HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

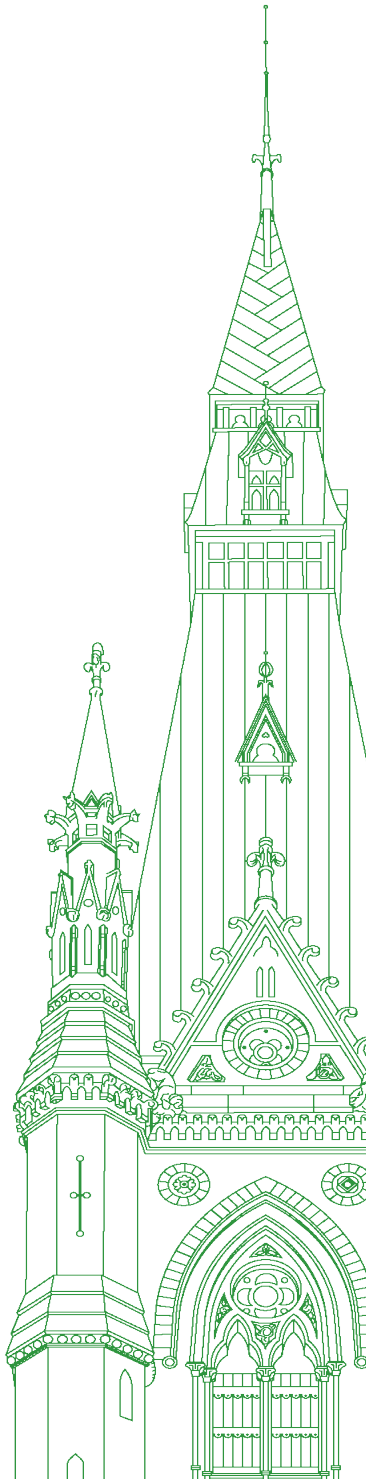
45th PARLIAMENT, 1st SESSION

Standing Committee on Science and Research

EVIDENCE

NUMBER 011

Monday, October 27, 2025



Chair: Salma Zahid

Standing Committee on Science and Research

Monday, October 27, 2025

● (1100)

[*English*]

The Chair (Salma Zahid (Scarborough Centre—Don Valley East, Lib.)): Good morning, everybody.

I call this meeting to order. Welcome to meeting number 11 of the Standing Committee on Science and Research.

Pursuant to a motion, the committee is meeting to study private sector investment in research and development in Canada.

I would like to make a few comments for the benefit of the witnesses and the members. Please wait until I recognize you by name before speaking. For those participating by video conference, click on the microphone icon to activate your mic. Please mute yourself when you are not speaking. For those on Zoom, at the bottom of your screen you can select the appropriate channel for interpretation: floor, English or French. For those in the room, you can use the earpiece and select the desired channel. All comments should be addressed through the chair.

With that, I welcome our three witnesses for the first panel. We are joined by Ryan Williams, fellow, Balsillie School of International Affairs; Grace Lee Reynolds, chief executive officer, MaRS Discovery District, by video conference; and Bruce Johnson, executive vice-president, Martinrea innovation development, Martinrea International Inc.

Welcome to all. You each have five minutes for your opening remarks. Then we will go to the rounds of questioning with our members of Parliament.

With that, Mr. Williams, you have five minutes for your opening remarks, please.

Ryan Williams (Fellow, Balsillie School of International Affairs, As an Individual): Thank you, Chair.

I'm here today with a clear proposal. Canada must double business R and D investment by 2030, and here's how we can do it. Mind you, this is in order, and it has to be in this order or it doesn't work: assert our sovereignty, establish venture capital and be relentlessly competitive.

Canada's digital economy is exploding. AI start-ups, fintech, e-commerce, data centres and cloud services now drive over $100 billion a year—bigger than agriculture and bigger than forestry—but here's the problem: We have almost no protection for it—no unified law, no shield—and we increasingly and recklessly give away our ideas, our IP and our digital sovereignty.

We spend over $10 billion a year in public research funding, yet only 12% of patents in Canada come from Canadians. Over 87% of our innovation is foreign-owned. Worse, only about 5% of patents generated at Canadian universities ever become licensed, meaning roughly 95% of publicly funded research lies dormant in the valley of death. That translates to a loss of roughly 2.7% of GDP, about $75 billion annually and $5 billion in tax revenue.

In quarter one, 2025, U.S. start-ups raised $91.5 billion U.S. in venture funding. Canadian start-ups raised only $920 million U.S., a 100-fold gap, but guess what? Only 20% of that funding was Canadian. You guessed it: U.S. VC firms funded 80% of our Canadian start-ups.

Why does that matter? Well, roughly 0.2% of start-ups in the U.S. are VC-backed, but the VC-backed firms have gone on to constitute about 42% of all U.S. IPOs and 62% of public R and D spending through private firms.

That is why we need to get our sovereignty right. Since 2016, Ottawa, for instance, has invested over $4.4 billion in AI and digital research, yet roughly 75% of the resulting patents and IP is owned abroad, mostly by U.S. and Chinese companies. That means $3.3 billion of taxpayer-funded innovation is fuelling foreign economies, not Canada's. When multiplied by IP's economic effect, that's $15 billion to $30 billion in lost output every year. We are literally funding the future for someone else, and we need to get back the control of it.

Meanwhile, 80% of Canada's digital data is owned and hosted on U.S.-controlled servers. Under the U.S. CLOUD Act, American authorities can compel access to Canadian data stored on U.S. infrastructure—and this is infrastructure located in Toronto and Montreal, by the way—with no equivalent Canadian blocking statute. If Canada continues to rely on U.S. servers, U.S. venture funding and U.S. ownership of our innovations, we will enter every future trade agreement as a price-taker, not a partner. Increasingly, the next NAFTA will be about AI, data and digital sovereignty, and right now we're negotiating from weakness.

Meanwhile, our peers treat innovation as a strategic resource. The U.S. uses the CHIPS act, DARPA and SBIR to keep IP at home. Israel's Yozma fund co-invests public capital to anchor start-ups domestically.

This is not just about research. It's also about market structure. We don't have much competition in Canada. We have what's called a "monopoly problem". Canada's most concentrated sectors—in banking and in the digital economy—invest less than 0.5% of the revenue in R and D, compared to 2% when there's more competition in the U.S. When markets are closed, innovation dies. Competition itself is an innovation policy.

My three core recommendations are as follows.

Number one, enact a Canadian innovation and data sovereignty act. Protect Canadian IP and data like we protect critical minerals and energy. Require every publicly funded research project to include a Canadian commercialization plan. Require Canadian data residency for sensitive industries to counter the U.S. CLOUD Act and make sure that right now, when Canadian privacy and data are held on U.S. servers in Canada, they don't fall under U.S. courts and U.S. jurisdiction. Implement export controls for AI, quantum, biotech and defence tech.

Number two, establish a $100-billion sovereign innovation fund, a co-investment vehicle matching private VC fifty-fifty through repayable loans, not grants. Take small 1% to 2% equity shares in IP-heavy Canadian firms so taxpayers share the upside. Step in when foreign buyers try to remove critical Canadian IP, giving founders a Canadian alternative to selling out.

Number three, break up monopolies and incentivize competitive R and D. Rewrite the Competition Act to make innovation and R and D explicit priorities and enforce market share caps and require divestitures when there's data, when it's less than 40%. Ban killer acquisitions that eliminate Canadian start-ups. Too many of our Canadian start-ups get bought up by American VCs.

Canada has already proven it can defend sovereignty when it matters. As Jim Balsillie warned, you can't commercialize what you don't own, and Canada doesn't own much. It's time to act with the same resolve to ensure that when something is invented in Canada, it's also owned in Canada.

● (1105)

Thank you.

The Chair: Thank you.

We will now proceed to Ms. Reynolds. She is joining us by video conference.

Ms. Reynolds, you have five minutes for your opening remarks. Please go ahead.

Grace Lee Reynolds (Chief Executive Officer, MaRS Discovery District): Good morning, Chair and members of the committee.

Thank you for inviting me to speak on this critical issue today.

Canada has no shortage of ideas or talent. The challenge we face is ensuring that discoveries make their way into markets quickly and at scale.

The data is sobering. Canada has fallen to 18th in the OECD's productivity rankings, behind Norway, the U.S., France, the U.K. and Australia. We spend just 2% of GDP on R and D, while Sweden spends 4% and South Korea, 5%. The OECD data is clear. We need well-targeted R and D support and a stronger emphasis on the commercialization of innovation.

Here's what's concerning: Half of Canadian founders who raise more than $1 million do so in the U.S. Those who go south raise nearly twice as much as their peers who stay in Canada. We're losing not only capital but often also the future anchor firms that drive R and D and create high-quality jobs.

After a decade at MaRS and years working at the intersection of research, entrepreneurship and industry, I've seen first-hand that this isn't about a lack of talent or breakthrough science. It's about system design. The good news is that the design can be changed, and I'll touch on three areas where we believe that targeted action could make a real difference.

First, let's fix the capital problem. We need to attract more domestic investment into our scaling firms. The Canadian investment sector has been cautious at early stages, especially when technologies are unproven. That can change if early-stage ventures can be de-risked through business mentorship, talent development and, crucially, access to customers, particularly in regulated industries.

The government can play an important role here. When the government acts as a first customer through strategic procurement, it validates technology, and it de-risks it for private investors. We have tools like Innovative Solutions Canada, but using them at a greater scale would strengthen our domestic investment base.

Second, let's accelerate university-industry collaboration. Our universities produce world-class research, but translating that excellence into commercial outcomes remains difficult. We can expand programs, like those at Mitacs and NSERC, that create direct partnerships between researchers and industry.

Equally important is simplifying how intellectual property moves from lab to market. Making technology transfer offices accessible and involving industry partners earlier would help ensure that more research is guided towards market needs from the start. While universities drive discovery, commercialization often requires complementary infrastructure—organizations that can connect ventures with capital customers and talent. Strengthening this ecosystem around our research institutions would make it easier for Canadian ideas to become Canadian companies.

Third, let's retain value in Canada. We fund early-stage research, but we lose momentum when companies need to scale. For our IP developed with public funding, especially in high growth areas like AI, clean tech and energy, and life sciences, we need strategies to ensure that more of that value and job creation stays here in Canada. Again, strategic procurement by government and established corporations can be a powerful lever in this effort. When government or corporations buy Canadian innovation, it sends a powerful signal to global markets.

As you can see, resolving the gap around R and D commercialization is multi-faceted. It requires clear policy direction, a shift in risk appetite, efficient capital deployment and also effective use of tax systems. With ISED, provinces, regional development agencies and superclusters all holding a piece of this mandate, what we need is strategic coordination across the system.

Budget 2022 proposed a new innovation agency, but its status is unclear. However, whether through a new agency or better coordination of existing ones, what matters is speed, risk tolerance and action, connecting researchers, capital and customers.

