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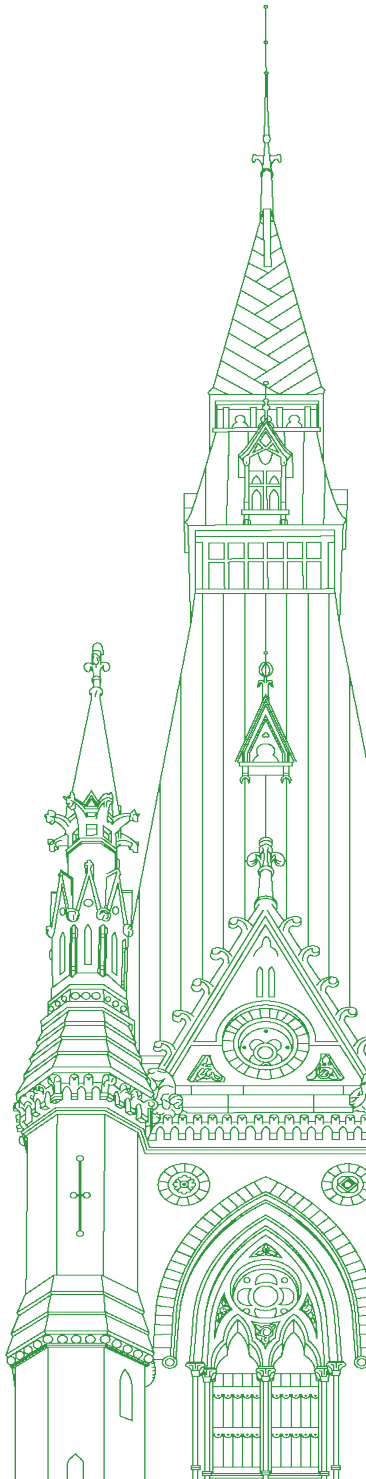

Chair: Salma Zahid

Standing Committee on Science and Research

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● (1100)

[*English*]

The Chair (Salma Zahid (Scarborough Centre—Don Valley East, Lib.)): I call this meeting to order.

Welcome to meeting number 41 of the Standing Committee on Science and Research. We are meeting today to resume our study on Canada's dual-use and defence research needs.

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. I will remind you that all comments should be addressed through the chair.

For those on Zoom, at the bottom of your screen you can select the appropriate channel for interpretation: floor, English or French.

Witnesses, I would like to remind you that committee members may ask questions in either French or English. If you will need interpretation, please take a moment now to prepare your earpiece and select the listening channel you need in advance, in order to take full advantage of the time allotted for questions and answers.

I would like to welcome our first panel of witnesses today. Bombardier is being represented by Pierre Seïn Pyun, vice-president, government and industry affairs.

Welcome.

We are also joined by, from the Council of Canadian Innovators, Daniel Perry, director of federal affairs, and Dana O'Born, chief strategy officer.

We also have, from Wuxly Defence, James Yurichuk, chief executive officer and founder.

Each of the witnesses will have five minutes for their opening remarks, and then we will go to the round of questioning.

We will begin with Bombardier.

The floor is yours, Mr. Seïn Pyun. Thank you.

[*Translation*]

Pierre Seïn Pyun (Vice-President, Government and Industry Affairs, Bombardier Inc.): Madam Chair, members of the committee, thank you for the opportunity to appear before you today. My name is Pierre Pyun, and I am vice-president of government and industry affairs for Bombardier.

Bombardier is a world-leading business aircraft manufacturer in Canada, with more than 12,000 employees proudly working to make aerospace one of Canada's most innovative industries and a champion in the export market. The aerospace industry exports about 80% of its production. For Bombardier, that figure is more than 90%. Bombardier alone represents approximately 1% of Canada's total export value and 5% of Quebec's total export value, across all sectors.

Our employees are proud to support Canada’s national security objectives. The aircraft we manufacture help countries around the world strengthen their defence capability.

[*English*]

My remarks will focus on the following: Bombardier's capabilities and impact in Canada, dual-use capabilities, and the strength of Canada's aerospace innovation ecosystem.

Bombardier has existed in Canada for nearly 85 years. Innovation is in our DNA, and we have proudly developed and certified 30 aircraft programs in 30 years to the highest safety and performance standards. Canada is among the very few countries that have the ability to design, manufacture and certify aircraft. This is a strategic domestic capability. Over the years, we have established a strong working relationship with Transport Canada. Bombardier contributed $7.4 billion to Canada's GDP in 2024.

The Chair: I'm sorry for interrupting. There's an interpretation issue. I will have to stop the clock. We need to look into it.

Okay, please go ahead.

Pierre Seïn Pyun: Bombardier supports close to 50,000 jobs across the country.

Bombardier's success is made possible by a robust network of more than 1,550 Canadian suppliers from coast to coast, demonstrating that the company is at the heart of a thriving national ecosystem.

Our work not only fuels economic growth, but it also plays a vital role in reinforcing Canada's sovereignty through innovation. Our expertise in aviation is recognized around the world.

Our expertise in business aviation also allows us to contribute to airborne defence. An important pillar of our company is to leverage our portfolio of Challenger and Global aircraft with our unparalleled engineering, complex modification, certification and maintenance expertise to offer business jet-based solutions for defence missions. We have decades of experience in this space.

Bombardier is known to be a collaborative and flexible partner. We have built long-term partnerships with governments and militaries worldwide and joined forces with the world's most advanced mission system providers. Bombardier delivers multi-mission, long-range, high-performance aircraft platforms used for different types of solutions, including intelligence, surveillance, reconnaissance, airborne early warning, signals intelligence, electronic warfare, medical evacuation and more.

Bombardier business aircraft are chosen around the world for defence missions. Some examples include Germany with the PEGASUS program for signals intelligence, Sweden for multirole government transportation missions, the U.S. Army and the U.S. Air Force for HADES and BACN, and Switzerland for medical evacuation and government transportation.

We welcome the recent federal government announcement to invest in Canadian industry by favouring a solution based on the made-in-Canada Bombardier Global 6500 aircraft. We also congratulate Saab on being selected as the preferred supplier for Canada's airborne early warning and control fleet with its GlobalEye solution.

This announcement further highlights the versatility of the Bombardier Global 6500 aircraft, as well as its growing role in Canada. Last December, the federal government announced the purchase of six Global 6500s to enhance the RCAF's multi-mission air transport capability. This March, the National Research Council announced that it had acquired a Global 6500 aircraft for critical research and development activities.

Canada benefits from an exceptional aerospace innovation ecosystem built on the strength of its universities, research centres and technical institutions. Bombardier works closely with over 25 universities and technical schools across the country, including in Quebec, Ontario, British Columbia, New Brunswick, and Newfoundland and Labrador. We have research collaborations in place, as well as training arrangements with these universities, schools and colleges. Our internship program, for instance, has supported more than 9,000 internships over the past nine years.

Bombardier has taken part in several R and D projects through various programs and initiatives, such as INSAT, CARIC, TDP, Scale AI, NSERC and Mitacs. Research areas include aerodynamics, blended-wing body configuration, flight controls, cabin systems, predictive maintenance, fluid dynamics, wind tunnel testing and sustainable technologies.

We have also benefited from a strong and long-standing collaboration with the NRC—

● (1105)

The Vice-Chair (Tony Baldinelli (Niagara Falls—Niagara-on-the-Lake, CPC)): Your time is up. Thank you.

Pierre Seïn Pyun: Thank you very much. I look forward to the conversation.

The Vice-Chair (Tony Baldinelli): We will now go to the Council of Canadian Innovators.

Ms. O'Born, you have five minutes.

Dana O'Born (Chief Strategy Officer, Council of Canadian Innovators): Thank you very much.

Hello, everybody. As you know, my name is Dana O'Born, and I am the chief strategy officer of the Council of Canadian Innovators. I am joined here for today's session by my colleague Daniel Perry.

CCI is Canada's 21st-century business council. We represent the voices of over 175 homegrown Canadian scale-ups led by innovators and entrepreneurs.

We're pleased to support this study, and we commend the federal government for recognizing that Canada's defence and economic security are inseparable. The focus on building a full pipeline from R and D to commercialization, scale-up and global sales is the right approach, and it is reflected in the new defence industrial strategy.

Around this time last year, CCI and a number of cyber and defence companies came to Ottawa to meet with a refreshed government and a new cabinet. The discussions revealed that Canada lacks a reliable source list for its dual-use sector, prompting us to launch an ecosystem-wide survey with The Icebreaker. We identified nearly 430 Canadian-headquartered revenue-generating export-oriented firms, yet few sell to the Government of Canada, and these findings underpin our recommendations to the committee today.

The survey data also told us the following: Canadian dual-use firms are developing NATO-relevant capabilities; firms view government procurement as essential, but many struggle to access Canadian customers and to navigate the system; many firms are selling to foreign governments, suggesting that Canada is not fully leveraging its own defence innovation; there is a limited understanding of security and procurement rules, and this prevents firms from bidding and complying and effectively scaling in Canada; and many firms need support although a strong group could be fast-tracked with targeted assistance.

We asked a simple question: Can Canada meet its NATO commitments and strengthen our defence industrial base? The answer is yes, yet 11 months on, many of the challenges identified in our survey persist for the defence and dual-use firms we work with across the country.

Last month, Innovation, Science and Economic Development released a report of their own on the state of Canada's defence industry". It revealed that Canada's R and D framework is suppressing the growth of small and medium-sized enterprises. Despite making up over 90% of the sector, SMEs have reduced their self-funded innovation to $136.5 million. Meanwhile, a 309% surge in government grants has created a false sense of progress as businesses survive on government research dollars instead of developing and owning their own products. For Canadian technology companies to scale globally, the federal ecosystem must reward private IP ownership and commercialization, not grant dependency.

The same disconnect appears in defence procurement. Despite a strong Canadian capability in AI, cyber and digital systems, the government is still failing to act as a strategic first customer. As a result, Canadian innovation is often being pushed overseas instead of being used to solve domestic capability needs. Both our survey and the government's report tell a story of Canadian firms finding faster success abroad than they do in Canada.

With defence spending on the rise, Canada has a chance to move from strong research and weak commercialization to turning ideas into capability, jobs, exports and a strategic advantage.

This opportunity matters even more in the context of NATO commitments. Meeting future defence spending targets is not only about how we spend but about how intelligently we invest and what we own. If we want Canada to contribute credibly to collective defence, we need a research and innovation system that can turn civilian research strengths into procurable military capabilities and export-ready companies while making the scaling of Canadian dual-use innovators a core sovereignty and defence policy priority.

This means aligning universities and colleges, granting councils such as the National Research Council, industry experts and federal departments in common missions to find faster pathways from lab to deployment.

We believe Canada should use this moment to do three things.

First, shift innovation policy towards commercialization and Canadian IP ownership. What we invest in, Canada should own, especially when it's a technology of economic advantage.

Second, make the new tools work for dual-use firms. The defence concierge service that the Prime Minister announced a few weeks ago should provide clear answers, clear pathways and clear timelines for Canadian companies looking to access government procurement opportunities.

