengths to strategic priorities and ensures research excellence drives capability development and industrial competitiveness.

The groundwork for more integrated, innovation-driven mechanisms is beginning to take shape. Initiatives such as the proposed Council on Science and Innovation (CSI) and capstone research organization, BOREALIS, and the new Defence Industrial Strategy reflect a growing recognition that Canada needs more than incremental program fixes. To succeed, these efforts must build on existing research strengths, align public investments with industrial priorities, and create mechanisms for deeper collaboration.

To strengthen Canada's defence and innovation capacity—and ensure resilience in critical technologies—U15 Canada recommends:

1. Recognize the centrality of research and innovation in industrial policy. Position R&D as the foundation of competitiveness, sovereignty, and long-term growth. A modern Defence Industrial Strategy should explicitly link research and development investment to capability development, deployment and economic resilience.
2. Build and scale Canada's innovation power in critical technology domains through a Sovereign Technologies Fund. Mobilize targeted investments in dual-use areas such as quantum, AI, semiconductors, space, and advanced materials. The Fund should align public R&D with economic and security priorities while catalyzing private-sector co-investment—turning Canada's research excellence into deployable technologies, domestic capacity, and sovereign innovation power.

By embedding research and innovation at the heart of industrial and defence strategy, Canada can transform its scientific strength into true innovation power—linking discovery to deployment and securing both economic prosperity and national sovereignty in an increasingly competitive world.

Realizing this ambition requires learning from international peers that have already embedded research excellence at the heart of their defence and industrial strategies.

Learning from International Peers: Taking a Whole-of-Country Approach to Defence

Countries that are looking to develop sovereign capabilities and resilient defence industries are doing so through a whole-of-country approach, establishing durable, purpose-driven mechanisms that enable government, academia, and industry to work together across time horizons. These structures go beyond project-based collaboration—they create the connective architecture that aligns research, innovation, and capability development across the entire ecosystem. In these systems, defence policy is not only a matter of national security but a catalyst for innovation, talent development, and industrial growth.

The United States offers the most established example of such integration. Its defence system is built on sustained technological leadership by mobilizing the breadth of capabilities and assets across its research and innovation ecosystem. The 2023 National Defense Science and Technology Strategy organizes fourteen critical technologies across short-, medium-, and long-term horizons, aligning federal investments with research capacity in academia and industry. As a result, in 2024 alone, over $9 billion USD in R&D obligations flowed from the DoD to U.S. higher education institutions—representing more than 15% of federal investments in higher education R&D. At the heart of this system are institutional mechanisms that embed the talent and research at universities directly into developing sovereign capabilities:

- The Defense Advanced Research Projects Agency (DARPA), which invests in high-risk, high-reward exploratory research and transformative technologies.
- University-Affiliated Research Centers (UARCs), which provide long-term mission-driven R&D capacity within top research universities
- Federally Funded Research and Development Centers (FFRDCs), which maintain independent, government-aligned research capabilities across core defence and intelligence domains.
- And a range of competitive programs administered by defence research offices (ONR, ARO, AFOSR), which fund basic and applied university research, research instrumentation, and capacity-building in underrepresented regions.

The United Kingdom is taking a similar approach through its recently released Defence Industrial Strategy (2025), positioning defence not only as a security necessity but as a strategic driver of innovation and productivity. It acknowledges structural barriers—ranging from fragmented investment and skills shortages to slow innovation cycles—and responds through a "whole-of-society" framework that embeds universities, research institutes, and industry within the defence ecosystem. Central to this vision is the creation of the Defence Universities Alliance (DUA), a formal partnership between the Ministry of Defence and the higher education sector designed to expand defence-related education, foster ethical research, and strengthen talent pipelines. Ultimately, the strategy situates leading research universities as a pillar of defence innovation, aligning research and training with industrial priorities to reinforce both security and economic competitiveness.

Similarly, Australia's Defence Industry Development Strategy (2024) adopts a similar "whole-of-nation" approach, emphasizing that sovereign capability is a shared national responsibility. The strategy integrates skills, industry, and research policy, recognizing that universities and research institutions are vital to producing the talent and technologies that underpin defence capability. Through the Defence Science and Technology Group (DSTG) and the Australian Defence Science and Universities Network (ADSUN), Defence partners with academia and industry to guide research priorities, connect SMEs to infrastructure and expertise, and scale innovation. Together, these initiatives move to ensure that Australia's research base is mobilized in support of defence priorities, treating universities as engines of national security and technological leadership.

The Netherlands' Defence Strategy for Industry and Innovation (2025) also embraces a holistic model, linking defence capability directly to economic strength and innovation. It calls for urgent, coordinated action to scale industrial capacity and accelerate technological development, with the Ministry of Defence acting as a "smart developer" to direct investment and shape five priority technology domains: Intelligent Systems, Smart Materials, Quantum, Space, and Sensors. To deliver on this vision, the Netherlands established Defport, a new public–private partnership platform that unites the Ministries of Defence, Economic Affairs, and Education with industry associations, higher education and research institutions. Defport bridges supply and demand in the defence market, strengthens inter-ministerial coordination, and fosters regional innovation ecosystems where universities, applied research institutes, and companies co-develop and test new technologies.

The global shift toward aligning defence, innovation, and industrial policy to advance both sovereignty and economic growth underscores the need for Canada to complement industrial investments with a modern framework that mobilizes the country's world-class research institutions.

To achieve this, **U15 Canada recommends establishing durable mechanisms to catalyze sustained collaboration between government, academia, and industry over the short, medium, and long term—anchored through BOREALIS, the new defence innovation platform.**

BOREALIS offers a timely opportunity to both align and create formal partnership structures that align university expertise and infrastructure with capability development priorities under the Defence Industrial Strategy. Any new mechanisms should also build upon and align with existing federal research support structures, including the Tri-Agencies and the Canada Foundation for Innovation (CFI), to ensure coherence, reduce duplication, and mobilize Canada's established research capacity in support of national security and industrial resilience.

Examples of durable engagement are already emerging across Canada's leading research universities. The Centre for Applied Research in Defence and Dual-Use Technologies (CARDD-Tech) at the University of Alberta, launched in 2025, demonstrates how academic research can be mobilized in direct support of national security and industrial objectives. In its first year, CARDD-Tech has mobilized over $25 million in research projects across themes such as advanced materials, quantum, AI, space, and autonomous systems—working with more than 30 defence industry partners and engaging faculty, students, and SMEs to strengthen supply chains and deliver innovations for Canada's defence and economic security.

Now is the time to move from promising examples to a coherent, scaled system of collaboration that embeds this kind of partnership across the research and innovation ecosystem.

Conclusion

The convergence of economic and security policy marks a defining moment for Canada. With the Defence Industrial Strategy and BOREALIS, Canada has the opportunity to develop the innovation mechanisms to bridge discovery and deployment—transforming research excellence into sovereign capabilities and economic outcomes. To seize this opportunity, Canada must design and implement the right mechanisms to fully leverage the breadth of assets across the country—our leading research universities, critical-mass innovation capacity, and high-quality talent base—within a coherent, purpose-driven national architecture.

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.