In closing, MaRS has spent 25 years as a hub connecting entrepreneurs, researchers, customers and capital. The entrepreneurs we work with consistently tell us that they need capital that matches the scale of their ambition, access to customers who will take a chance on Canadian innovation, and IP frameworks that protect their inventions while enabling commercialization.

The good news is that we already have so many of the pieces. We have world-class research. We have entrepreneurial talent. The urgent challenge is to use these tools differently, with greater speed, with coordination, with more risk tolerance and with a focus on outcomes, especially in light of our shifting global markets.

● (1110)

If we can get this right, we won't just fund innovation; we'll build companies, industry and jobs that define Canada's future.

The Chair: I'm sorry for interrupting, Ms. Reynolds. Can you quickly wind it up in the next 10 seconds?

Grace Lee Reynolds: I am done.

Thank you.

The Chair: Thank you.

We will now go to Mr. Johnson.

You have five minutes for your opening remarks. Please go ahead.

Bruce Johnson (Executive Vice-President, Martinrea Innovation Development, Martinrea International Inc.): I'm Bruce Johnson and I'm with Martinrea International.

We are a Canadian-based manufacturer and supplier to the automotive and industrial markets. We currently employ more than 19,000 talented and motivated people. We operate in 57 locations in 10 countries. Martinrea's vision is to make lives better by being the best supplier we can be of the products we make and the services we provide.

Who am I? I'm a proud Canadian, with 42 years in the automotive manufacturing business based in Canada. I'm in my 19th year at Martinrea, and I'm currently responsible for Martinrea innovation development, which is an innovation incubator and developer. We support innovation within Martinrea and invest in innovative companies that are developing innovative technologies.

One of those investments was Effenco. I'll refer to Effenco in my examples today. Effenco is a Quebec-based company that develops electrification solutions for large vocational trucks. Martinrea innovation development purchased the assets out of bankruptcy three years ago, and we have now created a growing and operating business with continued engineering and development in Quebec and manufacturing in Ontario.

I have a general perspective on innovation. At Martinrea, our view is that innovation requires that three things be accomplished. First, we must establish proof of concept. Second, we have to industrialize the product. Third, we have to commercialize the product.

Internally, Martinrea is a successful innovator. We draw on our skills and experience to drive innovation. Externally, Martinrea has worked extensively with early- to mid-stage companies and small to medium-sized enterprises. These companies, with help, can typically achieve proof of concept. Where they struggle most is with industrialization and commercialization. Both of these are key to building a business.

It's a tough thing to build a business. There's a very strong case that can be made that Canadian companies, when working in collaboration with a combination of other companies, educational institutions, innovation hubs and governments, will significantly derisk projects and increase the quality of outcomes. Both private and public resources are better placed with strong teams that can play to their partners' strengths. Martinrea works closely with a number of educational institutions, agencies and initiatives, such as NRCan, NGen, OVIN, IVI, MaRS and others. We recommend applying resources to the teams that are most likely to win. That is the best direction.

Capital intensity is a barrier to R and D projects. The development of a zero-emissions system like Effenco requires substantial upfront investment commitment. In the case of Effenco, it was more than $17 million, with a long development cycle of four to five years. This extended timeline and capital intensity make it challenging to attract private investment due to a delayed return on investment and inherent technical risks.

What we recommend is a dual approach to de-risk innovation investment and accelerate commercialization. Combine strong public grant support with enhanced tax-based incentives, including a repayable tax credit, regardless of short-term financial performance, to improve short-term liquidity. Strengthening public-private coinvestment through entities like BDC allows governments to fund and match private capital based on clear and clearly established milestones.

Another barrier is grant availability and processing time. Again, I'll use the example of Effenco. Accessing government funding for R and D is important, but it is often constrained by grant availability and processing timelines. These programs are typically highly competitive, with strict eligibility criteria and long review cycles that can delay project milestones.

We recommend facilitating private and public sector partnerships. Introduce rolling intake for high-impact projects and emerging industries and technologies. Advocate for grant partnerships with universities and public research institutes as part of the grant evaluation criteria. Create dedicated funding streams within existing programs to support capital-intensive technology development. Adapt eligibility criteria for small and medium-sized enterprises and large corporations, ensuring rapid access to capital and alignment with development and commercialization cycles.

Another barrier is ownership and control of intellectual property. Effenco can be used as an example. During collaboration discussions, concerns emerged regarding the potential deployment of jointly developed IP by public research institutes and universities in unrelated projects with other organizations. Such deployment risks undermine the proprietary nature of the Effenco technology, compromising Canadian innovation and competitive advantage.

We recommend standardizing an IP protection framework for publicly funded programs that prioritizes the protection of Canadian innovation and commercial interests. Also consider IP mitigation plans as part of grant applications.

Finally, Canada has much to celebrate with respect to the high quality of our talent. We believe that these recommendations will help further unlock that talent. We believe that resources are best placed with teams that exhibit a strong mix of capabilities through proof of concept, industrialization and commercialization.

● (1115)

Thank you.

The Chair: Thanks to all of the witnesses for their opening testimonies.

Now we will proceed to the first round of questioning, and we will start with MP Baldinelli for six minutes.

Please go ahead.

Tony Baldinelli (Niagara Falls—Niagara-on-the-Lake, CPC): Thank you, Madam Chair.

Thank you to the witnesses for being with us today.

I'm going to begin by going to Mr. Williams.

It's good to see you. I know this area has been a passion of yours, and we've spoken many times about it. You've even been a member of this very committee and have raised the issues we're studying today, so thank you for that.

In some of your other writings on this issue, you've indicated that Canada faces an innovation paradox. We excel at generating ideas but fail to own or commercialize them.

Ms. Reynolds, you said that Canada has no shortage of talent or ideas, yet we're spending over $10 billion in public research funding and the economic outcomes increasingly are benefiting others. You showed that only 12% of patents filed in Canada come from Canadians; over 87% of innovation is foreign owned.

I wrote these comments down. You said, “We are literally funding the future for someone else.”

If Canada is losing about $75 billion a year in GDP to foreign IP ownership, what concrete steps can the government take right now to stop that loss?

Ryan Williams: Thank you.

Through you, Madam Chair, it's a pleasure to be back here at committee. In some ways it has changed, and in some ways it hasn't changed.

You're absolutely right. When we studied the first instance of IP commercialization, we identified that a lot of our IP gets siphoned out of Canada, and that's a major problem. Not only is it costing jobs and costing our GDP but it's stopping us from utilizing the talents we have in Canada.

Number one among those is that we have some great, world-class institutions here. There's U15 Canada; you're going to have Robert Asselin come and present at the next panel. We have unbelievable universities that do unbelievable research. The problem is we give it all away.

The first step we have to take is to establish sovereignty in Canada and protect the IP that's generated in Canada and ensure that when we spend money—especially that $10 billion a year on research—it doesn't go to foreign nations. We don't allow that with critical minerals and we certainly don't allow that with our energy sector, so why are we allowing it with our data sector?

This has to be done in order. Before we establish VC funding and before we tackle competition, which I'm always in favour of, number one is to establish our sovereignty. We do that by doing two things.

One is establishing an act to ensure that, when we're spending money on IP, every attempt possible is made to commercialize that IP here in Canada. The second, which is the biggest one I brought up, is related to the U.S. CLOUD Act. Not a lot of Canadians or parliamentarians know that 80% of the data that Canadians utilize—health data, financial data, data in terms of speaking to ChatGPT every day—is held on servers in Canada but is owned by the Americans. They have jurisdiction over that data. In other words, Canadians can be tried in U.S. courts over data held on a server in Toronto because it's owned by a U.S. cloud, and that's a problem we have to solve right away.

In the 1960s, the U.S. had the Helms-Burton Act. The U.S. was, at that time, trying to make sure that Canada wasn't allowed to invest in Cuba. We had the Foreign Extraterritorial Measures Act that countered the U.S. act so that when, for instance, there were companies investing in Cuba, they weren't held under U.S. law.

We have to do the same and either update the Foreign Extraterritorial Measures Act or come up with our own legislation that guarantees that Canadian data on U.S. servers doesn't fall under U.S. jurisdiction or under their court system, as is happening right now.

● (1120)

Tony Baldinelli: Thank you for that.

What countries are doing it right, then? From retaining IP and protecting data to scaling innovation, what can Canada learn from some of these countries?

I believe, Ms. Reynolds, you mentioned Sweden and what they're providing in investment dollars in comparison to Canada. Canada is ranking, I think, as low as 18th in the OECD.

What are some of the other countries doing, and what can we utilize or replicate?

Ryan Williams: The U.S. certainly is leading the pack. They're leading the world with some of their biggest companies in innovation, but they're using the CHIPS act—that's the newest act—to establish primarily their sovereignty when it comes to chips to try to pull some of the microprocessor and chip technology away from Taiwan.

Secondly, they have DARPA. I know that our industry minister in the past has tried to bring forth a CARPA to counter that, but what it comes down to is procurement so that the Canadian government is dedicated to helping companies with their research but is then committed to buying that technology off the shelf from those companies. We're not doing that. The U.S. has done it for over 30 years with DARPA.

The third thing they're doing in the U.S. is the SBIR, or small business innovation research, program. They invest primarily in small businesses and their research and, again, commit to commercializing or buying their products once they've reached a certain level. We're not doing any of those things here in Canada.

Tony Baldinelli: Thank you.

Ms. Reynolds, you had talked earlier, on your third point, about retaining value in Canada, about a strategy to make it stay here, and about our investments and the need for strategic coordination across all levels.

Is the system too bureaucratic right now? Are there too many rules in place and too many players involved? How can we simplify that ecosystem to get that value-added system created in Canada?

Grace Lee Reynolds: That's a really fantastic question. I think it's an important starting point.

To all of your points, is it too bureaucratic? Yes, there are probably lots of elements of that. Are there too many players? There are a lot of players involved—

The Chair: I'm sorry for interrupting. Your time is up.

Tony Baldinelli: If Ms. Reynolds could provide a written response, that would be great.

The Chair: Maybe you can ask her in the second round. Thank you.

We will now proceed to MP Noormohamed.

MP Noormohamed, you will have six minutes. Please go ahead.

Taleeb Noormohamed (Vancouver Granville, Lib.): Thank you, Madam Chair.

Thank you to our witnesses.

Ryan, it's great to see you in committee and actually very much in your element. It was really wonderful to hear your testimony, but it was also sobering, on a number of fronts.

You and I have talked about this before. One thing that I wanted to lean in on is the complexity of raising capital for early stage in this country and, ironically, as you grow, the complexity of raising larger rounds of capital.

I was really intrigued by this idea of a sovereign innovation fund. I've been talking a lot about a sovereign wealth fund that focused on innovation for quite some time. One thing that I'd love your thoughts on is this. A lot of programs, right now and historically across governments, are what governments call “investments”, when in fact they're not equity positions.

With this new approach that you're suggesting, do you think it is time for government now, through a government fund—even if it's arm's length, which it should be—to take equity positions in some of these new Canadian innovative companies?

● (1125)

Ryan Williams: It's nice to see you again, as well, through the chair.