Third, streamline and demystify the federal procurement scenarios by improving access pathways and significantly expanding targeted outreach and guidance so that dual-use firms can navigate requirements, compete effectively and scale within Canada. Without clearer pathways and stronger engagement, Canada may lose innovators, jobs and defence capacity to allied markets. We believe Canada has an opportunity here, given the capacity and intelligence that already exist right here at home.

● (1110)

Thank you so much for having us here today. We look forward to the conversation.

The Vice-Chair (Tony Baldinelli): Thank you, Ms. O'Born.

Now we will go to Wuxly Defence, Mr. Yurichuk, for five minutes.

James Yurichuk (Chief Executive Officer and Founder, Wuxly Defence): Thank you. Good morning, Chair and members of the committee. Thank you for inviting me to contribute to Canada's dual-use and defence research needs.

Before I begin, I'd like to set the stage with a quick exercise. Take a look at what you're wearing today and ask yourself, how much of it was made in Canada? My bet is this: Almost none. However, if you ask a room full of American soldiers, the answer would be nearly 100%. Why? It's because our allies have invested in the research, the innovation and the industrial base behind their soldiers' equipment. We have not. As a result, our Canadian Armed Forces are underequipped to do their job.

The data tells the same story. An independent survey of 500 CAF members found that 84% of their kit only sometimes or never fits properly, 82% buy their own kit out of pocket and 100% of the women surveyed reported fit issues. On top of this, our soldiers are paying for their own gear for protection—gear their country should be providing. At a time when we're trying to recruit and retain more soldiers, that's not good enough and it's not a good look. Every month we see new examples of this in the news.

I'm before you today to show you that there's a problem we can fix, and that everything we need already exists right here in Canada. In fact, I spent the last decade building proof of it.

My name is James Yurichuk. I'm founder and CEO of Wuxly. Wuxly is a Canadian-owned and operated manufacturer of advanced textiles, serving both civilian and defence markets, from Arctic outerwear to combat uniforms, made in Canada from head to toe. We are dual-use by design since 2015, and 99% of what we make has been made here in Canada. We employ more than 50 people in Mississauga, and we indirectly employ 300 more through our supply chain of over 100 Canadian suppliers. We have been Canadian when no one was looking.

There were three times that commitment has been put to the test. The first was during COVID, when the world was cut off from the PPE supply overnight. Wuxly mobilized and pivoted, and within weeks we started producing isolation gowns. Over the two-year period of COVID, we made 10 million isolation gowns here in Canada for nurses, doctors and our front lines. We could do that for one reason: We owned the IP and the supply chain.

The second came when Russia invaded Ukraine. We put up our hand again, delivering over a quarter million military soft goods to Europe. Included in that is 40,000 female-specific combat uniforms built around the realities of women in active combat.

The third test is in front of us right now: our own Arctic. Working directly with the Canadian Rangers, we have developed a complete cold weather system, head to toe, designed and made in Canada for the harshest conditions on earth, and we had it displayed at CANSEC. It is ready to go today.

Winter planning must start now. To me, that is what sovereignty means. It's not only fighter jets and shipyards but the ability to protect people wearing the uniform with equipment we control end to end. When taxpayers fund research here but the ownership and the manufacturing sit offshore, we end up paying to depend on someone else.

Now, remember what you're wearing. Canada imports nearly 95% of our clothing. That's $17 billion that's imported every year, and that money doesn't come back. We're hollowing out the supply chain.

It does not have to be that way. We're Canadians. We know the cold. Nobody does it like us. Nobody knows the Arctic like we do. This should be ours to lead in the high north and across NATO.

I offer the committee three priorities. First, define the “Canadian value” proposition. Canadian value means Canadian ownership, IP, manufacturing and suppliers. All four must be Canadian. Second, build clear pathways among universities, the NRC and Canadian SMEs. When academia and industry connect, dual-use research becomes equipment. The most agile innovation happens in smaller companies. Third, value total security, not lowest profit up front. A Canadian-made system buys you supply chain security, speed in a crisis, quality control and retained know-how.

Chair, before Wuxly, I spent eight years playing as a CFL football player. In that job, your equipment is not an accessory. No coach would ever send a player onto the field with the wrong pads, and we should never send a soldier into the Arctic or into combat in gear that doesn't fit, when the stakes are even higher. Gear is protection. It keeps people safe.

Our army commander, Lieutenant-General Wright, said it best: “the army we have today is not the army we need”. That includes the clothing and equipment our soldiers wear every day.

● (1115)

The question for this committee is whether we choose to build the army we need here at home or let someone else do it.

Thank you.

The Vice-Chair (Tony Baldinelli): Thank you, witnesses, for your testimony.

We're now going to begin the first round of questioning with six minutes each.

We're going to begin with MP Mahal. You have six minutes.

Jagsharan Singh Mahal (Edmonton Southeast, CPC): Thank you, Mr. Chair.

I want to thank all the witnesses for being here.

Mr. Yurichuk, you mentioned that you were present at the CANSEC award-level defence exhibition. It was a privilege to see you there. It was such a proud moment for me, as a Canadian representative, seeing a 100%-Canadian-owned company on such a world stage.

That said, the Department of National Defence procures most of its uniforms and textile-based gear from Logistik Unicorp, which is owned by an American private equity company. Can you explain to this committee how Wuxly is different?

James Yurichuk: Certainly. Thank you.

First off, ownership, manufacturing, IP, design and operations are Canadian, Canadian, Canadian, Canadian. They are 100% Canadian.

What makes us different is our speed. That was proven during COVID, when Wuxly was unequivocally the fastest producer of textiles in Canada, and we made 10 million isolation gowns here. It was proven again with Ukraine, when we made 40,000 female combat uniforms, something that the Canadian Army has been trying to figure out for decades. They're currently trying to roll out uniforms for 2027, and they've been working on those for over six years. We did it in six weeks. This is a problem we can fix tomorrow. With one call, I can fix this problem tomorrow.

Beyond that, it's the innovation. We innovate the world's best gear. Canada makes the best outerwear in the world. We have to bring that prestige back. We want to bring that back. Wuxly can lead this. However, there's also the innovation in manufacturing. Automation, AI—these are things that Wuxly studies, and we can bring value here in Canada.

● (1120)

Jagsharan Singh Mahal: Thank you—

James Yurichuk: The last thing is that we have a big, beautiful, Canadian supply chain that goes from coast to coast to coast. We activate every province and all the territories, including Inuit makers, who have the know-how of the north more than anyone in the world.

Jagsharan Singh Mahal: Perfect. Thank you so much.

Let's move on to the next question. Earlier this year, soldiers from the Canadian Army were on an Arctic training exercise in Alaska. Over 30 Canadians had to leave the exercise early because of frostbite, and some were even hospitalized. I can understand the risk of Arctic training, but injuring over two dozen of our soldiers is unacceptable. How does this show that the government is failing to provide Canadian troops with the equipment they need?

James Yurichuk: That's a great question.

These situations of frostbite usually come down to fit, form and quality gear. This is something that we absolutely have to pay a lot of attention to. I'm hearing and seeing too much of this news coming up on a monthly basis, whether that's sleeping bags, whether it's frostbite or whether it's carrier packs that have to be handed in.

We have to bring this pride back into our country right now. This is stuff that Wuxly specializes in. This is something that we'd love to be included in, but there are challenges with procurement right now. There are ways that we have to activate. We have a supply chain of 70 companies, Canadian-owned, that are ready to go and fix these problems, but we're dragging our feet and we're not getting activated. I'm hoping that the DIA can take a special look at this.

Jagsharan Singh Mahal: Thank you again.

Edmonton is home to a large military base and thousands of soldiers. I believe that Canadian troops deserve the best equipment—no question. What would you like to see done by this Liberal government so that Canadian troops have access to cutting-edge equipment while supporting Canadian industry?

James Yurichuk: I think we have to look at being brilliant at the basics. We're seeing all the headlines about the exquisite systems and the foreign primes coming into the country. Give us a shot. Give companies like Wuxly a chance to compete. Let's turn Canadian companies, SMEs, into primes. Let's look at categories in which we can be the best.

Like a Swiss watch or an Italian suit, there's something special about Canadian-made outerwear. Look at the brands, at the civilian level, that have made it over the years. A lot of the impetus came from military times, and they brought great wealth, jobs and security to the country. Clothing and gear are super important. Let's look at that now.

Jagsharan Singh Mahal: Thank you for that.

This Liberal government likes to push the buy Canadian narrative. I agree that the government should buy Canadian, when available. Why does the Department of National Defence decide to buy most of its military gear from an American-owned company, and not a Canadian-owned company, like yours?

James Yurichuk: That's a question I continue to ask. I'm glad that you're raising it here.

It doesn't have to be Wuxly, but I'd love to see it going to a Canadian company. We know we can do it. We have to open up the lens a bit more to see what the capabilities and the talent are within the country, because Canadians can absolutely do it right here.

Jagsharan Singh Mahal: That's perfect.

The Vice-Chair (Tony Baldinelli): That is a perfect way to conclude that one response and the time.

Now I'll go to my Liberal colleague, Mr. Rana. You have six minutes.

● (1125)

Aslam Rana (Hamilton Centre, Lib.): Thank you very much, Mr. Chair.

Thank you to all the witnesses for their valuable time.

Mr. Perry, you have written about communities in southern Ontario, like Hamilton and Niagara, with real manufacturing and defence industry presences. What would help small and medium-sized businesses in those communities take fuller advantage of dual-use and defence research programs?

Daniel Perry (Director, Federal Affairs, Council of Canadian Innovators): Thank you very much for the question.

Something that would help Canadian companies—and we identified in our survey, through which we found over 450 dual-use, Canadian-headquartered, Canadian-owned companies—is access to procurement. The buying Canadian legislation that was introduced in December was a good starting point, but the reality is that we need to have a clearer definition of what it means to be a Canadian company. You may put the maple leaf on your logo or say you're a Canadian company because you employ people, but that doesn't cut it. We need to think about where the IP is stored, where companies are mined and managed and where their senior leadership team is.

From there, the government really needs to look at buying Canadian when possible. We see that in the defence industrial strategy. They've committed to that.

We have a number of great Canadian companies, even inside of CCI. I think of Thornhill Medical—which is actively working in Ukraine, saving lives—and a number of other companies as well.

We need to make sure that, when we do have the capabilities, we are buying Canadian. Like my colleague James said earlier, his company is employing Canadians. They're headquartered here, but they're not getting the opportunities. We need to change that in our procurement systems.

Aslam Rana: Thank you.

You have also said that Canada should keep working closely with NATO allies while relying on our own procurement tools. What does that look like, in practice, for the dual-use and defence research sector, and which tools should the federal government be leaning on right now?

Dana O'Born: Thanks for the question. I'll just jump in and take this one, if that's okay.