Yes, 100%, if this is taxpayer funding, and these are public dollars. Like I mentioned earlier, if we gave $4.4 billion to AI technology, of which 75% is foreign owned, we were giving that money, effectively, to foreign corporations and foreign countries. We want to be investing in Canadian companies. In that, if we're spending public dollars, we should be making sure that the government also has a stake.

That does two things. Number one, it is unique. Even Israel's Yozma fund does not take equity, but it makes sure it protects the dollars.

My idea on this is that it follows venture capital private investment. The government would not put money in unless we already had private investment, so that would be fifty-fifty into companies. It protects those private investors, who are already taking an equity share, and it also protects the taxpayer. What that really does, at the end of the day, is hopefully raise more money.

There are going to be start-ups that fail. This is how the ecosystem works. Those companies that do well, though, will return an investment to the taxpayer. That allows perpetuity, and we have more money that goes into Canadian start-ups, and away we go.

Taleeb Noormohamed: On that, obviously there are examples like Norges and Temasek that, through their sovereign wealth funds, are taking positions in tech companies. It's not like we'd be the only ones doing this, which I think should make things easier in what has historically been a risk-averse investment environment in Canada.

One of the challenges has been getting those early-stage investors in Canada to invest. Ironically, it seems very easy for us to invest when it comes to mining and to take a flier on resource development.

I'm going first to you, Ryan, and then to Ms. Reynolds, if you would, please.

This isn't just about government. What do we need to do as a country to unlock the way in which VCs in this country start to see investments in Canada? We know that valuations in Canada tend to be lower than in the U.S. There are better deals to be had right now in Canada. How do we get the VC environment here to actually start playing more aggressively in the Canadian sandbox?

Ryan Williams: I think there are two ways. Number one, we have to ensure that IP wants to stay in Canada. That's why we made the sovereign changes. The sovereignty has to be number one. If we don't make it attractive, if we don't set rules that IP has to stay in Canada, it's just going to go.

When we look at other nations, especially the Americans, they have lower tax rates. They shouldn't have lower capital gains. Many companies are going to Texas or Florida because they're seeing zero state taxes there.

There's a saying that capital goes where capital grows. We have to make sure that we are relentlessly competitive and that we have the attractiveness in tax policies and government policies for the investors, so when they're investing money in Canada, it's just as competitive as it is in the U.S.

Taleeb Noormohamed: Great.

Ms. Reynolds, I'd ask you the same question.

Grace Lee Reynolds: Thank you.

I could probably offer an example of that. It's difficult indeed for those in private or even venture capital who want to invest at an earlier stage take that initial risk. We have a program that's been running in partnership with the Ontario government since about 2008. It's called the MaRS investment accelerator fund. Its very role is actually to be an intervention to help fund that first cheque for emerging technologies. The success of the fund is not really measured through, say, the return directly, although it has been quite successful. It operates independent of government as a venture fund that's kind of under our oversight. However, the main victory is actually around the follow-on investment that it can attract over the years. It's been able over these years to attract a more than 2.7 times investment in follow-on criteria.

Really, if you think about that as a mechanism or as an intervention to be able to help those early-stage companies with that very first opportunity, that is a good example. We wish there were more examples of an investment accelerator fund.

I would just add that in this particular case, it was focused on the software sector, so those early cheques were easier, ranging anywhere from $500,000 to $1.5 million. But if we're really talking about deeper commercialization, that type of early-stage risk investment needs to be of a higher cheque size. Looking at an early-stage biotech company, you'd need $2 billion to $10 billion.

So it is an area, then, where I would say there's a great opportunity for the government to be able to help with that early-stage risk.

● (1130)

Taleeb Noormohamed: Great. Thank you.

Well, thank you to all of you.

The Chair: We will now proceed to MP Blanchette-Joncas.

You have six minutes, please.

[*Translation*]

Maxime Blanchette-Joncas (Rimouski—La Matapédia, BQ): Thank you, Madam Chair.

I would like to welcome the witnesses who are with us for this new study.

Mr. Williams, the report entitled “Support for the Commercialization of Intellectual Property” by the Standing Committee on Science and Research, published in 2023, as well as the Library of Parliament's briefing note in support of this study, produced in October 2025, make the same observation: Canada is the only G7 country, or one of the only G7 countries, where private investment in research and development is declining.

Why do you think the federal government has still not managed to address this innovation deficit despite the creation of the Canada Innovation Corporation and programs like the strategic innovation fund?

Ryan Williams: Thank you very much, Mr. Blanchette-Joncas.

[*English*]

It's nice to be here.

No, you're right; I think the problem we found on that study.... We did complete a study at this committee. It was one of the first studies by this committee that looked at IP commercialization. We specifically looked at public research. We looked at universities, polytechnics and colleges, and we saw the return on that. The statistic that we may not have had in that report, which we've gotten since and now use, is that of all the research that goes into universities, only 5% of those patents get commercialized.

Now, that's a low stat. When we looked at the alternative, one of the recommendations that came out of that report was to look at the colleges and polytechnics, because the colleges and polytechnics were much higher than 5%. The reason they were higher than 5% was that they were engaged with small businesses themselves. They engaged with their IP. They helped them scale and accelerate that IP. Then they gave it back to those businesses. They didn't own the IP. They allowed them to grow.

We have to get back to that. In all of the recommendations I've seen so far—we haven't seen the budget come out yet—that hasn't been a reality in terms of the government changing how it looks at innovation and how it funds our public institutions, including our colleges and polytechnics.

[*Translation*]

Maxime Blanchette-Joncas: I want to come back to the 2023 report entitled “Support for the Commercialization of Intellectual Property” by the Standing Committee on Science and Research. In that report, the committee made 14 recommendations to improve the value of Canadian research. Two years later, no updates or follow-ups have been published.

Would you say that the government is suffering more from an innovation deficit or an implementation deficit?

[*English*]

Ryan Williams: It's both, certainly. You know, I think we have to get serious on this. When we look at what the reality of innovation means for Canada, it's Canada's fastest-growing export when we look at data and we look at technology. It's now sitting at 10% of our exports. It's grown four times faster than our goods sector. What's leading that is obviously cloud services and computer services. When we look at AI as a whole, there's quantum computing, in which Canada still has quite a bit of the AI.

If we're not serious on that, when we talk about sovereignty, looking at Canada's sovereignty, where and who it's actually benefiting are the Chinese and the Americans. So I think we're going to find in short order—as we are now, looking at slowdowns of the economy and looking at the trade war we have with the Americans—that if we're not serious about owning our sovereignty with IP and with data as a whole, we'll lose all of that. We'll be in a big mess of trouble. We'll be playing catch-up. As a first priority, this government needs to establish our sovereignty and also grow our innovation sectors.

[*Translation*]

Maxime Blanchette-Joncas: I'll continue on the topic of sovereignty.

You mentioned that 80% of Canadian digital data is hosted on U.S. servers, which is unacceptable. That's pretty easy to understand.

By letting this dependence take hold, is the government not compromising the digital sovereignty of the country and, by extension, that of Quebec, where the most advanced research in artificial intelligence and cybersecurity is concentrated?

The federal government invested in its economic supercluster, and it identified Montreal as a strategic point in the development of artificial intelligence. However, it's unable to trust its own infrastructure and facilities in which it has invested.

● (1135)

[*English*]

Ryan Williams: No. We have to get this right. I don't think many Canadians understand the severity of this. We do not have sovereignty on data, so Quebeckers who have their data stored on a Montreal server are under the jurisdiction of U.S. sovereignty and privacy laws.

When we were studying Bill C-27 in the last Parliament and updating PIPEDA and the Privacy Act, we looked at Quebec as having the best provincial privacy laws in Canada. For Quebeckers to understand that their data is under the jurisdiction of a U.S. law under the U.S. CLOUD Act, that would be very concerning for Quebeckers.

The government has to either update the Foreign Extraterritorial Measures Act or come up with its own sovereignty act that I've identified. That would ensure right away the sovereignty of data which would be put back into the hands of Quebeckers and Canadians and not to the U.S. and U.S. courts and potential lawsuits from U.S. courts.

[*Translation*]

Maxime Blanchette-Joncas: If we don't own our patents, data and infrastructure, can we talk about scientific sovereignty or have we simply become a technology subsidiary of the United States?

[*English*]

Ryan Williams: It's the U.S.A., but also China and other nations that are investing in Canada and owning the rights to our data.

Again, going back to what's most important, I hope, a recommendation from this report is to establish our digital sovereignty now, not in the next Parliament and not in eight months, but right now. We need to establish and get control of our IP. We need to understand the sieve that Canada has become in letting our ideas and public dollars flow out of the country. We need to ensure that once we do that, we can start building our IP, and start building our wealth and potential here in this country.

The Chair: Thank you.

We'll now proceed with our second round.

We will begin with MP DeRidder for five minutes.

Kelly DeRidder (Kitchener Centre, CPC): Thank you.

Hi, Ryan, welcome. I'm going to start with you.

In one of your papers and today you referenced Jim Balsillie, who warned that you can't commercialize what you don't own and Canada doesn't own much. That's a reality underscored by your paper's finding that over 87% of Canada's innovation is foreign-owned, driven by Liberal policies, such as high taxes, regulatory burdens and a failure to protect publicly funded IP, leaving Canada, once again, last in the G7 for R and D investment and commercialization.

Global competition, innovation and technologies, especially in Kitchener Centre where I'm from, are critical as they have the largest economic impact. Do you agree that the government's policy failures have severely undermined Canada's ability to compete globally?

What can we do to reverse course?

Ryan Williams: I certainly do agree. Canada is not living up to its potential. Certainly, when we're giving away our IP willingly, we're losing jobs, we're losing on GDP and we're losing on wealth for Canadians and Canada as a whole. Let's be honest. This is a great country. We want to have world-class talent here and we do. We have some great companies here in Canada.

Certainly, the reality is there. The numbers that are there point to a different story. They're certainly fixable. The government can change this, and that's by changing our sovereignty.

I'm going to give you one example.

We spent $4.4 billion on AI, of which 75% was foreign-owned, but we also spend a lot of money on battery research. One of those is Tesla. At Dalhousie University the provincial and federal governments gave money for research to that university. Few Canadians understand that in that Tesla example, 100% of that IP at Dalhousie went to Dartmouth, which was a partnership it had, and it went back to Tesla. Therefore, none of that research was held by that university.

I have one other example. We had an Ontario company, and we gave $2 million to Hibar. It was also bought from Tesla and taken out of the country.

Again, back to my recommendation, we have to establish sovereignty. If we have public funds going into IP and research in Canada, we must, first, make the best attempts to hold the IP in Canada; second, make sure it's really hard to remove that IP; and third, when we have that commercialization that goes to Canadian companies, retain a portion of that IP.

Kelly DeRidder: Thank you. I agree that we have amazing companies here in Canada, especially in Kitchener Centre, where I'm from. I proudly declare us Canada's innovation capital because of all our innovation and technology coming from there.

I want to quickly mention again the $4.4 billion in AI investment, but 75% of that has now gone abroad to companies not here in Canada, so our public tax dollars are funding, as you said, the futures of someone else.

What specific competition-focused policies could reverse Liberal oversight, incentivize private investment and prevent IP leakage to ensure that our youth who are driving our innovation as well as our next workforce have a bright future here in Canada?

● (1140)

Ryan Williams: I appreciate the question, thank you. This is why I included why competition is in IP and data sovereignty. It's because competition in Canada is stopping research and development. When we look at companies in the U.S., at the revenues and what percentage of the revenues they are spending on R and D, it's 2%. In Canada, especially with banking, financial services and digital technology, it's only 0.5%. Why? It's because there's no competition. When companies are under the guise of competition or they have competitors, they're going to spend more to out-compete because they have that pressure. In Canada we don't have it.

The example I've given that I've pushed really hard for here in Parliament is open banking. We have five financial institutions or banks in Canada that control 85% of the banking assets in Canada. If we enact open banking and allow Canadians to have financial freedom, to be able to move from one bank to another, we're going to unleash fintechs, financial technology organizations, in Canada. We're going to allow innovation as a whole. We're going to move that 0.5% to 2% in Canada, which alone is going to transfer a tremendous amount of IP and R and D into Canadian hands, because it's a Canadian institution. Guess what? Because there are 4,000 banks in America and there are only six in Canada, when open banking is enacted in Canada and it's not all the way enacted in the U.S., we're going to be able to attract some of that investment here in Canada as well.

Kelly DeRidder: Thank you very much.

Your paper also says that there are barriers to venture capital. I agree that we're very good at educating and incubating, but then venture capitalism is not here in Canada. You'll probably have to write this answer. I'd like to know what policies need to be reversed, specifically tax policies, to drive venture capitalism here in Canada.

The Chair: Your time is up.

Now we will proceed to MP Jaczek for five minutes.

Please go ahead.

Hon. Helena Jaczek (Markham—Stouffville, Lib.): Thank you, Madam Chair.

Thank you to all the witnesses. You've certainly, each of you, emphasized the complexity of bringing product to market, to commercialization, and all the various inputs that are necessary.

I'll start with my first question to Ms. Reynolds.

You mentioned BDC in your presentation. What do you see as the role of BDC in terms of potentially insisting that any loans or financing that they offer result in a product remaining in Canada? Is there any way to do that? Is it in any way alluded to in any experience that you've had with BDC?

Grace Lee Reynolds: It's not specifically. I won't comment necessarily specifically on BDC, but perhaps on the question about retaining, how we ensure and retain. This was alluded to earlier. It's really hard work for founders and entrepreneurs to bring their business about. I think that, if the idea is to create more sovereignty around this, it has to be easier for them. That means more access to early-stage capital. You may get your first loan from BDC but, if you want that IP and you want your business to stay and grow from Canada, what else is needed? That next source of venture capital needs to also be part of Canada.

I was in a presentation this morning that talked about how, for companies here, it is just so hard to raise that next round of capital. They don't want to go to the U.S., but there is a lot of capital in the U.S. As soon as that comes in, you end up having U.S. leaders on your board. That has to shift from a capital perspective. It's hard to mandate that IP stays in Canada if the money doesn't come from within Canada.

I've probably run out of time, but the flip side of that, too, is what's critical. It's one thing to fund a company, but the company needs customers. That's how companies grow and thrive. What can we do here in Canada to help be that first customer for many of these emerging technologies? We want them to stay in Canada and then be able to seek global customers, of course, but getting that first set of customers, if we want them to stick in Canada, is something I feel that we can do, in particular, by government through procurement.

● (1145)

Hon. Helena Jaczek: Thank you.

Mr. Williams, welcome back.

I have a similar question. For Canadian products that are somehow invested in through a Canadian banking system or loan system, how do you actually mandate retaining that ownership and product within Canada?

Ryan Williams: I'm going to speak to the two parts. You mentioned BDC. The biggest issue I have with BDC is that it's not mandated to compete against the big banks, so it's not a competitor. It sees itself as complementary. Of course, it does have investment funds, but it is really risk-averse. It doesn't really like to take a lot of risk. The BDC has to be riskier when it's looking at early investment.

The second part goes back to sovereignty. We have to have rules that change that if we have Canadian IP and innovation.... Our advantage in Canada is that we do spend $10 billion a year on research. Half of that goes to—you'll have Mr. Asselin in the next round—the U15 and then half of that goes into some of the AI technology announcements we make, the research granting councils and otherwise. However, we need rules that protect that IP in Canada because investors in Canada will not invest in something they're not going to own or that is going to be bought out. That's exactly what's happening in Canada.

The sovereignty piece is so very important. We have to get sovereignty right. We have to ensure that measures or vessels like BDC are relentlessly competitive and that they compete with the big banks.

The second recommendation I gave is for the government to create a new entity that matches venture capital funding. Again, 0.2% of companies get venture capital in the U.S., but it constitutes 42% of all the R and D in private companies. That is outstanding. It is astounding. We have to mirror some of that in Canada. That means the government is not taking risks itself; it's matching venture capitalists themselves. It's matching private investment.

The government should never, by the way, be picking winners and losers. It should be private investors and we should make it easier for them to do business here in Canada.

Hon. Helena Jaczek: There is something, I believe, within the ministry of industry—a strategic innovation fund.

Is that a potential vehicle for this matching to venture capital? Are you aware of that at all?

Ryan Williams: SIF funding—the strategic innovation fund—right now matches.... When the government, for instance, puts $40 billion toward battery plants, SIF is part of that. Part of it goes through SIF and the other goes through the other channels in which we're doing innovation funding.

The problem with SIF a lot of times is that the government is choosing those winners. We saw it in the past with vaccine procurement. With Medicago and Novovax, when we were in Parliament and those initiatives failed, we found that we didn't own any of that IP. The problem was government writing contracts or putting in money or public dollars without having private backing to that.

I think we have to follow markets. Number one is to follow markets. Ensure that the government's role is to follow private financing; we want to encourage more of it. It's also to set the tax rules, so it's more advantageous for those companies to exist and to invest in Canada.

The Chair: Thank you. The time is up.

We will proceed to MP Blanchette-Joncas.

Please go ahead. You have two and a half minutes.

[*Translation*]

Maxime Blanchette-Joncas: Mr. Williams, you acknowledged that Quebec has the best data protection laws in the country. Under the leadership of the chief innovator, Luc Sirois, this model goes beyond digital and structures our entire innovation ecosystem. So we are different not only in terms of language and values, but also in terms of our research, innovation and commercialization ecosystem.

I need only think of Axelys, which turns university research into actionable intellectual property, and the Synchronex network, which coordinates college centres for technology transfer. These centres directly support our SMEs in applied innovation. Research, technology transfer and regional entrepreneurship are already connected.

In your opinion, wouldn't such a decentralized model, based on a solid and consistent legislative framework, be more effective than a centralized federal approach to retaining intellectual property and stimulating research and development in the private sector?

[*English*]

Ryan Williams: Certainly what you're speaking about is provincial versus federal legislation and jurisdiction. For instance, one of the reasons that we have any type of open banking at all is that provincial legislation, through the privacy acts in the provinces, has allowed them to operate in a certain framework. Unfortunately, the federal government for this country still has the jurisdiction over large swathes...over any data sovereignty and any trade agreements as a whole, and certainly over federal budgets. It has to be the federal government that establishes a privacy act as a whole.

We have to get Bill C-27 back in some form. I haven't heard that come out yet, so I have not seen that as a priority of this government, but we have to have privacy legislation that comes into the modern age and includes data sovereignty, which does not exist in any legislation right now.

I will go back to Quebec. Quebec does have some great examples of best practices. It certainly has the best privacy legislation to date. We need to work with Quebec and get that legislation to the floor federally right now in order to protect Quebec and Canada.

● (1150)

[*Translation*]

Maxime Blanchette-Joncas: Thank you.

In 20 seconds, do you have any other closing comments? Are there any essential elements that we should take note of, as part of this study, in order to take action?

[*English*]

Ryan Williams: I think when you look to the final study and recommendations, make sure they're recommendations that go to Parliament as soon as possible, they aren't recommendations that are five years away. I think it is so pertinent and so important right now that we need to have recommendations that go to Parliament now. I would recommend to all members of this committee that because of the nature of trade agreements and the nature of the data, the data economy as a whole, they make these recommendations to be forthwith. It's not something that we need in five years, but that we need by the end of the year. My recommendations were to have double that BERD investment by 2030.

The Chair: Thank you.

We will now proceed to MP Cody for five minutes.

Please go ahead.

Connie Cody (Cambridge, CPC): Thank you, Madam Chair.

My questions are for Mr. Williams.

I want to thank you for coming here today. Your testimony, as well as all the witnesses', has given us a lot to consider.

You made reference to Canada being a valley of death for IP commercialization and Canada facing an innovation paradox. I was hoping you might be able to expand on the role Canadian monopolies might play in this.

Ryan Williams: I think the main point on this, is yes, we only have 5% of patents in universities commercialized. That's a low number. We talked about where the best practices are. When we've had businesses engage with universities, polytechnics and colleges, we've seen a sharp increase in commercialization of that IP. We need to ensure in legislation that when we're giving public dollars for public research, the best intent possible is there to commercialize that IP. Also, we really need to bust what I call Canada's monopoly problem. Specifically that's in our financial services, banking sector, telecommunications sector and certainly digital economies.

These are the stats. When there are fewer monopolies we have more competition and then there's more R and D, and there are more attempts for commercializing IP. The number we gave was 0.5% of revenues right now from these private companies that are monopolies actually being spent on R and D where in the U.S. it's over 2%. By ensuring that the third pillar of our strategy is ensuring that we bust up monopolies in Canada in telecom, financial services and digital services, we are in effect ensuring that R and D goes up.

The second side of this is we need to make sure that the institutions are engaging with businesses. If it's in legislation that there has to be an attempt for commercialization, we will then see businesses engage with these institutions. As we've seen at Niagara College, for instance, which has done it almost the best of all colleges in Canada, we're going to see a sharp engagement with R and D and we're going to see a sharp commercialization of IP.

Connie Cody: You're correct. We also have a large college in my area and it is doing wonders with innovation.

I notice the motion mentions universities and not colleges or polytechnics. Do you think these other schools can play a role in IP?

As well, you mentioned research funding. What do you think of the follow-up process we do on the research it produces? How does it compare to the other countries? Is there anything we can learn? Is there room for improvement?

Ryan Williams: Certainly, all of that.

Yes, I would make that amendment. They should be in there. The reason I put universities is that they do receive about 97% of all the funding. What we found in our last study is that colleges only received between 2.5% and 3% of all research funding even though they outperform universities in commercialization. For polytechnics and colleges, I think the recommendation from the IP commercialization study was to increase research funding because they seem to be better at commercializing IP. I would make sure that this is also part of the recommendation that when we're increasing or seeing that same funding, let's make sure that colleges and polytechnics are getting an increase in funding.