I think that opportunities attached to NATO are very interesting. Many of you in the room are aware of COVE, which operates out of Halifax as the NATO DIANA base. Opportunities that are coming out of that program give companies an opportunity or advantage to get inside the NATO network. We're seeing that slowly climb up. I can't recall the stat precisely, but I believe, in the last NATO DIANA challenge, there was an overrepresentation of Canadian companies, which, of course, is a good thing for us.

The other thing we saw in the news—I think it was two days ago—is that the Minister of National Defence is heading to Japan and taking a number of Canadian companies with him. We applaud exercises like that and think they're really great. We want to make sure that slate or roster of companies is, certainly, Canadian-headquartered or Canadian-based.

Those types of exercises, I think, are very helpful. They should be a bit more expanded; it shouldn't just be the same companies time and time again. Once a company has an opportunity to do that with a minister, they get into a kind of pattern or routine. This has done a lot for the core defence companies. In an instance such as with James's company, if the Minister of National Defence called and said, “Do you want to go to Japan next week?” he'd probably say, “Okay.” Different opportunities for bringing different types of dual-use companies into the mix are very helpful.

Aslam Rana: Thank you very much.

Mr. Pyun, Bombardier contributes $7.4 billion to our GDP and supports more than—as I think you mentioned—60,000 jobs. When the firm works on defence and dual-use research with partners, such as the NRC and Saab, how do you ensure the intellectual property developed here in Canada remains in Canada?

Pierre Seïn Pyun: Thank you very much for the question.

I mentioned that we export the bulk of our production. Over 90% of our production is for the export market. Our R and D base and manufacturing base are largely in Canada. The patents, the IP that we develop, are maintained here, and they are commercialized in Canada.

Of course, we have supply chains across North America. We have thousands of suppliers in Canada, in the U.S. and in Mexico, so it is an integrated value chain.

I think it's important as we develop our defence industrial base that in some areas, maybe not in all areas.... We cannot be jacks of all trades, necessarily. However, there are areas—I would concur with what my colleagues have mentioned—in which Canada has competitive advantages, and I think we should focus on those areas and make sure that we remain on the top of global value chains.

Certainly, in our space, very few countries I've mentioned have the capabilities to develop aircraft from A to Z. This is an area in which we feel we should be investing and making sure that we preserve and commercialize IP here in Canada.

● (1130)

Aslam Rana: Thank you.

The National Research Council is acquiring the Global 6500, and Saab has proposed using the same aircraft for Canada's airborne early warning and control capability.

That puts Bombardier at the centre of two major dual-use investments. What does Bombardier's role look like in each of those partnerships, and how do they fit into Canada's Bombardier defence strategy?

Pierre Seïn Pyun: What is really common between those projects is that they have the same platform. Also, in December, the Canadian government signed a contract with us to acquire Global 6500s.

To be candid, until recently our success in defence was largely outside of Canada. I mentioned some examples with projects in Europe and the U.S. However, things are changing with the contracts that you mentioned and the additional contract that I mentioned, which we signed in December. It is the case that the Global 6500 is the common platform. We're focused on the platform, and we work with system integrators. Actually, the 6500 has become a platform of choice for many defence applications around the world—

The Vice-Chair (Tony Baldinelli): I'm going to have to stop you there, but perhaps someone else can follow up on that.

I'll go to my Bloc colleague, Mr. Blanchette-Joncas.

You've got six minutes.

[*Translation*]

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

Welcome to the witnesses who are with us today. My first question is for the Bombardier representative, Mr. Pyun.

Mr. Pyun, when Canada purchases strategic capability outside the country rather than at home, what does it lose in terms of R and D, ownership of IP, skilled jobs and even the supply chain?

Pierre Seïn Pyun: In my opening remarks, I spoke to the fact that Canada has a highly advanced ecosystem, and we are certainly an integral part of that. When you look at the size of the Canadian market, you see just how extensive the domestic ecosystem is. What's more, the ecosystem is highly developed, with a number of colleges and universities.

I argue that we should leverage that ecosystem. Certainly, the synergies between civil and military aviation are tremendous. Historically in Canada, civil aviation has been connected to military aviation. Now the defence industrial strategy is an opportunity to rekindle that connection, which other countries have. Many technologies in civil aviation originated in military aviation, including composite materials, fly-by-wire systems and heads-up displays. A number of systems developed for defence purposes were then brought over to civil aviation.

Our approach is to deploy our civil aviation expertise in military aviation. Certainly, that opportunity is emerging in Canada right now, from what we are seeing.

Maxime Blanchette-Joncas: Thank you.

Mr. Pyun, few places in the world can say they manufacture airplanes from nose to tail. Canada—mainly Quebec, where 60% of its aerospace industry is based— can make that claim, as can Toulouse, France; Seattle, U.S.A.; and Brazil.

What can the ecosystem we have here teach the government when it comes to the defence industrial strategy?

Pierre Seïn Pyun: As an industry player, we see college and university partnerships as crucial to the success of the ecosystem and the aerospace sector when it comes to defence applications. Certainly, our recommendation is to leverage that network to meet defence needs as well. That was reflected in the defence industrial strategy and in measures taken in recent months. While it may not be true for all sectors, there are definitely strengths in aerospace that can be harnessed to meet defence needs, as I said.

There's the labour problem. Labour is crucial. One of the keys to Canada's success has been the pool of skilled workers here. However, continued investment is needed to address the growing demand, and access to labour is something the industry is concerned about. That's why our partnerships with colleges and universities to build that skilled workforce are paramount to the success of the defence industrial strategy.

Maxime Blanchette-Joncas: Your point is well-taken, Mr. Pyun.

Do you think Canada should use government procurement more to develop its industrial and technological capability? Does it use that tool enough?

Pierre Seïn Pyun: We see that the government is moving towards that, with the defence industrial strategy, the buy Canadian policy and other measures it has announced. The idea is to leverage public procurement not just to meet defence needs, but also to drive economic development and homegrown innovation. It's a tool that's leveraged by jurisdictions all over the world. It's encouraging to see the government moving in that direction. As far as we're concerned, buying more Canadian products and services in certain sectors, while still purchasing things from abroad and promoting partnerships with other countries are not mutually exclusive objectives. All those things can be done at the same time. With the growing level of investment in defence, it's not a zero-sum game.

● (1135)

Maxime Blanchette-Joncas: Mr. Pyun, you mentioned Saab's GlobalEye solution, which is built on the Global 6500. What role could Bombardier play in the GlobalEye solution? How could Quebec, specifically, and all of Canada, generally, benefit?

Pierre Seïn Pyun: The GlobalEye aircraft itself is based on a Bombardier model built in Canada, the Global 6500, which we manufacture using our supply chain in Canada, but also elsewhere. We're in talks with Saab to lead the aircraft modification process, here in Canada, and system integration. It's going to generate economic benefits, but it will also create more jobs for Canada on a net basis. The details have to be worked out with Saab and possibly other partners. I think we're going to see opportunities for other partners in Canada to play a role.

Maxime Blanchette-Joncas: That's great news.

What's your main recommendation to build long-term defence industrial capacity in Canada?

Pierre Seïn Pyun: I think my fellow witnesses talked about that.

[*English*]

It's good to see in the defence industrial strategy that there's a pillar around R and D. Canada wants to augment its R and D investment in defence by 85% in the years to come.

Overall, we're starting from afar, because if you look at the U.S., for instance, 15% of their defence spending is in R and D in defence. In Canada, I haven't seen reliable stats, but I believe it's around 5% or maybe below 5%. We have some distance to go, but we are encouraged by the build-partner-buy framework. For the build part, if the technology doesn't exist in Canada, I think there need to be ways to commercialize technologies. It's been an issue and a challenge for Canada.

The Vice-Chair (Tony Baldinelli): Thank you for your comments.

We're going to begin the second round of questioning with MP DeRidder.

You have five minutes.

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

Thank you, everybody, for coming today.

Ms. O'Born, Kitchener Centre is Canada's innovation capital, with many companies that are developing innovative technologies for both civilian and defence applications. The survey you mentioned today identified almost 430 Canadian companies developing dual-use technologies, yet few are supplying the Canadian government.

Why is there such a significant gap between what Canadian firms are capable of providing and what government is actually procuring?

Dana O'Born: Isn't that the big question we're all here to answer today?

I think it's a number of things. Obviously, it's exposure to the Canadian government and just sort of understanding. There is a new generational tone that we have not seen, as a result of geopolitical tensions and this focus on Canada. As a reminder for all the members in the room today, the council was founded 10 years ago by Jim Balsillie, a veteran of the tech ecosystem in the region.

To answer your question more specifically, I'll lean on my colleague's comments from earlier today, which I've written down here: “We have been Canadian when no one was looking.” We're at this new juncture of the economy in which we really need to double down on our Canadian strategies, our plans and our investments and think those through. I don't think it's enough to say, “Let's put some money into a Canadian company to see how it grows”, and if they have a sale globally, that's a single marker of success.

There are so many organizations that have stepped up to the plate. We saw this during COVID, and now we're seeing it again in the defence space. On dual use, I think it's particularly interesting, because so many civilian applications can have military applications as well.

Kelly DeRidder: Thank you.

You've noted that many Canadian firms are finding greater success selling to foreign governments. I have a couple of examples. Right in Kitchener are Alchemy and SkyWatch.

What are the long-term implications of that trend going to be for Canadian sovereignty, industrial capacity and defence readiness?

● (1140)

Dana O'Born: We're not going to build our capacity here in Canada; we're not going to build our capabilities, and we're not going to build our defence industrial base. That is the antithesis of what we're trying to accomplish with the defence industrial strategy.

Kelly DeRidder: Thank you.

Mr. Yurichuk, your testimony today about innovation, ownership, IP, manufacturing and supply chains being “Canadian, Canadian, Canadian, Canadian” from coast to coast to coast was incredibly impressive. You manufacture not only what we need but a really important way to keep our troops safe, which is proper gear.

You did mention in your testimony that you think the problem is with procurement. I agree. Right now there's this buy Canadian narrative, but we're not really buying Canadian in a lot of sectors, yours included.

I'm going to ask you a question that probably keeps you up at night.

Why do you think the government is choosing to procure with Logistik Unicorp, which is owned by an American private equity firm, instead of a company that is Canadian from coast to coast to coast like your own?

James Yurichuk: That's a great question.

During this low-power-mode military time that preceded us, I don't think folks really looked out and got into market much. We're seeing a huge ramp-up right now, but they only knew what was right in front of them, and often that had to be in Ottawa and it had to be in these hallways here. That's how they're known, but it's so much more than that.

We saw at CANSEC that there are many companies raising their hands right now, and we have to activate these different companies. We have to get pen to paper. It took us six months to get the DIS out, and we're still rolling it out, but we have to start getting these contracts out in a meaningful way for Canadian companies, because they're all leaning forward right now, and there's a runway.

Kelly DeRidder: Thank you.

I have time for one more question, so I'm going to ask it of you, Mr. Perry.

Recently a new AI document was put out by the minister. I'm sure CCI has reviewed it by this point. Do you guys see a strategy or a plan that's going to get us to where this document says we're going to go?