This recommendation in effect will do that. If in legislation, there is an effect to make sure we see an attempt for commercialization through public dollars, you are going to see colleges outperform universities anyway. If there is a recoil or next budget, I think you're going to see that they are going to get more funding because they actually do that commercialization.

● (1155)

Connie Cody: I'm aware this committee undertook a study on IP commercialization in the last Parliament. I was wondering if you think the state of Canadian IP has improved at all since this last study.

Ryan Williams: No, it's gotten worse.

Connie Cody: What are the risks of Canada's digital data being hosted on U.S. services?

Ryan Williams: Some 80% of Canadians' data is hosted on U.S. servers that are located in Toronto and Montreal. These servers are here in Canada. They're under U.S. jurisdiction, meaning a U.S. court can actually go after Canadians' data in Canada. It's very concerning.

The Chair: We will close this panel with MP Jaczek for five minutes.

Hon. Helena Jaczek: Thank you, Madam Chair.

Mr. Johnson, you described how you purchased a Quebec company in order to expand your business and obviously took a good idea, a good product that was coming out of that company. I believe you were a part of the MaRS innovation strategy. Could you describe how that worked for you, and if it made a difference going through MaRS to connect all the dots to make your product?

Bruce Johnson: It absolutely did make a difference.

I want to start by saying that I fully agree with what Mr. Williams and what Ms. Reynolds said. They're doing a lot to try to create the right playing field, and what I focus on is how we put a winning team on that field.

We work to play to strengths. One thing that MaRS did was this. We developed an innovative technology with a different type of energy storage system that's very well suited for certain applications. It's not a one-size-fits-all. It was well designed for the application. The problem is, when you want the City of Toronto to buy this, there's no one else they can bid against. They can't go out to get three quotes, for example, so they don't have the ability to come to us. What MaRS did, which was really innovative, was work with the council in Toronto to get a motion passed that allowed them to purchase a green-tech technology, provided that the MaRS group vetted it and it was, in fact, helping drive towards their zero-emissions strategy for 2040.

They did a really good job of helping stickhandle the public procurement process, which was very instrumental in allowing us to get our product out in the field and then also have it as a proving ground to show other jurisdictions within Canada and elsewhere.

Hon. Helena Jaczek: Thank you.

Ms. Reynolds, you also mentioned the Canada innovation corporation that was proposed by our government a couple of years ago. How do you see that corporation assisting MaRS, or is it going to be a giant MaRS innovation centre? How is it going to be different? Will it improve the process, in your view?

Grace Lee Reynolds: Well, I'm not sure of the very specifics in terms of the design and the plan, but I think the opportunity here is to have some degree of coordination that is required, whether it comes through this particular agency or if there's some other way, as it's hard for all the organizations that work in this space to self-organize.

As an example, we've been making attempts—I know others have as well—of building collaborations and partnerships, but I think if there was a single one that was maybe quite aligned to these national areas of interest.... We hear very clearly that the government is working towards what we'll call clear domains, whether through the Major Projects Office...where we want to be able to succeed. Having some sense of coordination just helps all the different organizations on the ground that are working directly with entrepreneurs, founders and scientists to align their efforts.

● (1200)

Hon. Helena Jaczek: Are there specific areas, in your view, where Canada has a real opportunity in terms of areas of research that particularly stand out and could potentially be of global interest? Do we have strengths here in Canada that you've observed through your years at MaRS that could be commercialized and become a major trading opportunity?

Grace Lee Reynolds: Perhaps I'll speak to one area, which relates to the origins of MaRS, around the life sciences sector, which is very broad. Whether it be digital health, medical technology devices or biotech as well, there is great talent. Of course, I'm speaking—because we are located in Toronto's Discovery District, which is among the leading...globally—with respect to the University of Toronto and all the academic health science centres. There's a real opportunity, but it's actually assembling, then, all the pieces to coordinate. It's a perfect example, if we're talking about commercialization, of how we can best get these researchers, with the right types of support and training, and help them develop all of their activity into business.

The fact that we haven't been able to move as quickly on this reflects what you were asking about earlier, which was this: What could a larger agency do? It helps coordinate. My reference to self-coordinating on the ground, between organizations...in fact, we made an announcement this morning that we're going to organize around a new partnership, called “life sciences central”, to do that very thing, which is helping founders to better navigate all these supports and being much more of a storefront for investors to come in and to find these technologies.

The Chair: Thank you.

With that, this panel comes to an end. I really want to thank all the witnesses for coming today, taking time and providing the important testimony for this study.

I will suspend the meeting for a few minutes so that we can set up the witnesses for the next panel.

The meeting is suspended.

● (1200)

_____(Pause)_____

● (1205)

The Chair: I call this meeting back to order. We resume with our second panel for today's meeting.

I would like to make a few comments for the benefit of the new witnesses. Please wait until I recognize you by name before speaking. For those participating by video conference, click on the microphone icon to activate your mic, and please mute yourself when you are not speaking. For those on Zoom, at the bottom of your screen you can select the appropriate channel, for interpretation: floor, English or French. For those in the room, you can use the earpiece and select the desired channel. I remind you that all comments should be addressed through the chair.

For this panel we are joined, by video conference, by Molly Shoichet, professor, University of Toronto. We are also joined by Dr. Marc Nantel, vice-president, Research, Innovation and Strategic Enterprises, Niagara College. Our third witness for this panel is Robert Asselin, chief executive officer, U15 Canada. All the witnesses will have five minutes for their opening remarks, and then we will proceed to the round of questioning by the MPs.

We start with Ms. Shoichet. Please go ahead.

● (1210)

Molly Shoichet (Professor, University of Toronto, As an Individual): Good afternoon. Thank you, Chair and members of the committee, for giving me the opportunity to meet with you today.

I am a professor at the University of Toronto and thoroughly engaged in translational research that is turning our inventions into innovations. I am pleased to provide the perspectives of someone who is both a professor doing cutting-edge research and an entrepreneur.

At the University of Toronto, I lead a biomedical engineering lab of 25 researchers, including undergraduate and graduate students, post-doctoral fellows, research associates and technicians. All of us are working at the intersection of engineering and medicine.

My lab is funded from a diversity of sources—NSERC, CIHR, the Stem Cell Network, NFRF-T programs, philanthropy and recently the U.S. Department of Defense. While we have had some funding from industry, most support comes from federal and provincial sources, because almost all pharmaceutical companies in Canada do not do R and D here.

I have co-founded five start-up companies based on inventions from my lab. I will highlight three of them.

AmacaThera is pioneering a long-acting product for post-surgical pain, thereby tackling the opioid crisis. We have raised $17 million with our first investors in the U.S. We have a staff of about 10 FTEs and we are engaged in a series of strategic partnerships with multinational companies, none of which have R and D in Canada.

Synakis is creating a hydrogel to treat blindness. We're supported by $1.4 million from a U.S.-based company in non-diluted funding and have raised $1.7 million in grant funding.

Chase Biotherapeutics is developing a new protein therapy for use in stroke and spinal cord injury. We have raised $1.5 million in commercialization grants.

I served as Ontario's chief scientist and sat on the federal Science, Technology and Innovation Council for six years.

My message is simple: Location matters. To enhance private sector R and D investment, we need to encourage multinationals to be here, but we don't want their sales and marketing teams; we want their research teams. Researchers speak the same language.

Industry R and D follows the talent, but competition is fierce, so how can we convince multinationals that Canada is the best place for investment?

We can invite them into our leading research institutions and show them world-class collaborative scientists. This is what we are doing at the precision medicine initiative that I lead at the University of Toronto. With intentional leadership and greater investment, we can continue to expand Canada's global footprint.

Another path is through our small and medium-sized enterprises. Multinationals often stay in Canada when they acquire a Canadian SME. Amgen's Burnaby site began that way. The $2.4-billion acquisition of Fusion by AstraZeneca is a powerful example. Canadian R and D and jobs stayed in Ontario.

When early investors, including provincial funders like FACIT and the Canada Pension Plan Investment Board, recycle their gains into the next generation of innovators, we grow homegrown champions.

Greater investment from the Canadian pension funds into Canada's early-stage companies would provide capital that is desperately needed. From my experience, most Canadian companies are chronically underfunded, which means it takes us longer to get to the finish line, and since time is critical to ultimate success, this is a fatal flaw in our funding system.

Policy tools can strengthen this ecosystem, as can targeted tax incentives for biotech and health-tech investors, expanded public capital for early-stage companies from seed to series B, programs to bring experienced Canadians home and subsidies that help large firms base R and D here and support small firms to grow.

Talent is the foundation. For every Ph.D. hired, nine other jobs are typically created. Encouraging private sector R and D hiring amplifies innovation throughout the economy.

In summary, location matters. We must attract multinational R and D to Canada, create opportunities for multinational R and D teams to meet our star researchers, and invest in SMEs so that today's small innovators become tomorrow's global champions.

Thank you.

● (1215)

The Chair: Thank you. We will now proceed to Dr. Nantel.

Please go ahead. You have five minutes for your opening remarks.

Marc Nantel (Vice-President, Research, Innovation and Strategic Enterprises, Niagara College): Thank you, Madam Chair.

Thank you to the committee for undertaking this study and for inviting me as a witness.

I'm the vice-president of research, innovation and enterprise at Niagara College.

[*Translation*]

I have experience in research at both the university and college levels. I was an adjunct professor of physics at the University of Toronto for 10 years. I’ve been at Niagara College since 2011, leading its research and innovation division.

[*English*]

The invitation I received to appear in front of you only mentions “innovation emerging from research at Canadian universities”. Colleges, polytechnics and CEGEPs across the country, as we heard in the previous hour, also contribute to research endeavours with the express goals of economic development and job creation. We do this by working with Canadian companies on the development and commercialization of new products, processes and services. If you want faster commercialization, if you want IP to remain in Canada and if you want to have sovereignty over our ideas, you should fund applied researchers at colleges.

Colleges across Canada operate within 50 kilometres of 95% of the Canadian population and 85% of indigenous people. Colleges are everywhere people and businesses are. We are place-based institutions having local impacts. Our graduates are the backbone of industry. For every Ph.D. or engineer in a company, there are many more tradespeople, technicians and technologists who support them, as Professor Shoichet mentioned.

On research specifically, colleges have 500 research centres and labs across the country that worked with nearly 9,000 partners on more than 8,500 applied research projects in 2023-24 alone, resulting in close to 9,000 prototypes, products, processes and services to commercialize. Of these projects, 95% were with Canadian firms and 80% were completed within one year. There's a one-to-one match between the dollars the government invests and the dollars the company invests in these projects.

Crucially, the intellectual property developed through these projects is transferred directly to the partners in order to speed up adoption and commercialization right here in Canada. There's no complicated technology transfer process or lengthy licensing negotiations. To me, one of the best ways to transfer technology is to hire the brains who solved the problems. The more than 28,000 college students who work on research projects every year go on to become part of growing Canadian companies, making them more innovative and competitive on the global market.

[*Translation*]

At Niagara College, we've been doing funded applied research with industry for 25 years. We focus our projects in sectors of importance to the Niagara region: advanced manufacturing, agriculture and the environment, food and beverages, healthy aging and wellness, and business and commercialization.

[*English*]

In 2024-25, we conducted 370 projects with 166 industry partners and 2,250 students.

Colleges can also amplify and do bigger things for the Canadian economy, and do them very efficiently. Niagara College is the creator and leader of the Southern Ontario Network for Advanced Manufacturing Innovation, or SONAMI, which brings together nine colleges and two universities. SONAMI has been mostly funded through FedDev Ontario, but also through NSERC and, for commercialization, Intellectual Property Ontario, or IPON.

In its nine-plus years of existence so far, SONAMI has undertaken more than 563 projects with 479 manufacturers that commercialized 273 products. When you do the math, that's 48% of projects with already commercialized outcomes, but some of these projects are still ongoing or have not even been commissioned yet, so the actual percentage is much higher. These projects also created or maintained more than 873 jobs. That's more than one and a half jobs per project, or less than $27,000 of federal government investment per high-paying manufacturing sector job. Again, some projects are not quite finished or even fully started, so the numbers are even better.

Despite these contributions, colleges still receive less than 4% of tri-council federal research funding annually, which is why I support CICan's request in its 2025 pre-budget submission to provide $485 million over five years for the NSERC college and community innovation program and reach yearly baseline funding of $215 million by 2030, which would still only bring it to about 5.5% of tri-council funding.

[*Translation*]

In closing, Canada must ensure that federal investments in research lead to real impacts that support economic prosperity for all and respond to the biggest challenges we face as a country.

● (1220)

[*English*]

College applied research investments help Canadian companies thrive, grow and innovate in Canada. College applied research is efficient and leads to on-the-ground economic impact such as building homes better and faster; strengthening our military and defence capabilities, including dual-use technologies; boosting energy production—

The Chair: I'm sorry for interrupting, Dr. Nantel. Could you just wind up in the next five or six seconds?

Marc Nantel: Yes.

—and increasing AI adoption and getting major projects done.

If we want fast commercialization in Canada, fund college applied research, please.

Thank you, Madam Chair.

The Chair: Thank you.

With that, we will now go to Mr. Asselin from U15 Canada.

Please go ahead. You will have five minutes.

Robert Asselin (Chief Executive Officer, U15 Canada): Thank you, Madam Chair.

Canada's challenge is not that we lack ideas or scientific excellence. It's that we haven't yet built a mechanism to translate our research strength into sustained private sector innovation and industrial growth. The question before this committee of how to promote and grow private sector investment in R and D goes to the heart of Canada's long-standing productivity problem.

Our leading research universities are among the best in the world. They produce world-class discoveries and train the next generation of scientists, engineers and entrepreneurs, but too often, those discoveries are commercialized elsewhere because we lack a core national strategy linking discovery to deployment.

Let me offer a few facts to frame this discussion.

Canada invests just 1.81% of GDP in R and D, well below the OECD average of 2.7%. Business R and D intensity sits at 1.1% of GDP, the second lowest in the G7. Meanwhile, higher education accounts for over one-third of all R and D performed in this country, twice the OECD average, and most of it is financed by the universities themselves. In other words, our innovation economy rests disproportionately on our research universities, without a parallel industrial base to absorb and scale their output.

This imbalance shows up in firm behaviour. Between 2014 and 2022, the number of firms conducting in-house R and D fell by 4%, with deep declines in key sectors like manufacturing, agriculture and energy. Today it is just 0.4% of Canadian firms, those with 500 or more employees, that conduct half of all business R and D, while small firms, which make up 86% of our economy, perform only 10%.

At the same time, foreign-controlled companies now perform 37% of all business R and D in Canada, investing nearly nine times more per firm than Canadian-owned companies. That growing reliance on foreign innovation investment underscores the urgency of building our own domestic innovation capacity.

Between 2020 and 2022, nearly one in five Canadian businesses collaborated with post-secondary education on research. U15 universities conducted three-quarters of all industry-sponsored research in Canada, $880 million annually, involving thousands of industry partners.

Science policy is industrial policy. In the 21st century, economic power will depend on a country's capacity to innovate, adopt and scale new technologies at speed. That requires a single, coherent architecture, one that connects discovery, innovation and deployment.

What should we do?

[*Translation*]

First, Canada needs a sovereign technologies fund—a focused, mission-driven instrument to deploy public research and development in areas that underpin both our economic and national security.

Second, we must stay focused on talent. Innovation begins with people. Canada ranks 25th among member countries of the Organisation for Economic Co-operation and Development in the share of adults with graduate degrees. We cannot lead in science and technology if we cannot attract and retain the best researchers. Exempting graduate students from the study-permit cap and accelerating visa processing would send a powerful signal that Canada remains open to top global talent.

Third, it is time to put in place a modern science and technology architecture that connects research excellence to national objectives. Defence innovation is a prime example. As Canada rebuilds its defence industrial base, we have a generational opportunity to anchor a new model of mission-oriented research—linking universities, industry, and government in areas such as cybersecurity, artificial intelligence, and advanced materials. Initiatives like BOREALIS—the Bureau of Research, Engineering and Advanced Leadership in Innovation and Science—which would mobilize university research capacity to strengthen Canada's defence and security ecosystem, illustrate how this can work in practice.

In closing, let me be clear: Our universities are ready to be partners in this national effort. We are the foundation—not the end point—of innovation.

● (1225)

We work with thousands of firms every year, launch hundreds of start-ups and train the highly qualified people who drive innovation across all sectors.

However, to close the gap between discovery and deployment, Canada must now match its research strength with a renewed industrial ambition and an innovation ecosystem that lives up to its aspirations.

Thank you, Madam Chair.

[*English*]

The Chair: Thank you.

Now we will proceed to our round of questioning. We will start our first round of six minutes each with MP Ho.

MP Ho, please go ahead.

Vincent Ho (Richmond Hill South, CPC): Mr. Asselin, Canada is home to some of the leading universities in the world. You're head of the U15, so you see that first-hand. We have some of the best researchers. We have a lot of taxpayer-funded money going into research.

According to a statistic, 50% of all publicly funded intellectual property is ultimately going to be assigned to foreign firms. Do you see an issue with that? Is this a failure of this Liberal government on its industrial policy?

Robert Asselin: It's a failure of our innovation ecosystem and what I describe in my remarks as science and technology architecture that is not adapted to the modern world.

Think about innovation as a continuum. You start with talent—people—research and commercialization. At the end, you need someone to buy the services or product, right? We've been good at focusing at the beginning. As you say, we have leading research universities, but we have left the middle and end a bit on their own, hoping that innovation will just happen on its own.

What you see with other countries is that they have been more intentional at focusing public policy in the middle and end points.

Vincent Ho: We see, after 10 years of this Liberal government, that we have the fastest-shrinking economy of the G7, after adjusting for inflation and adjusted on a per capita basis.

We've see investment fleeing at a record level, a level that we've never seen before, ever since the Prime Minister took office.

Does this concern you from your perspective as it relates to the research ecosystem?

Robert Asselin: The trajectory of productivity in Canada has been a long-standing problem, to be honest. It has been stagnant over the last 30 years and certainly since the great financial crisis of 2008. This is why we don't have sustained growth in this country.

Business R and D is at the core of this. If we don't solve this problem, scale our SMEs and have businesses investing capital in the economy—

Vincent Ho: Why do you think businesses aren't investing capital in the economy?

Robert Asselin: There are two main problems, in my view, and I wrote a paper on this before I was at U15, called "Engines of Growth".

One is that industrial composition that is too tilted vis-à-vis consumption and not enough vis-à-vis production. Our economy relies too much on real estate and not enough on people who are producing things and services.

Second is the lack of scale. Per capita, we have three times fewer large firms in Canada than the U.S. so, by definition, SMEs will have a harder time. It's not their fault; it's just that they're smaller. Invest R and D in the economy.

We need, as a public policy objective, to scale our domestic companies so they can invest their dollars in the economy, in R and D, for example.

Vincent Ho: Does the tax system or the amount of government red tape play a factor in that?

Robert Asselin: I would agree with that.

We have not created an environment that is conducive to capital formation, and the regulatory framework is very heavy right now. I think it has been recognized by a lot of policy-makers. It is not conducive to people investing in the economy. I think it is true for energy projects in general, but it's also true across the board. We're not making it easy for people who want to invest capital in the economy.

● (1230)

Vincent Ho: If the government got out of the way and the taxes weren't so high, that could help spur innovation.

Robert Asselin: Honestly, there are many factors that can steer innovation. Building a more fulsome science and technology architecture, one that translates ideas into economic outcomes, is an important one, but yes, tax incentives and regulatory framework are also important.

Vincent Ho: You're seeing an absence in the ecosystem of a sort of national framework that coordinates the research, the talent and the capital, correct?

Robert Asselin: I want to underscore that this is not easy. The countries that have done this well—the United States, Israel, South Korea, the Netherlands—

Vincent Ho: Israel and the Netherlands are much smaller than Canada—

Robert Asselin: Yes, they're much smaller, but they're much more sophisticated. That would be my point.

Vincent Ho: —and they have much smaller markets than Canada, but they're still able to do it, so it's possible that we could do it, too, correct?

Robert Asselin: We absolutely have all the tools and the possibilities to make this work, but we haven't connected the dots together. We keep treating these things as silos.

I would also argue that our innovation programs—I think there are 192 of them—are not yielding the results they should. We should invest better as opposed to just investing more.

Vincent Ho: Absolutely, and get some value for taxpayer money. At 192 programs, that seems like a lot of bureaucracy.

Do you think there are any national security risks present in the research ecosystem right now due to foreign threats?

Robert Asselin: That's a great question. I'm glad that question was asked.

For the last four years, at the U15 level there is a working group on research security that I co-chair with the Government of Canada officials from ISED. Each of our institutions has research security architecture: in other words, people who are responsible for research security inside our institutions that proactively flag—

Vincent Ho: Do you think that those vulnerabilities have gotten worse in the last 10 years?

Robert Asselin: I would say that to the contrary, from our U15 perspective, the research security architecture has been much more robust and has enabled us to have better outcomes on that.

The Chair: Thank you. The time is up.

We will now proceed to MP McKelvie for six minutes.

Please go ahead.

Jennifer McKelvie (Ajax, Lib.): Thank you, Madam Chair.

My first questions are for Dr. Nantel.

I'm more familiar with collaborative R and D with universities. In those cases, the overhead on a research grant provided could be in the 25% to 40% range. It is quite high. It is a big bar to participation.

How does that work in terms of overhead that is delivered to the colleges? Also, can you speak to the advantages you have around IP? I know that in most of the cases in working with universities, we'd always put in that we have non-exclusive rights to use or reproduce the intellectual property, for non-commercial purposes oftentimes, so that we can work with that lower overhead. How does it work with you in IP?