Daniel Perry: Thank you very much for the question.

When it comes to the AI strategy, we were members of the minister's task force, so we had very high expectations but also very strong recommendations. Like many Canadians, we were looking forward to seeing what the document entailed. When it came out, to be quite frank with you, it missed the mark. When it comes to targets measuring what the strategy is looking to do, that's what's missing in there.

With that said, we were very eager to work with this government, work with the opposition and work with everyone, because at the end of the day, when we do have a good AI strategy—

The Vice-Chair (Tony Baldinelli): With that, I'm going to have to stop you.

I'll go to my Liberal colleague Mr. Noormohamed for five minutes.

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

I thank the witnesses for being here.

Mr. Yurichuk, I am from British Columbia, so I'm not going to hold against you the fact that you won a Grey Cup with the Argos, but it does allow me to ask you one important question.

What's the total value of federal government contracts that you've had at Wuxly?

James Yurichuk: We're getting close to $130 million to $140 million.

Taleeb Noormohamed: What proportion of your total business would that make up?

James Yurichuk: I'd say it's about 60% to 70%.

Taleeb Noormohamed: Is it fair to say that you are seeing a substantial benefit because of the Canadian government's procuring from you?

James Yurichuk: Yes, indeed.

Taleeb Noormohamed: You've been critical of some components of the government's approach. As we look toward buying more Canadian and ensuring not only that Canadian suppliers have the best products, which we clearly do, but also that the means by which to acquire them is in place, I think we would all agree that these things don't happen overnight.

Over the course of how long have you seen your trajectory of government business grow?

James Yurichuk: We've been around 10 years, and we've been committed. Similar to my friends at Alchemy, we're one of those classic companies that sells a lot more out of country than we do here to our own Canadian army. We service Ukraine and we service the Nordic region, but—

● (1145)

Taleeb Noormohamed: Walk me through this. I hear this, and I want to make sure that you are selling more to Canada and doing more. You just said that 60% to 70% of your business is done with the Canadian government—

James Yurichuk: Yes.

Taleeb Noormohamed: —but you say you're selling more abroad. Walk me through that logic.

James Yurichuk: There was a one-time instance during the COVID period, which was a large tranche of that, but that was our proof of track record of what could be done when we're activating another company rather than going through a sole-source supply chain.

In our particular situation, there is not a great chance for any Canadian companies to come in and be meaningful contributors with direct contracts with the government, because there is a legacy 20-year contract in place that there is very little competition for, and it's something to look at. There is room to look at adding a second prime and adding a Canadian prime. That's something that we're working on now.

Taleeb Noormohamed: That's important. It would be great, as we expand the amount that we're acquiring and as we expand the spending—and it's on truly unprecedented levels—to ensure that we're doing that.

You know that buying Canadian is a priority, so companies like yours that have the experience, I would imagine, would be part of that conversation, but I don't want to understate the point that the Government of Canada has been part of your business, and we're glad that you're doing that. It's important for all of us, but it's also important for us to make sure we're giving the feedback that helps to do those things, which I hope these conversations do.

I'll turn to you, Mr. Perry.

One thing that is important for all of us is that those of us who have had to build companies did that outside this country and raised capital outside this country. Historically, it's been harder for Canadian companies to acquire and raise capital in this country and to build their businesses here.

I would submit that this has happened regardless of political party. There has been, over the course of the last number of decades, in fact, this view that in order to be successful, you have to go outside. I think for the first time in our history we've reached a moment at which Canadians are saying, “Actually, do you know what? Being Canadian and investing in Canada matter.” This should matter, and it should be what drives us.

You and the companies you are affiliated with are dealing with investors. How do we unlock, particularly in dual use—in which there's a huge opportunity right now—the investor psychology to say that investing in Canada first and investing in Canadian companies and in Canadian start-ups right now is what matters so that those companies are in a position for government to be their first and best customer?

Daniel Perry: I would defer the question to my colleague Dana.

Dana O'Born: Thank you so much for the question.

I'm sorry to jump in. This is not an interruption; this is a thought.

The ITB program is an interesting tool that could be re-examined to be leveraged. I think most people in the room are aware that it's being passed over to the DIA, as I understand, within the next few weeks.

The ITB program has unlocked a number of opportunities and capital through the prime network, and there's still a number of unused contributions. I was having a conversation with a CEO the other day, who's looking to raise capital for a small defence start-up, and I suggested that there might be an opportunity to think about how capital through the ITB program could be unlocked.

BDC is another example. We need to move faster on capital getting out the door from there and make that capital more fluid and flexible. EDC does a really good job, but I think those are just some of the tools.

The Chair: The time is up for MP Noormohamed.

Thank you.

Now we will proceed to MP Blanchette-Joncas for two and a half minutes.

[*Translation*]

Maxime Blanchette-Joncas: Thank you, Madam Chair.

In your experience, Mr. Pyun, do Bombardier and companies like yours miss out on innovation and R and D opportunities, not to mention industrial benefits, because of how long procurement processes take in Canada?

Pierre Seïn Pyun: I would say two things to that.

First, with the defence industrial strategy and the new defence investment agency, we've seen a change in the past few months. I'll give you an example. The contract we signed in December is one of the first through the new agency. That was a faster process.

The second point I want to make comes back to what I said about innovation. An area where the government needs to do more work is the innovation acquisition process. That's a different approach. It involves trial and error, I would say, with a different type of risk tolerance and a modular approach.

I agree with what was said about the industrial and technological benefits policy and the benefits that have been generated. However, it will be important to engage with the industrial base on innovative solutions early, before the request for proposal process to address future requirements and consider solutions Canada's industrial base can provide.

● (1150)

Maxime Blanchette-Joncas: All right.

I want to discuss labour again. It's essential. You need more than just robots to build airplanes. What could the federal government do to support specialized schools? They are the ones that deal with Transport Canada certification. We know there's going to be a critical need for labour. What can the federal government do to make the situation better, to anticipate that demand and provide for training requirements?

Pierre Seïn Pyun: There is a federal sectoral council that has estimates of future labour requirements for the aviation sector as a whole.

Take Quebec, for example. Its sectoral committee on the aerospace workforce, the Comité sectoriel de main-d'œuvre en aérospatiale, estimates the aviation sector will need to fill 65,000 jobs in the next decade. That's not just in manufacturing. The figure includes the rest of the industry, airlines, airport services and so forth. That means there's a lot of work to do.

More training capacity is needed, because the schools in Quebec are full. Other training resources are needed. There's a program in the U.S. to bring veterans into the industry, or help with that transition. A similar program in Canada could be helpful.

That's a potential choke point for the industry.

[*English*]

The Chair: I'm sorry for interrupting. Time is up for MP Blanchette-Joncas.

We will end this panel with four minutes for MP Ho and then four minutes for MP Deschênes-Thériault.

MP Ho, please go ahead for four minutes.

Vincent Ho (Richmond Hill South, CPC): Thank you, Madam Chair.

First I have a question for Mr. Pyun at Bombardier.

The Liberal Prime Minister has pursued what he called back in January a new “strategic partnership” with China, focused on security, trade, energy and economic co-operation.

Last year you wrote in an article the following:

> We should always seek collaboration, integration and interoperability with the United States. However, this should not preclude Canada from standing on its own in key areas and becoming a contributor of national security knowhow and technologies for our allies.

Do you agree with the Prime Minister's view of having Canada seek deeper collaborations and relationships with Beijing?

Pierre Seïn Pyun: My point, when I wrote this piece, was that we have a very important relationship with the U.S. in defence and security. There's no question about that. We have common obligations, such as NORAD, so we should keep on reinforcing this linkage and investing in this relationship, but it doesn't preclude us from diversifying our partnerships with other countries. It's not a zero-sum game.

With respect to China, there has been some guidance on sensitive sectors and non-sensitive sectors. We have activities in China. They're focused on civilian aircraft.

Vincent Ho: My next set of questions is for Mr. Yurichuk at Wuxly.

The Liberals often use the term “buy Canadian” as an empty slogan, but their so-called buy Canadian policy does not appear to guarantee that Canadian defence dollars will primarily support Canadian citizens, Canadian engineers, Canadian manufacturing jobs or Canadian-controlled IP.

Should a real buy Canadian defence policy require Canadian ownership, Canadian control and Canadian workers when national security is involved?

James Yurichuk: Yes, I agree that ownership, IP and operations should all get special credits when we're looking at buy Canadian. We have to prioritize.

In our case, when we look at textiles, this is an industry that had 200,000 workers in 1980. We made 70% of the clothing here in Canada. Today we're down to 30,000 workers in the textile and apparel industry in Canada, and it's less than 5% that's made in Canada. However, there is hope. We have 20 schools here in Canada that specialize in apparel and textiles. We have to activate these universities and give them long-term jobs and customers in the Government of Canada for some of these clothing projects.

Vincent Ho: Canada has world-class defence equipment firms, including your own, that are clearly capable of producing advanced equipment for export to allied militaries around the world.

When Canadian companies can sell sophisticated platforms, equipment and technologies abroad, but the Canadian Armed Forces struggle to procure modern equipment here at home from our own homegrown companies, doesn't that prove the problem is not a lack of Canadian know-how, talent or industrial capacity, but a failure of government procurement, political will and a national defence prioritization?

● (1155)

James Yurichuk: In the Canadian industry, we know what we're capable of. We've been signalling to Canada what we're capable of. Our allies know. They seek out our equipment. We're hoping that some of the activations with the DIA start to address this and we really give a special focus to bringing Canadian firms, making them the anchors here in Canada, putting them under the tent, partnering with them early and building the giants here at home.

Vincent Ho: Thank you.

The Chair: Now we will proceed to MP Deschênes-Thériault for four minutes.

Please go ahead.

[*Translation*]

Guillaume Deschênes-Thériault (Madawaska—Restigouche, Lib.): Thank you.

Mr. Pyun, thank you for your participation.

For the benefit of folks following the committee's proceedings this morning, could you tell us how our investments in R and D benefit the Canadian economy, on a practical level? Investment in R and D helps innovation and businesses, and ultimately, it creates jobs. I would say it benefits all Canadian workers.

Pierre Seïn Pyun: Yes, absolutely. As I mentioned, we have an extensive aviation ecosystem here in Canada. It includes many colleges, universities and other such institutions, which contribute to both R and D and training and education. It's a relationship with tremendous synergy. It's important not to take that ecosystem for granted and to keep investing in it.

The industry has benefited greatly from R and D programming through the Natural Sciences and Engineering Research Council of Canada, Mitacs and others, because it fosters those university partnerships. Developing and commercializing IP here is paramount to our success.

I talked about labour. That, too, is an area where co-operation with the ecosystem is needed. We need the support of colleges and academic institutions to train people. We can't do it on our own.

Guillaume Deschênes-Thériault: Yes, you said you have partnerships with over 25 colleges, universities and schools across the country. What conditions are necessary to successfully take an idea from concept design to commercialization—to commercialize a research idea? How does it work for you? I'd also like to hear what you have to say about IP in that regard.