Marc Nantel: Yes, I am familiar with the university way of dealing with overhead, because I did research at U of T for 10 years. The colleges don't get any money from overhead on research projects. Every dollar that the government puts through Niagara College to invest in research is matched at least one to one by industry in a mix of cash and in kind. I always require at least 20% cash to make sure the companies are serious and can commercialize the products of the research after the fact, but none of that comes to support our research office. It goes to the project itself.

In fact, the situation for funding of offices of research at colleges is pretty dire. We do not have access to the research support fund in any serious way. Last week, on Wednesday, $482 million was distributed through the research support fund and colleges got $2.5 million, or 0.5% of that, through a few projects, through SSHRC, probably.

It's a problem, because supporting our research office is a bit difficult. As a university professor, I had to recruit my students, write my grants and manage my projects, and all this because you can do as much research as your spouse will let you.

Voices: Oh, oh!

Marc Nantel: In colleges, the profs are hired to teach. If we want them to do research, we have to actually release them from teaching. We don't want them managing projects, writing grants, recruiting students and all that. It's done by the research office. We recruit the industry partners. We make sure that they put in their cash and their in kind.

There's something we could do to help the research office be better supported, but we're not doing it through overhead because we want the companies to come, and they're usually SMEs, so they don't have a whole lot of money to support the research office.

That was the first question.

The second question is on the advantages of IP. At the end of the projects, all IP through Niagara College for sure—but for all colleges in Canada—goes to the company for them to commercialize as soon as possible.

We retain the right to use the IP for education and for research purposes as long as it doesn't stop the company from commercializing and being competitive on the market, but we do not keep the IP. It's not what we do. What we do is train people and do economic development and job creation as much as possible.

● (1235)

Jennifer McKelvie: When you bring these companies in, are they more likely to hire your students and to give them placements after? Is that part of the discussion that does happen with the companies through your offices of research? While they're retaining the IP, is the thought that it is very much encouraged—or maybe required, which would be nice, too—that, as they expand or grow, they are hiring students out of the colleges they work with?

Marc Nantel: Yes, a lot of our graduates who have worked on a research project do get hired by the company that takes the IP and commercializes it. If they commercialize the IP, they all of a sudden need to adapt it, develop it further and then make sure that it's actually available for sale. If it's a process that they adapt into their production, then somebody is there to implement it.

A lot of times, the students get hired. Like I said, the best way to transfer technology from academia to industry is to hire the brain that solved the problem. That's one of the biggest ways in which we do that. Because we work with local companies and often with local students, it's natural for them to remain in the area, to be hired in the area and to do economic development in the area.

Jennifer McKelvie: You mentioned that a very small portion of the funds from NSERC or others flows to colleges.

How are you able to collaborate with university researchers? While the university researchers may be receiving the majority of the funds, how is that pathway for collaboration between the colleges and universities, and what can we do to improve that?

Marc Nantel: There are not many ways to do it that are institutionalized through grant opportunities. We do it because universities often have several colleges around them. There's a college in most of your ridings but not necessarily a university.

There is the example I gave of SONAMI, which has nine colleges but only two universities, Queen's and McMaster. We work with them on projects. A lot of them are collaborative. Some of them are not, and this is because they work on their own projects.

At the end of the day, it's a question of aligning the goals. Universities sometimes work on the longer time frame of the Ph.D. or the master's. The actual outcomes that generate recognition at universities are different from the outcomes that generate recognition at colleges. Papers, start-up companies and intellectual property retained are all very good stuff. In our case, it's students graduating, products commercialized and jobs created.

If we can align the prof's lab with the college's mission, it works really well, and it has for these two labs at which we work at SONAMI.

The Chair: Thank you.

We will now proceed to MP Blanchette-Joncas for six minutes.

Please go ahead.

[*Translation*]

Maxime Blanchette-Joncas: Thank you, Madam Chair.

I would like to welcome the witnesses who are with us for the second hour of our study.

Mr. Nantel, welcome back to the committee.

You have already pointed out that colleges, CEGEPs, college centres for technology transfer, or CCTTs, and technology access centres, or TACs, receive only about 2.9% of funding from the granting agencies and barely 4% of total federal funding. However, the applied research they conduct represents more than 10% of research partnerships and contracts in Canada.

Can the government really claim to support the commercialization of research with such imbalanced funding?

● (1240)

Marc Nantel: I thank the member for his question.

College research is quite recent. Niagara College has been doing industry-sponsored collaborative research for 25 years. Many colleges have been doing it for 20 years or less.

I understand that there is some catching up to do. In this regard, I don't want to focus on the past, but rather on the future. The idea is to see how we could do better from now on. It's kind of normal that universities, which have been around for a thousand years, have been doing research during that time and have gotten the lion's share of funding. However, I think there's a way to increase funding a little for what we're doing.

In 2024, I believe, there was an injection of $109 million over three years in the college and community innovation program, or CCI, of the Natural Sciences and Engineering Research Council of Canada, or NSERC, to help colleges. That funding infusion is about to end—in 2026. NSERC's budget for colleges will be cut by some $30 million, or 40%.

I therefore ask the committee to recommend that this injection of funds be made permanent and, as I mentioned in my remarks, to support the request made by CICan, Colleges and Institutes Canada, to grant colleges $485 million over five years for NSERC's CCI program, as well as to have a base fund of $215 million per year by 2030.

Even that funding would get us to only 5.5%.

Maxime Blanchette-Joncas: Ottawa often says that the private sector will make up for the public underfunding of research, but when we know that barely 3% of federal funding for applied research goes to your colleges and college technology transfer centres, is it realistic to think that the private sector can make up for such a withdrawal by the government?

Marc Nantel: Thank you very much for your question.

Everyone is doing their part. On our end, we ask businesses to match, dollar for dollar, the government's contribution. That helps us a bit. We also ask them for cash to help us make the government's investments last. That enables us to fund not our research office but the projects themselves. Funding our research office is more of a housekeeping matter, but there are better things to do.

You talk about increasing business expenditures in research and development, or BERD. Well, our colleges are contributing to that, by receiving matching funds from companies. The more the government supports applied research at colleges, the more business expenditures in research and development will increase, and the more companies will be involved in research. It's not as if, after inventing a new process, I have to find someone to adopt it. Companies come to me and say they want to commercialize it.

Maxime Blanchette-Joncas: Colleges and college technology transfer centres measure their success by the benefits, products, prototypes, patents and jobs created. Yet the federal system continues to evaluate research almost exclusively based on academic criteria: the number of publications and citations, reputation, and so on.

Doesn't this vision prevent us from recognizing the real contribution colleges make to innovation and economic development?

Marc Nantel: Colleges are dealing with the matter of equity. The Natural Sciences and Engineering Research Council of Canada, or NSERC, has a very small college program whose selection criteria correspond to what colleges can do.

However, when we try to submit a grant application to the Social Sciences and Humanities Research Council, SSHRC, or to NSERC outside the college program, we can't really compete with large universities like the University of Toronto, precisely because the selection criteria are adapted to universities and not colleges.

It is therefore important for Canada to diversify its investments. University research is very important, but it is also necessary to invest in projects that will produce results in the short term, in less than a year—in other words, college projects.

Maxime Blanchette-Joncas: Thank you.

I'd like to talk about the college technology transfer centre model, which is rigorous and rooted in the reality on the ground.

You mentioned that you require the private sector to match dollar for dollar the government's contribution to ensure its commitment to projects.

If Ottawa increased its own share of funding, wouldn't that have an immediate multiplier effect on innovation, job creation and even productivity?

● (1245)

Marc Nantel: Absolutely.

In our case, if we have more money, we're not going to ask for less matching money from companies; we're just going to do more projects, promote economic development and create more jobs. More of our students would carry out projects, and once they graduate and go work for a company, they would be more innovative.

[*English*]

The Chair: Thank you.

Now we'll start our second round with MP Baldinelli for five minutes.

Please, go ahead.

Tony Baldinelli: Thank you, Madam Chair.

Thank you to the witnesses for being with us this afternoon. It's quite an interesting conversation and area to look into.

Mr. Nantel, thank you for being here this afternoon and always responding to the calls from this committee to appear and provide your insights. I'll take the opportunity to brag a little. Niagara College is the number one research college in all of Canada. We're proud of that fact. Thank you for your work. My understanding is you'll be retiring some time in the spring, and that will be a tremendous loss to us.

I want to build on what my colleague, Ms. McKelvie, had talked about earlier in regard to how colleges are able to undertake that applied research on the ground, take that only 4% of tri-council funding and actually get it directly into the work that you're doing with local companies on the ground. You talked about the notion of research centres.

Can you talk a little bit about the ecosystem and how it's created on a college system that allows for the commercialization to happen more frequently at the college level than it does at the university level?

Marc Nantel: The question is, what are the motivations and the evaluation of what happens at the college system.

In our case, we are place-based institutions. We're here to help the local economy, and so we base our innovation centres or our research centres in the subjects that make sense for our region.

Our food and beverage innovation centre, for example, does food innovation, beverage innovation, including alcoholic and cannabis-infused products. We have projects from across Canada because we're a very specialized centre. We have our own winery, our own distillery and our brewery, so we can do a whole bunch of things, but really, it's mostly about what's going on in the region, and we respond to industry.

When I was a professor at university, I had ideas, and I pursued my ideas and that was great. I was convincing NSERC, CFI and these other agencies that my ideas were fun, and they would fund me and it was great.

In this particular case, they're not my ideas. They're industry's ideas. They want to solve a problem, or they want to create a new product, service or process, and they come to us.

Instead of trying to find a company that may want to buy our outcomes from my ideas, here it's more that we build the team around the company's idea, around the company's program. We put together the right experts, the right students, the right equipment and labs to solve the actual problem for the company. It's a different direction from which we attack the problem of solving an industry's problems.

Tony Baldinelli: Thank you.

Mr. Asselin, you recently spoke to the Standing Committee on Industry and Technology. You referenced a quote that I pulled. It was from former Google CEO, Eric Schmidt, who said “innovation power”, the ability to invent adopt and integrate technologies at scale, is now the foundation of both prosperity and security.

This summer, you spoke to the National Post. You stated, “Canada has a very competitive research sector that lacks the bridges to translate the ideas to the Canadian private sector.” So no pressure, but it's the notion of how we create those bridges. How do we create that innovation power in Canada?

You had talked about your three suggestions, retaining talent being the second one. Right now, Canada is ranking 25th in the OECD in retaining talent and recruiting, but are we also, because of the lack of IP commercialization in Canada, losing talent as well? That would be a drain as well.

● (1250)

Robert Asselin: I'll try to be very concrete with this question. We have, as I said in my remarks, I believe, a generational opportunity with defence spending to do industrial policy correctly, to link research with industrial outcomes and work at all of the phases of the innovation continuum.

I would hope, for example, that we would use BOREALIS, the science office that has been created inside the Department of Defence, to do public procurement that would allow the Canadian government, in essence, to be a buyer of Canadian technology that would have been developed in research-intensive universities, such as U15 universities. That would be a great example of how we could change the bad framework that we've had where we leak our IP, to your point, to other countries or other companies outside of Canada. I think we have to be much more intentional.

I will also cite the example of the Netherlands—

The Chair: I will interrupt. The time is up for Mr. Baldinelli.

We will now proceed to MP Rana for five minutes.

Please go ahead.

Aslam Rana (Hamilton Centre, Lib.): Thank you, Madam Chair.

Thank you very much to all of our witnesses for your valuable time.

I will start with you, Mr. Asselin. You already responded, in another question asked by our colleague, that these issues are not recent ones but have come over the last almost 30 years. Our government is here to tackle all of those issues right now.

Let me mention your recent interview in 2025 about research money. You mentioned priorities, such as establishing a sovereign technologies fund and modernizing Canada's science and technology architecture. Which research areas or emerging technologies do you believe hold the greatest promise for commercialization in Canada?

Robert Asselin: That's a great question.

Canada has a comparative advantage over key research areas, I would say. I don't mean to exclude anyone, specifically, but there are obvious ones. In the U15,seriously, quantum is one where Canada has a national advantage on the research side. AI, obviously, is well documented.

I would just also take a moment to say that this dichotomy that we're sometimes trying to make between applied research and fundamental is flawed. I will remind this committee, respectfully, that AI was created through fundamental research. Geoff Hinton at the U of T was a big reason for that. It was through fundamental research. It's not as clear-cut as people would want to say. Both are important.

Then I would say that on energy technology, we have great advantage. This country has a lot of natural resources. If you look at the industrial policy that Peter Lougheed did in Alberta with the oil sands in the sixties, which has led to enormous wealth for this country, it was through research and government directing research on these types of technologies.

Aslam Rana: Thank you very much.

As you are involved with the U15, do you think the universities and the colleges get equal opportunities in research and funding?

Robert Asselin: I would just say, respectfully, that it's different. Not all IP is equal. Some IP is really important in certain sectors, for example, related to semiconductor development. It's really high-end technological innovation. Then, some is important but more marginal, down the road, day-to-day innovation. It is also really important—I don't want to minimize any contribution—but it's just at a different scale and at different levels. I think people have to get a better appreciation for those differences.

Aslam Rana: How can we get more private companies to invest in R and D? Do you have any ideas?

Robert Asselin: That's the billion-dollar question.

Again, as long as we're not going to have more larger companies and large firms in Canada, R and D will become problematic at the private level. If we don't have a certain scale in certain sectors where innovation is important—advanced manufacturing, ag tech, biotech or energy tech—it will be hard to drive private R and D. Industrial composition is really important.

Aslam Rana: Thank you very much.

Dr. Nantel, from your perspective at Niagara College, how would you assess Canada's current position in research commercialization compared to other leading countries in the world?

Marc Nantel: While I read the same report that you do, it's been several decades now that we've actually funded research pretty well in Canada, in general. It's been harder to get business investment in research and development to follow on and for the commercialization to happen.

I completely agree with my colleague, Robert Asselin, about how the intellectual property is really a broad definition. That's why I mentioned earlier a portfolio approach in Canada's investment in research and commercialization. You have to continue funding universities to take the longer shots—the more potentially transformative shots—that give you AI, cancer cures and things like that.

At the same time in your investment portfolio, you have things that come due sooner and would give a little bit of a win every other week or every other month. That's what colleges can complementarily supply for the economy.

I completely agree that we can do better in general. I think that, given how little funding colleges get for doing their bit, we can do better there, for sure.

● (1255)

The Chair: I'm sorry, but the time is up for you. Thank you.

We will now proceed to MP Blanchette-Joncas for two and a half minutes.

[*Translation*]

Maxime Blanchette-Joncas: Thank you, Madam Chair.

Mr. Nantel, you said that colleges don't retain the intellectual property of projects carried out with the private sector and that businesses don't always have the means to promote it.

If Ottawa provided better funding for applied research, couldn't much more innovation be turned into concrete benefits for SMEs?

Marc Nantel: The answer is yes, absolutely.

We work with companies, SMEs, in a number of ways. The federal government supports them through the industrial research assistance program, or IRAP. That program allows companies to receive funding to conduct research. These funds are often allocated to CEGEPs, college centres for technology transfer, or CCTTs, and colleges to help them do research.

This example shows that slightly increasing the grants, the funding provided by IRAP, would enable industry to benefit from them for research. The funds don't all come from IRAP: A certain amount is disbursed by the company. For us, it's the same thing.

Certainly, more investment in applied research through the industrial research assistance program of the National Research Council, the NRC, would greatly stimulate production by companies involved in research.

Maxime Blanchette-Joncas: Currently, colleges, college centres for technology transfer, or CCTTs, and CEGEPs support the regional economy, training and employment. Those are exactly the priorities of the federal government.

Wouldn't it make sense for the federal government to finally fund these institutions in a way that reflects their real contribution to innovation?

Marc Nantel: It's hard to argue with that. Yes, it would make sense.

Maxime Blanchette-Joncas: To your knowledge, is there another key factor that we should not miss?

Marc Nantel: Colleges have over 500 research centres across the country. They have a wide range of expertise, from maritime technologies to artificial intelligence. There is a wide range of skills to cover in sectors that are important to the economy, whether local, provincial or national.

You can look more closely at CCTTs and technology access centres across the country. These centres could be better subsidized, as they also enable companies to carry out custom projects in partnership with technical services when they are really pressed for time.

[*English*]

The Chair: Thank you. .

We will end this panel with MP DeRidder for three minutes and MP McKelvie for three minutes.

Kelly DeRidder: Thank you, Madam Chair, and thank you everybody for coming today.

Dr. Nantel, I am part of the college ecosystem myself. I am a graduate of mechanical engineering, specializing in robotics and automation. I was also a professor at our local college. I appreciate the positive economic impact that colleges have on our R and D.

In your opening remarks today, you have actually mentioned a couple times that the best way to transfer technology from academia to industry is to transfer the brains that solve the problems. More than 28,000 college students, who work on research projects each year, go on to become part of the growing Canadian companies.

Here's the problem I see. These companies are leaving. Not only on monetization but established companies like Stellantis are leaving our country.

Can we realistically expect these talented graduates to find jobs here in Canada and drive innovation if there is a continued exodus of companies and employers? Is that devastating for both our economy and future job prospects for our students?

● (1300)

Marc Nantel: Most of the projects we do are with small and medium-sized corporations that want to grow in Canada. They are not at the point where they would leave the country. We do work with start-ups, but not that many. To be fair, they don't necessarily have the resources to match our one-to-one requirement. Some of the grant programs to which we apply require that the company be around for more than two years and have more than two full-time employees. Start-ups sometimes get bought off. Big companies sometimes are branch plants of international companies that sometimes move. Most of the companies with which we work are local companies or companies in Canada that are trying to grow from being 10 employees to being 15, 20 or 50 employees.

I have great examples including Hamill Agricultural Processing Solutions. It was a machine shop that made mostly car parts. At one point it realized there was a need in agriculture to process the growth of microgreens, such as alfalfa sprouts. We helped that company to design a whole bunch of equipment to cut, wash, dry alfalfa sprouts, and then sell them.

This company now sells these machines around the world. This is a company that doubled its staff and doubled its manufacturing space in about a year after finishing working with us. It stayed in Niagara Falls. There are several examples like this that create jobs for graduates.

Kelly DeRidder: Could companies not create more economic impact, as well, if they could monetize more than the 15 to 20...? I absolutely understand small to medium-sized enterprises. However, how do they scale more here in Canada? How can we do better with policy and monetization beyond just the 15 here in Canada and retain those companies in Canada at the same time?

The Chair: I'm sorry your time is up.

Marc Nantel: I can provide something in writing.

The Chair: Yes, please provide a written response.

We will now proceed to MP McKelvie for three minutes.

Jennifer McKelvie: Thank you, Madam Chair.

My question is for Dr. Shoichet.

Mr. Asselin outlined very eloquently the need to shift the way we do research to a more mission-oriented way, so we can really make progress on these big questions facing society. I was wondering if you had any recommendations in that regard and also about ensuring that we continue to strike the right balance between discovery, innovation and commercialization.

Molly Shoichet: I think the defence department budget and the opportunity to use that as a way to enhance Canada's security, whether it be health security, food security or cybersecurity, is a great opportunity to transform and take advantage of that opportunity for discovery and intentional research. I completely concur with that balance of investing in the future—in discovery research or the inventions that we don't even know about today—and at the same time being intentional with our innovations.

You know, I think this panel is not about colleges versus universities. It's not about Liberals or Conservatives. It's about Canada. It's about all of us working together to attract investment in R and D, through multinationals, through supporting our SMEs, or through supporting discovery and excellence. Nobody cares, outside of our little ecosystem, whether we're supporting universities or colleges. People care about the big ideas, the excellence and the opportunity to change the world. That's what we need to do as Canada. We need to have big ambitions to do something grand—not move the chairs on the *Titanic*.

● (1305)

Jennifer McKelvie: I will put this question to you, Mr. Asselin. We might run out of time, so if you don't finish, perhaps you could provide your answer in writing.

Can you speak to some of the structural changes that you think we should be undergoing to be more intentional about these big questions in science and industry that we're facing right now?

Robert Asselin: One that is really important that we missed the opportunity to do is a Canadian DARPA, a “CARPA”. It was on the table a few years ago and was agreed to by both parties in both platforms, but it somehow did not materialize. If you look at what DARPA has done in the U.S., it's nothing but exceptional, linking excellence in research to commercialization to public procurement—the full continuum of innovation.

As we think about defence, I would encourage policy-makers to really think about this model going forward. We have a vehicle called BOREALIS that we should use to emulate this model.

Jennifer McKelvie: Thank you.

Thank you to all the panellists.

The Chair: With that, this panel comes to an end. I really want to thank all three witnesses for taking the time to appear before the committee.

I have one or two quick announcements for committee members. First, next week, on November 3 and 5, we will continue our study on private sector investment in research and development in Canada.

With regard to the translation of documents received from the agencies, the translation bureau is still calculating the word count so that they can provide us with an estimation of time. After spending a few days evaluating the text, they realized that they will need to call on their colleagues at the department. They're still not able to give us a deadline, but rest assured that they are doing their best to respond as quickly as possible.

I have one last thing that I wanted to find out from the committee members. For the antimicrobial study, would members like to give drafting instructions right now or wait until we have the summary of evidence from the analysts? The analysts are working on the summary of evidence. It will be provided to all the members as soon as it is completed.

MP Baldinelli.

Tony Baldinelli: I have two things, Madam Chair. Thank you.

I'd prefer a summary of evidence first before we do drafting instructions.

Second, do we have any idea yet on the availability of the science adviser?

The Chair: She is coming on November 26. That has been confirmed.

We will wait until we have the summary of evidence from the analysts. They are working on it. It will be circulated to members and then you can give drafting instructions to the analysts.

Thanks once again.

Is it the will of the committee to adjourn the meeting?

Some hon. members: Agreed.

The Chair: The meeting is adjourned.