Pierre Seïn Pyun: Yes. Having system integrators like us is certainly a good thing. I said earlier that few countries in the world have the domestic capability to develop aircraft from A to Z. Few countries have that whole ecosystem. That's why it's important for Canada to preserve, and invest in, the vehicles it has for commercialization. Obviously, private sector companies like us, with our aircraft manufacturing, are one of those vehicles.

I also talked about the importance of leveraging defence procurement to drive homegrown innovation and technological commercialization. That means developing a new procurement process and culture, because until recently, the government has focused on acquiring existing solutions.

Going forward, the government will need a new approach to innovation, one where the relationship with the domestic industry is a two-way street. That means setting out fewer strict requirements at the beginning and instead working with the industry to build requirements that meet Canada's needs.

Guillaume Deschênes-Thériault: Thank you.

Ms. O'Born and Mr. Perry, could you tell us how the investments we are making under the defence industrial strategy can make a real difference for small businesses in our ridings?

I'll give you an example. My riding is home to a specialty clothing manufacturer. On the civil side, it has contracts with police and fire departments. On the defence side, it just completed a contract to supply Ukraine with specialty winter coats. That's thousands of coats designed and manufactured in Canada, in my riding, and shipped to Ukraine. There are real opportunities for economic development. Could you talk a bit about how our defence strategy investments represent opportunities for small and medium-sized businesses?

[*English*]

Dana O'Born: Thank you very much for the question. I hope it's okay that I will be answering in English.

This is a great opportunity to think about the work that my colleague James is doing and to maybe make some of those connections in your local community.

It's not very often that I get to ring the bell that I am from the Maritimes, but I am from Nova Scotia. A few months ago, there was a major investment made in Greenwood, Nova Scotia—to the military base down there. Having spoken with some of the folks in the community there, it was sort of shocking—

● (1200)

The Chair: Give a quick 10-second answer, please.

Dana O'Born: Building capacity in small communities that aren't used to that type of investment is going to be really interesting and really important, as is building some of the networking infrastructure.

James, maybe we should get you out to Nova Scotia.

James Yurichuk: I'd love that.

The Chair: The time is up for MP Deschênes-Thériault.

I would like to thank all the witnesses for appearing before the committee today. On behalf of all the members, thank you.

With that, I will suspend the meeting for a few minutes so that our witnesses for the first panel can leave and the witnesses for the second panel can take their seats.

The meeting is suspended.

● (1200)

_____(Pause)_____

● (1205)

The Chair: I call this meeting to order.

Welcome back for the second panel.

I would like to make a few comments for the benefit of all the members, as well as the 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. All comments should be addressed through the Chair.

I would like to remind witnesses that committee members may ask questions in either French or English. If you need interpretation, please take a moment now to prepare your earpiece and select the listening channel. You need to take full advantage of the time allotted for questions and answers.

With that, I would like to welcome our three witnesses for today for this panel.

We are joined by Colleges and Institutes Canada, represented by Michael McDonald, vice-president, external and member relations. We are also joined by the National Research Council of Canada, represented by Dr. Julie Lefebvre, vice-president, emerging technologies, and Dr. Shannon Quinn, the secretary general. The third witness for today is Niagara College, represented by Dr. Marc Nantel, vice-president, research, innovation and strategic enterprises.

Welcome to all of you.

All the witnesses will have five minutes for their opening remarks, and then we will get into the rounds of questioning.

We will begin with Colleges and Institutes Canada.

Mr. McDonald, please go ahead. You will have five minutes for your opening remarks.

Michael McDonald (Vice-President, External and Member Relations, Colleges and Institutes Canada): Thank you very much, Madam Chair and members of the committee, for the invitation to testify today.

My name is Mike McDonald. I'm vice-president of external and member relations at Colleges and Institutes Canada, or CICan.

[*Translation*]

CICan is the national and international voice of Canada’s publicly supported colleges, institutes, CEGEPs, polytechnics, and indigenous learning institutions.

I am here today to deliver a key message: To ensure that Canada's defence research investments realize their full potential, the government will need to take full advantage of colleges and the applied research system, seeing them as crucial partners.

[*English*]

Realizing the full ambition of the defence industrial strategy and other defence investments will require the federal government to more strategically engage partners equipped to address the persistent gaps in Canada's innovation performance, including low business investment in R and D and lagging technology adoption.

With proven expertise in industry-driven, impact-oriented, place-based training and research, colleges are national leaders in preparing talent for high-demand technical roles and supporting business innovation and technology adoption, including in defence-relevant sectors such as AI, aerospace and marine engineering.

Already, according to Statistics Canada, 94% of colleges conduct R and D in emerging technology areas with potential for dual-use applications. Examples include the Southern Alberta Institute of Technology's centre for innovation and research in unmanned systems, Red River College Polytechnic's aerospace and manufacturing technology access centre, Durham College's AI hub, Cégep de Trois-Rivierès' telecommunications and research centre and Nova Scotia Community College's marine engineering facilities.

Through nearly 500 state-of-the-art research centres and labs nationwide, including in northern and Arctic regions, college research supports close to 9,000 partnerships annually, most of them with Canadian SMEs to test, prototype, adopt and scale new technologies. This focus will be vital for turning defence innovations into new products and, conversely, ensuring that new technologies can be harnessed to defend Canada.

Colleges' agile research model, which is driven by industry needs and allows partners to retain intellectual property, attracts nearly one dollar in private investment for every dollar of federal funding in applied research.

Moreover, by engaging students in applied research projects and delivering skills-focused training, colleges are the front lines of ensuring that we have a steady pipeline of talent equipped to meet the evolving needs of the Canadian Armed Forces in the defence industries.

● (1210)

[*Translation*]

In other words, college research provides the very expertise a thriving defence sector needs, as well as skills training, business innovation and technology adoption.

Nevertheless, federal programs geared towards defence research do not provide colleges with a clear pathway or full access to support applied research in the defence sector. For example, the innovation for defence excellence and security program prevents colleges from leading projects under the innovation networks stream or partnering on such projects. In addition, the costs to meet research security requirements associated with defence research programs are rising.

[*English*]

To address these challenges and ensure that college research capacity is fully leveraged in support of the defence industrial strategy and other investments, CICan is proposing the following four recommendations.

Ensure the full eligibility of colleges in federal research funding programs, including programs administered by DND.

Invest in an applied research technology adoption stream within the bureau of research, engineering and advanced leadership in innovation and science, and make colleges fully eligible for that.

Establish a defence-readiness and onboarding pathway stream under the National Research Council's IRAP defence industry assist program to support industry partnerships with post-secondary institutions to help SMEs integrate and strengthen defence supply chains.

Provide post-secondary institutions, including colleges, with adequate funding to meet the research security requirements associated with defence research.

[*Translation*]

Thank you. I would be happy to answer the committee's questions.

[*English*]

The Chair: Thank you.

We will now proceed to the National Research Council of Canada.

Dr. Lefebvre, please go ahead. You will have five minutes for your opening remarks.

Julie Lefebvre (Vice-President, Emerging Technologies, National Research Council of Canada): My colleague Shannon Quinn will be making the introductory remarks.

The Chair: Dr. Quinn, please go ahead.

[*Translation*]

Shannon Quinn (Secretary General, National Research Council of Canada): Thank you, Madam Chair, for inviting the National Research Council of Canada, or NRC, to appear before the committee as part of its study on Canada's dual use and defence research needs, and to discuss the NRC's role in supporting defence-related innovation in Canada.

With me is Julie Lefebvre, our vice-president of emerging technologies.

[*English*]

I would like to begin by acknowledging that the work of the National Research Council of Canada takes place on the traditional ancestral and unceded territories of first nations, Inuit and Métis. Across the country, where our research and innovation activities occur, we recognize our responsibility to work in partnership with indigenous communities. As Canada strengthens its capabilities in science, technology and innovation, including those that support national security and defence, we are committed to engaging with indigenous peoples in ways that respect indigenous knowledge, priorities and rights. Meaningful collaboration with indigenous partners helps to ensure that advances in areas such as emerging technologies, climate resilience and security contribute to the well-being of all communities in Canada.

[*Translation*]

Since its inception in 1916, the NRC has played a central role in Canada's research and innovation system. Defence-related research has long been part of its activities, advancing technologies with both civilian and military applications.

During World War II, the NRC supported Canada's defence science and technology efforts by developing innovations such as nuclear energy, radar systems and protective equipment like anti-gravity suits to enhance the safety and effectiveness of Canadian forces.

After World War II, the NRC shifted its focus to dual-use research and innovation and to strengthening the Canadian economy. It was in this context that the NRC Flight Research Laboratory was established more than 80 years ago, jointly by the Royal Canadian Air Force and the NRC. Since then, it has played an important role in the development of Canada's civil and defence aerospace capabilities.

● (1215)

[*English*]

Today the Department of National Defence is the NRC's largest client. Over the last 10 years, the NRC has carried out an average of 29 million dollars' worth of defence-related work with DND annually. Across our research centres, the NRC is advancing capabilities in drones, Arctic vehicles, photonics, quantum technologies and artificial intelligence, just to name a few. These are all aligned with the evolving needs of the Canadian Armed Forces.

Looking to the future, the NRC's scientific expertise, long-standing collaboration with the Department of National Defence and the Canadian Armed Forces, and strong connections to colleges, universities and Canadian SMEs position us to support Canada's defence industrial strategy.

The Government of Canada committed $996 million to the NRC to support the defence industrial strategy, including the NRC's IRAP defence industry assist initiative, which will help SMEs develop defence and dual-use technologies.

[*Translation*]

An NRC drone innovation hub will help Canada test and validate drones and advanced autonomous systems, thereby helping Canadian companies bring promising technologies to the operational stage. Quantum technologies are another key area of focus. The NRC has expertise in quantum sensing, computing and communications and materials.

[*English*]

Through initiatives such as the quantum sensors challenge program and the quantum safe technologies initiative, the NRC is advancing capabilities in secure communications, sensing and computing with potential for both civilian and defence uses.

The NRC is also delivering a biomedical countermeasures initiative to bolster sovereign capacity for development of biologics and the manufacturing of diagnostics, vaccines and therapeutics against defence priority biothreats.

In addition, the NRC hosts five test centres as part of NATO's DIANA, providing environments in which innovators can test and validate emerging dual-use technologies.

In summary, the NRC continues to advance national research and innovation priorities, contributing to Canada's sovereignty by developing and deploying critical capabilities for the military and helping strengthen Canada's defence industrial base.

Thank you, Madam Chair. We look forward to answering the questions of the committee.

The Chair: Thank you, Dr. Quinn.

We will now proceed to Niagara College.

Dr. Nantel, you will have five minutes for your opening remarks. Please go ahead.

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

I'd like to thank the committee for undertaking this study and for inviting me as a witness.

[*Translation*]

My name is Marc Nantel, and I'm the vice-president, Research, Innovation and Strategic Enterprises at Niagara College.

[*English*]

I have experience in research at both 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.

[*Translation*]

I'm here representing the college system in general, and Niagara College in particular. Our graduates are the backbone of industry: for every Ph.D, MBA or engineer in a company, there are many more trades people, technicians and technologists who support them.

[*English*]

The current challenge of bringing Canada in line with its NATO promises and other national defence, sovereignty and security imperatives will require a whole-of-system commitment, collaboration and coordination.

One key aspect of all this will be speed: speed of response, speed of pivoting, speed of delivery for Canada. All targets of this study—universities, colleges, the NRC, industry and government departments—will have to contribute. Some of these will go deep; some will go far, and some will go high. Colleges across the country will do that, but they will also provide speed.

Our role in helping Canada with its dual-use and defence research needs can be broad, but let me boil it down to just two components and one tease: education, applied research and research networks.

I will give you some specific examples from my college to illustrate what's possible.

On education and speed in delivering the people we need, Niagara College is the first public post-secondary institution in the country to launch new defence-specific education programs. These are the defence systems engineering technician and technologist programs, or DSET. These programs are available this very fall, in 2026, in response to the urgent need for talent in this sector. The new DSET program will focus on the design, construction and deployment of drone technology—ground-based, aerial and marine—and build on unique photonics programs that we've been offering for 25 years, from which many of our graduates found jobs at local defence suppliers, such as L3Harris and Raytheon ELCAN.

In our DSET program, students will learn all the safety, design, sensors, 3-D modelling and printing, mechanical, electronics, photonics and payload skills they will require to have rewarding and productive careers supporting Canada's dual-use and defence production and research needs.

● (1220)

[*Translation*]

They will support sectors such as aerospace manufacturing, defence, marine robotics, public safety and emergency services, mining and natural resources, and agriculture and entertainment, to name a few.

[*English*]

In research, it's about the speed of delivering new Canadian products we need. Colleges are best placed to help companies pivot to be part of Canada's ambitious dual-use and defence supply chain, which Prime Minister Carney wants to boost to reduce our dependence on other countries. As my colleague from CICan pointed out, 94% of colleges conduct R and D in emerging technology areas with dual-use applications, working closely with industry. We must maintain and sustain our Canadian manufacturing capacity, and we must do it at speed.

As we see our neighbour to the south grow increasingly protectionist with its auto industry, for example, some of our manufacturers in that sector must be able to pivot from auto to defence. However, it's not just about manufacturing. At Niagara College while we have our Walker Advanced Manufacturing Innovation Centre helping tens of manufacturers every year, and it is key to our DSET program, we also have our food and beverage innovation centre, which can work with food processors and providers to develop products for military uses. We have a horticultural and environmental sciences innovation centre working on controlled environment food production for harsh conditions, such as in the north or arid landscapes. We have our healthy aging and wellness innovation centre, which is developing tools for dementia and mental health that could be applied to soldiers with complex conditions such as PTSD or other psychological ailments.

Industry and community partners retain the intellectual property developed through these projects, so commercialization is delivered at speed.

The tease I promised at the beginning is on research networks. This committee has heard me speak in previous studies on the Southern Ontario Network for Advanced Manufacturing Innovation, or SONAMI. Since my time in this opening statement is limited, I'll hope that you can ask me questions about it, and we can cover it then.

In the meantime, I'll say that I wholeheartedly support the request made by my colleagues Michael McDonald from CICan and from a previous session, Ken Doyle, from Tech Access Canada. Colleges can do more and do it at speed.

Thank you.

The Chair: Thank you, Dr. Nantel.

With that, we will proceed to the rounds of questioning. We will begin our first round with MP Baldinelli for six minutes.

Please go ahead.

Tony Baldinelli: Thank you, Madam Chair, and thank you to the witnesses for being with us this afternoon.

I'm going to begin with Dr. Nantel.

Thank you for always being available when the committee asks for presentations and testimony, as well as for your technical knowledge and expertise.

I want to follow up on the notion of the speed with which you say colleges can reply and provide that type of talent. At Niagara College and other colleges across Canada, what opportunities exist going forward to get more involved in dual-use technologies in Canada's defence industry? You mentioned you're now the only college so far to develop a three-year defence systems engineering technology program and then also a two-year defence systems engineering technician diploma program.

Can you explain that a little further?

Marc Nantel: Thank you, and through you, Madam Chair, Niagara College has a long-time program in photonics, which is how I got involved with the college. We found that our graduates would find most of their jobs in the defence industry because of the knowledge of sensors and the combination of mechanical, electronic and photonics. With the call to the country to do more on defence and dual use, we decided to pivot and serve these companies better, maybe with a more focused graduate.

We were able to turn this program around fairly quickly, in less than a year, to welcome these new students in the fall. It's being very well subscribed, I'm happy to say. This program will be very well connected with the research program at the Walker Advanced Manufacturing Innovation Centre to develop, with industry, new products that they can use in that supply chain for industry.

When I say at speed, it's because a lot of us are ready. We already have a bunch of innovation centres and research labs that do projects of all sorts of different durations, from a few weeks if it's tests, to maybe a year. We're not looking at generating years and years of articles or Ph.D.s.

● (1225)

Tony Baldinelli: The key to the college sector, I would suggest, is the immediate help that it provides SMEs that come to it for assistance with regard to research. You talked about L3Harris and Raytheon. We also have in our community Genaire. We've got De Havilland, as well as Airbus helicopters—in our community since 1984.

What work does Niagara College do with these organizations?

Marc Nantel: We've worked with these companies, of course, over many years. These are companies that manufacture aircraft, some of them fixed-wing, some of them with rotating wings, and a lot of what they do has very exacting precision requirements. In our Walker Advanced Manufacturing Innovation Centre at Niagara College, we have the reality-capture scanning devices and coordinate measurement machines that can help these companies figure out if they have the rig properly assembled and if the jig is the right one. The company says, “We designed it on a computer and then we built it, but we need to verify that it's the right one.”

There are also first-article inspections: They produce one piece and they want to know if it's the right one. We can do all of that for them, and we have been for many years.

Tony Baldinelli: That's fantastic.

Again, it's the notion of speed and the willingness of the organizations, because you're right there on the ground. In the testimony that we've had in several different hearings, I've always noticed the ability of colleges and CEGEPs to immediately translate those demands by businesses into results, as opposed to the long-term research that takes place at the universities.

We're spending over $10 billion on public research. Unfortunately, the college level gets only about 3% of the total funding that is made available by the federal government. For example, in this recent economic statement, the government committed $165 million over five years to the college and CEGEP level, but I believe you had asked for $485 million.

I wonder if both you and Mr. McDonald can comment on that.

Marc Nantel: Michael, do you want to take that?

Michael McDonald: That's an excellent question.

For what this moment particularly asks for, I think the core of it is that across the country, Canada continues to be a world leader in discovery and research, but we continue to have discussions, and this committee has had discussions on a regular basis, about the ability to capture that for economic gain in Canada and for direct returns on that.

The Canadian college applied research system has been built to do that and has continued to show results, as can be demonstrated by my colleague down the table, in delivering clear economic returns for SMEs in their localities.

As for your point and your question, 80% of the projects that a college undertakes are done in a year. This is based on the speed of business, and that's also why businesses continue to match a dollar of investment to a dollar of federal investment. We're extremely happy with the investments we received in the spring economic update, but with investments, this system can do more.

Specifically, in terms of this question today around ensuring that defence investments turn into benefits for both the Canadian Armed Forces and for the Canadian economy, we think we're well positioned to do that, and we would encourage government to explore that avenue.

Tony Baldinelli: Before I conclude, I want to say thank you, Mr. Nantel. I understand you're retiring at the end of the month. Niagara College is the number one research college in Canada, and I believe that's due to the leadership that you've shown over the last several years, as well as your willingness to appear before these federal committees with your testimony, your input and your advice, so I'll thank you for everything you've done. Don't be a stranger.

● (1230)

The Chair: Thank you, MP Baldinelli.

We will now proceed to MP Eyolfson for six minutes. Please go ahead.

Doug Eyolfson (Winnipeg West, Lib.): Thank you, Madam Chair.

I'd like to thank all the witnesses for coming.

The first question I have is for Dr. Quinn.

My background is in medicine, particularly emergency medicine. You mentioned some of the research that the NRC funds in biomedical sciences and biological threats. Could you expand on the type of research there and how that can be applicable to expansion into general medicine and civilian medicine?

Shannon Quinn: I'm happy to do so. Thank you for the question.

The NRC has research on two tracks, both of which I think are responsive to your question and useful in the defence and dual-use space.

On the one side, we are doing research on medical countermeasures. This is vaccines and other biologics. We have capabilities and facilities that allow us to do the research right from the lab scale, up through producing sufficient quantities for clinical trials and then moving into commercial-scale production, in which we own but don't operate the biologics manufacturing centre. That full end-to-end capability, we think, is going to help Canadian companies take some of these advances in biologics all the way through to seeing them in use in our Canadian Armed Forces, but equally in the civilian sector as well.

On the other side, we have programs in medical devices, which have both civilian and defence uses. In particular, when you think about rapid diagnosis by our Canadian Armed Forces, especially in remote locations, there's significant interest there. Of course, it has use in civilian applications throughout our north and other more remote locations.

Doug Eyolfson: Okay, thank you. This segues very nicely into my next question.

You mentioned development of this in remote northern areas. One thing I know about for military in remote northern areas is environmental injury, by which I mean injury because of either heat—depending on where they deploy—or the cold. I practise in Winnipeg. We have cold winters and hot summers. Is there any research on those particular injuries that you can see when having to operate in these remote, extreme environmental conditions?

Shannon Quinn: Well, maybe I would say there are some related activities. On the medical devices side, we have active research in how to train both troops and medical practitioners using virtual reality and other simulated environments that can help in preparing for some of these situations.

I would also say there's some prevention that's called for in these types of circumstances. We heard from some witnesses earlier who talked about the need for adequate clothing and other types of protections. On the civilian side, we have an Arctic and northern challenge program, in which all of the projects that we do are co-led by northerners and our Inuit partners. In that space, when it comes to being able to thrive in some of these harsh northern environments, we certainly have a lot to learn from our Inuit partners to benefit from their expertise in that area. That is an area we're working on with them to understand some of these protective clothing options that are coming out of their expertise.

● (1235)

Doug Eyolfson: Thank you.

Further on devices, this is one of the problems I dealt with. I used to fly for our air ambulance service, and we used to fly to very remote northern areas. One of the challenges we had was in finding devices, like monitors and transport ventilators, that would continue to work in -35°C to -40°C. Is there research on medical devices that will operate when you're in these extreme environments?

Shannon Quinn: Yes, although they may be slightly different from what you're talking about. We try to keep our research focused so that we essentially take our research and see it all the way through to application in the field. In the area of medical devices, one of our areas of strength and expertise is microfluidics, looking at rapid diagnosis in the north and elsewhere. In those circumstances, we are working to make sure that those devices ultimately work in the environments in which they're intended to be used, including in the north.

Doug Eyolfson: Thank you very much.

The Chair: The time is up.

Now we will proceed with MP Blanchette-Joncas for six minutes.

Please go ahead.

[*Translation*]

Maxime Blanchette-Joncas: Thank you very much, Madam Chair.

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

Mr. McDonald, I would like to return to a rather important issue that Colleges and Institutes Canada has raised on several occasions. These were the cuts made in the latest budget to the College and Community Innovation Program. I understand that the government has finally woken up, realized its mistake and reinjected funds in its economic update. However, there is still a shortfall of approximately $5 million.

And that's not even counting the small percentage of Canada's total research investment that your members already get, if I'm not mistaken. What's the exact percentage?

Michael McDonald: I'm sorry; could you repeat that?

Maxime Blanchette-Joncas: How much do you get? Is it approximately 3%?

Michael McDonald: Yes, it's about 3%. It depends on the year. It varies between 2.8% and 3%.

Maxime Blanchette-Joncas: Okay. So, you're getting 3% of the total budget. They wanted to cut your budget by about $40 million, but ultimately they reversed course. There is progress but not much. At least we are not going backwards. That said, I still think we are going backwards, since the budget was, in fact, cut by $5 million.

I'd now like to return to the whole issue of recognition for colleges and CEGEPs. You're doing extraordinary work with technology centres, in particular, but also with the college centres for the transfer of technology in Quebec, the CCTTs. From what I understand, you're ready to be part of the solution for the defence industrial strategy.

How are you positioning yourselves so that the government will finally recognize your expertise and your importance?

Michael McDonald: Thank you for these fantastic questions.

First of all, I believe we are engaging with all levels of government, particularly the Department of National Defence, but also other departments involved in defence innovation and research.

We showcase what our system can do, as well as the capabilities and expertise available across the country—including the CCTT network in Quebec—that can directly meet the government's national defence needs.

I believe that what we can do—and what we continue to do—is showcase our work, the speed at which we carry it out and the results we achieve. Every year, we're able to provide an update with exact figures on the number of partnerships, interactions and resulting products. I hope that presenting these facts and figures will help us achieve a victory. We'll keep at it.

Maxime Blanchette-Joncas: Thank you.

What specific expectations do you have of the government in order for you to share this strategy?

Michael McDonald: I have made four recommendations. However, for starters, the government must commit to viewing us as a key partner in all these discussions.

As we have already mentioned, there are options in almost all of the announcements made in recent years. This includes Canada's national artificial intelligence strategy, which was unveiled in recent weeks. You can see that there is a section that identifies colleges and CEGEPs as key players. This also includes discussions on the defence industrial strategy. In this context, I think it’s clear that we are essential for workforce development and applied research. We are currently in contact with all branches of the armed forces and will continue this engagement.

We will also create the College Defence Training and Innovation Network, which will bring together 60 of our colleges and CEGEPs specializing in defence. Together, we are working on research and workforce issues to ensure we can meet the direct needs of the government and the military.

● (1240)

Maxime Blanchette-Joncas: Thank you very much.

Ms. Lefebvre, I'd like to revisit a government decision regarding the industrial research assistance program run by your organization, the National Research Council of Canada. This is a critical program that operates across virtually all regions of Canada. However, the government has decided to transfer it to a new entity called the Canadian Innovation Corporation.

I'm trying to understand what the National Research Council of Canada—which is Canada’s largest research and innovation organization—was unable to do with the industrial research assistance program that the Canadian Innovation Corporation will be able to do.

Julie Lefebvre: I will ask Ms. Quinn to answer that question. My apologies.

Shannon Quinn: This is really a policy issue, and it should be directed to the Department of Industry.

For us, the industrial research assistance program is truly very important to the innovation system here in Canada. Furthermore, we are working hard to ensure that this program continues to make significant contributions.

Maxime Blanchette-Joncas: Ms. Quinn, my question was why?

What can the Canadian Innovation Corporation do that the National Research Council of Canada was unable to do for this industrial research assistance program?

Shannon Quinn: For our part, we do a lot with this program. Whether it's with us or with someone else, I have no doubt that it will be a rather effective program.

Maxime Blanchette-Joncas: Did the government not tell you the reason for its decision?

Shannon Quinn: We are dealing with that now to ensure that the program helps to respond to current defence-related challenges.

[*English*]

The Chair: Your time is up.

[*Translation*]

Maxime Blanchette-Joncas: Okay.

Madam Chair, would it be possible to get a written response to this question, which simply asks why?

[*English*]

The Chair: You can send in a written answer to the committee. That would be great. Thank you.

With that, we will now proceed to our second round of questioning and begin that with MP Ho for five minutes.

Please go ahead.

Vincent Ho: Thank you, Madam Chair.

My first round of questions is for members of the National Research Council.

I have some questions about the industrial research assistance program, IRAP. It is described as Canada's leading innovation assistance program for SMEs, small and medium-sized enterprises, designed to help companies increase innovation capacity and take ideas to market.

According to your website, the NRC has integrated DEI considerations into many of its operations, including the IRAP, to assess potential impacts of its policies, programs and initiatives on diverse groups.

If the purpose of the IRAP is innovation and commercialization, why does the NRC have DEI considerations in a program that should be judged on technology, productivity, commercialization and return to taxpayers?

Shannon Quinn: Thank you, Madam Chair, for the question.

The NRC recognizes the fact that innovation comes from all parts of Canada. It comes from all parts geographically but also from people all across this country. We want to make sure that the country benefits from the innovative ideas that are everywhere. We want to ensure that those companies, those small and medium-sized enterprises that are looking to innovate, all have access to the programming so that we really get the best that this country has to offer. That's why we do track the DEI—

● (1245)

Vincent Ho: That doesn't really answer the question.

Does the NRC use the DEI and identity considerations when assessing IRAP funding?

Shannon Quinn: We track it to make sure there are no barriers to particular organizations or groups. We want to make sure that our programs are as accessible as they possibly can be.

Vincent Ho: The NRC evaluation criteria says that IRAP funding has been integrating gender-based analysis plus, also known as GBA+, into its operations. If an IRAP funding application indicates that ownership, the board of directors or executives are from an under-represented group, can it increase the likelihood of funding?

Shannon Quinn: For the IRAP programming writ large, we have industrial technology advisers, who are out there all across the country. They live in the communities they serve, and they really get to know the businesses that come forward. The projects that are brought forward are assessed on a merit basis.

Vincent Ho: Okay—

Shannon Quinn: We're trying to make sure that all of those companies that are meritorious, no matter where they are and no matter who leads them, have access.

Vincent Ho: You said that it's on a merit basis, and it doesn't matter who they are or where they're from. That sounds great, but in the application, it's pretty lengthy. There's an entire DEI section about the firm asking what percentage of your business is owned by visible minorities or by women and what percentage are the executives, and you have to list the names of the individuals who identify as women. You have to identify what percentage of the board of directors is from these under-represented groups.

If you're saying it's all based on merit, then why are we tracking all this information? Why do grant applicants have to fill out all of this information?

Shannon Quinn: Over the long run, we need to have the data so that we know whether our programs are serving all Canadians, so we're committed to gathering the information that will allow us to report on that on a go-forward basis.

Vincent Ho: How much weight is given to these DEI requirements or identity markers? Is it purely based on merit?

Shannon Quinn: For the IRAP program, it is based on merit.

Vincent Ho: Can you explain how gender—

Taleeb Noormohamed: I have a point of order, Madam Chair.

Could we stop the clock? I couldn't hear the answer fully. Could you ask the witness to repeat the answer, please? I couldn't hear it properly.

Vincent Ho: This is eating up my time.

The Chair: I'll stop the clock.

Can you quickly answer?

Shannon Quinn: The answer was that it's based on merit.

The Chair: Please go ahead, MP Ho. You have 26 seconds left.

Vincent Ho: When you get the applications back and ask for these identity markers, how do you verify whether the identity markers are true? Is there any kind of verification mechanism? If someone says they're indigenous, do you just take it at face value?

Shannon Quinn: We rely on self-identification.

The Chair: The time is up.

We will now proceed to MP McKelvie for five minutes.

MP McKelvie, please go ahead.

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

I want to follow up on some of the lines of questioning that we've been hearing today, because I feel that there's a bit of an assault on women in science and in technology, which I think is incredibly important.

I will point out that it was former Conservative minister Rona Ambrose who created programming to ensure that there was this equity out there, particularly for women in the fields of STEM.

I'll get to my question for you, but I wanted to point out the importance of unique teams and how important it is to have women there, as well as some of the contributions they have made. For example, in automotive, there are windshield wipers, turn signals—

The Chair: I'm sorry for interrupting, MP McKelvie.

I request that all the members stop the crosstalk. Please allow the person whose time it is to speak. I'm hearing voices from both sides. I request that you respect the other members' time.

MP McKelvie, please go ahead.

Jennifer McKelvie: As we're looking at excellence in technology, ensuring that we are going down this road of dual use in defence, for example, and recognizing that in many cases women are now soldiers and taking leading roles in the military, it's important to have them at the table.

Could you comment on how the diversity of teams leads to better outcomes? I'll point out, particularly in the military, that we know women have different needs around body armour, flight suits, rucksacks and footwear. Why is it important that we're including women in the teams that are out there doing this research at the NRC?

I'll put that question to Dr. Lefebvre and Dr. Quinn.

● (1250)

Julie Lefebvre: You could imagine that ideas come from a diversity of perspectives, as well as the importance of ensuring that, as we develop technologies, we are mindful of the demographics of Canada and of the ability to serve all Canadians. With that, you get much better products, you get much better innovation and you're able to address all the needs of Canadians.

Jennifer McKelvie: Thank you. I find that comforting, because I have a cousin who is serving our country in Latvia right now with NATO, and I have a niece who is out serving in Halifax and may be deployed. It's important that the equipment we are designing and the research and development we're doing are suiting their needs, as well as those of all Canadian soldiers. It's important to have diverse teams out there.

I want to pivot my questions to Mr. McDonald.

In the past, we've spent some time talking about colleges and their unique role. As we're embarking on this dual-use research, what are the particularities that make colleges very well suited to this? I will point out that we've heard, for example, differences in the way IP is owned, as well as differences in overhead.

There are some advantages with colleges that I'm hoping you could elucidate.

Michael McDonald: That's a fantastic question.

I think that we would highlight the specific pieces as follows: First, it's a partner-based research model, which means that the company coming in the door—or potentially the Canadian Armed Forces coming in the door—has a specific problem being responded to by our research centres. That, at the end of the day, is core to a college applied research system, and it changes what that is geared towards. Curiosity in research is extremely important, and if somebody has a problem, so is being able to respond to that directly.

The second point is that intellectual property remains with the partner. At this point, as an academic institution, we're not necessarily geared towards commercializing the IP itself. That stays with the firm that had the business case, that had the idea. They wanted to move forward with this and being able to empower that, and 99% of our partners are Canadian firms. Ensuring that Canadian firms are empowered with their IP and going forward for future investment and scaling are essential points, as is making sure that they are able to commercialize effectively.

The last one is the speed. This is all based on models that are able to turn around. Eighty per cent of the projects are done within a year, and that aligns, from what we understand from our business partners, with their business cycles in a way that responds to what are pressing needs, to develop and innovate products in a way that's needed. We think this maps particularly well on the conversations about what the Canadian Armed Forces may be needing, and I'd highlight remarks from Vice-Admiral Topshee—I think he was on the Curse of Politics last year—in which he highlighted that some of the clearest innovations they were seeing within the forces were examples in which repurposed technology, which included things like target drones being repurposed to accomplish different services, would then allow a greater capacity. That's exactly the kind of thing that the college applied research system constantly does and helps firms walk through, and we think it then plays a really key and vital role within this.

Jennifer McKelvie: Are you following the defence innovation secure hubs? Do you see a role for colleges to participate in that? In particular, I know that, so far, quantum drones have been a major focus. Are you participating? What other areas do you think those defence hubs should be focusing on that colleges could play a role in?

Michael McDonald: Across the country, the applied research system for colleges has specialization in a wide variety of areas, and it's specialization. I'd highlight an example such as Centennial College, which has a landing gear innovation lab. It's very particular, about the landing gear and being able to improve that. In questions where that becomes...whether vertical takeoff and landing equipment, whether drone technology, that plays a role.

On the question of drones, multiple different centres, including that of Marc Nantel.... I would let him respond on that. On our specializations, I would go to SAIT polytechnic in Calgary, which focuses on.... There's a wide variety of others: marine technology.... These are all areas that underpin defence, but there are also areas of health care. There are also areas around serving some of the social services elements. These are areas that the college applied research system functions in as well. Depending on what the challenge and need is, that's, I think, the question that we would come to: Bring us your problems; we have research centres that can tackle those and find the partners who are best able to meet those questions.

The Chair: Thank you. Your time is up.

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

Please go ahead.

[*Translation*]

Maxime Blanchette-Joncas: Thank you, Madam Chair.

It's my turn to greet you, Mr. Nantel. I would like to thank you for your tremendous contribution to the committee's work. It's always a pleasure to see you again and to welcome you. I wish you a well-deserved retirement, and I hope we will have the opportunity to invite you back.

You are very familiar with applied research, small and medium-sized enterprises and the journey from idea to market. Since this study started, several witnesses have said that Canada does not lack research, but that it struggles to transform its discoveries into products, businesses, intellectual property and even industrial capabilities that remain here.

In your opinion, what is the main weak link in this chain? Is it prototyping, testing, securing early customers, government procurement or even scaling up?

● (1255)

Marc Nantel: Thank you for that question.

We could make improvements to more than one area. We certainly don't have military complexes like they do in the United States, for example. As a result, the government has rarely been a major client of innovation from companies, universities and colleges. So, it's a little more difficult. That's why some of our companies are doing things like—

Maxime Blanchette-Joncas: Madam Chair, on a point of order: Is it possible to ask my colleagues on the committee to be quieter and to show respect for the witnesses and for fellow members who are asking questions?

[*English*]

The Chair: I said this before, but I really want to ask all the members to please allow the member who is speaking to speak, because crosstalk creates noise. It is difficult for the member who has the time, as well as for the witnesses to reply. I would request that all of the members please respect members' times.

Thank you.

Please go ahead.

[*Translation*]

Marc Nantel: Thank you.

It's true—we don’t yet have a supply chain that would allow the government to source from Canadian companies. That's why they're selling their products elsewhere. However, we will succeed in building one.

I'm going to draw a bit on the example of the defence secure innovation hubs that your colleague mentioned to highlight another shortcoming. The government has very high requirements for the laboratories it uses, which must be secure in several respects. However, it's rare for colleges or universities to have such facilities. When I was doing my Ph.D., it was here, in Building M23 on Montreal Road, and the military was working right next door. They had everything they needed to conduct military research safely.

If resources could be allocated to help universities and colleges upgrade their laboratories so they can participate in the defence secure innovation hubs, that would be very helpful.

[*English*]

The Chair: Thank you.

We will now proceed to Mr. Holman for four minutes, and then we will end the panel with MP Nathan for four minutes.

MP Holman, you have four minutes.

Kurt Holman (London—Fanshawe, CPC): Thank you, Madam Chair, and thank you to all of the witnesses for visiting the science and research committee.

Canada's defence and advanced manufacturing sectors increasingly require technicians, engineers, cybersecurity specialists and skilled trade workers. My question is for you, Mr. McDonald, representing Colleges and Institutes Canada: Are Canadian colleges currently producing enough graduates to meet that demand?

Michael McDonald: It's an excellent question.

These are key positions, not just in the defence industry but for the economy in general. Given some of the other areas of ambition that both this government and the provinces have engaged in, there are significant demands on technicians in high-tech fields.

In those areas, we continue to see that those graduates have very high and positive outcomes when they continue, but these are clearly in-demand fields, and not just for today. It looks as though that will be the case going forward.

As labour market information becomes clearer on additional demands, it may become important that we continue to fund and expand those kinds of roles—given the demand across the country, across sectors and across focus areas.

Kurt Holman: Communities such as London—Fanshawe, the riding I represent, are home to advanced manufacturing, defence suppliers, aerospace companies and skilled trade programs. How important are colleges in ensuring that defence research translates into something for Canadian workers, Canadian production and Canadian industrial capacity, rather than remaining confined to laboratories?

Michael McDonald: This is fundamentally what the college system does. It is our job to serve our business partners and our other community partners and deliver the innovations and applications of research that they ask for. At the end of the day, delivering those things best aligns with the chances that they are going to turn into market returns for the firm, the entrepreneur or the company that's able to move and scale, and they know their market best. Our ability to help them is what we pride ourselves on, and being able to deliver that return.

These investments do not need to do just one thing. They don't even need to do just two things. They need to do three and four things, with that vital connection that turns this into other roles, including the training capacity.

I also want to emphasize that we especially ensure that veterans who are coming out have opportunities to take their know-how and come back into the innovation economy. We think we play a role there. I think Fanshawe is a leading example of the work that's done there, with their militarily connected college and the role and expertise that they set forward.

● (1300)

Kurt Holman: Thank you.

How much time do I have, Madam Chair?

The Chair: You have one minute and 30 seconds.

Kurt Holman: I would like to give my remaining time to my colleague MP DeRidder.

Thank you.

Kelly DeRidder: There seemed to be a bit of a reaction when my colleague asked questions about merit-based hiring. I'm going to disagree with the reaction, and here's why.

As a woman in STEM, I'm glad it's merit-based, because I went to school, got educated, got into STEM, applied to the job on my own merit and got the job. If it diverts from anywhere beyond that, there are two consequences that happen: First, I question if I'm there just because I'm a woman or if it's because of my qualifications; second, sitting in those boardrooms, people question if I'm just a DEI hire or if I'm there on my own merit.

My question for the council is this: Why ask the questions, then, if it's on merit?

Shannon Quinn: It's important that the NRC, as a federal organization, serves the people of Canada, and we want to serve all the people of Canada equitably. There's no either-or in terms of DEI or merit. In fact, it is the experience of the National Research Council of Canada that we do better research, better development and better innovation when we bring to bear the full breadth of the diversity that this country has to offer, so we try to make sure that we track whether we're fully accessible in our programming.

The Chair: Thank you, Dr. Quinn.

We'll now end this panel with four minutes for MP Nathan. Please go ahead.

Juanita Nathan (Pickering—Brooklin, Lib.): Thank you, Madam Chair, and thank you to all the witnesses who are here today.

I'll direct this question to Dr. Nantel.

Many students may not view defence-related industries as a traditional career path, despite growing demand for highly skilled workers...especially women.

What has Niagara College learned about attracting students to emerging fields, such as drone systems, photonics and advanced manufacturing, and how can we encourage more young Canadians to pursue careers in these sectors? If you have any special programs to attract students, especially women, to these fields, can you talk a bit about them?

Marc Nantel: Thank you for the question. That's a very good question, and I wish I had a recruitment person right next to me to tell me what they are doing specifically.

As an example, Niagara College is open to the community to come and visit our labs at any time. One big event that we have had every year for the past two years, and I hope it continues, is a FIRST robotics competition at our Welland campus. It brings in about 1,000 high school students, along with their parents, who have built a robot to compete in a particular contest. They spend the weekend at a big festival of robotics, and they visit our labs and talk to our recruiters. There are a number of students from diverse backgrounds, diverse sexual orientations and genders, and diverse countries of origin who come to the college for such events and then learn about our programs. That's one example.

We recruit a lot of students internationally, although fewer than before, and we welcome these students and advertise all of our programs in STEM or other subjects to them, including hospitality, health care and all of that.

We really need domestic students, especially now, and we want to make sure we capture as many as possible. We try to communicate to all of them as best we can.

Juanita Nathan: Thank you for that answer.

Perhaps I can pose the same question to you, Dr. Quinn.

In research, do you see more women participating now than you did before?

● (1305)

Shannon Quinn: We do, and we see across our own organization the very significant contributions that women are making.

Perhaps I'll turn to my colleague Dr. Lefebvre, because she is very active in this area.

Julie Lefebvre: We do keep track of our hires, for example, in order to look at the demographics of those who are applying and, from a merit perspective, are getting opportunities and jobs with the NRC. We've seen a really nice representation and interest coming from women.

Moving forward, we start to see them in some areas where, for example, there might be less representation, particularly in some of the physical sciences, which fall under my division, with increased engagement and interest coming at much higher levels, beyond post-doc. They are even applying for actual positions. It's been very nice to see the progress over the past seven years or so since I've been at the NRC.

Juanita Nathan: That's very good. Thank you so much.

The Chair: You have 17 seconds.

Juanita Nathan: Okay.

I would like to thank all of you for joining us here for the study.

The Chair: Thank you, everybody. On behalf of all the members of Parliament, I really want to thank all the witnesses for appearing before the committee.

I wish Dr. Nantel a happy retirement. Thank you for all the work you have done in this field.

Before we adjourn the meeting, I want to mention a few things.

Monday, June 15, will be our last meeting before the summer adjournment. We will have drafting instructions to the analysts for the study of governance and accountability of federal science policy, the institutions and the EV study. Please come prepared to give drafting instructions.

The second thing on the agenda will be a discussion of future business and our scheduling when we come back in September, as well as the consideration of the draft report on the impact of the criteria for awarding federal funding on research excellence. We have these things on the agenda.

Go ahead, MP Baldinelli.

Tony Baldinelli: Madam Chair, on the order of the agenda, could I propose that we go first to the criteria for federal funding, ensure that this is done and then get to the drafting instructions?

The Chair: Okay.

Tony Baldinelli: It's just to make sure.

The Chair: We can decide on the day of the meeting, I think, as we come in.

Tony Baldinelli: Okay.

The Chair: We will go through these things. Members can talk to each other and figure out how they want to proceed, but these are the items on the agenda for Monday's meeting.

Thank you once again.

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

Some hon. members: Agreed.

The Chair: The meeting is adjourned.