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# Standing Committee on Science and Research

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Chair: Mr. Lloyd Longfield





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• (1100)

[English]

**The Chair (Mr. Lloyd Longfield (Guelph, Lib.)):** I call the meeting to order. We'll get started.

Welcome to meeting number 83 of the House of Commons Standing Committee on Science and Research.

You'll notice we are in a new room today, with a little bit more elbow room. That actually has to do with an audio incident that happened a few weeks ago.

I will remind members that we have to watch out for our interpreters and keep our headphones away from the microphone. Also, there's more space between one another so that our headphones don't interfere with our neighbours' microphones as well.

As indicated in the communiqué from the Speaker to all members on Monday, April 29, these measures have been taken to help prevent audio feedback incidents. All earpieces have been replaced by a model that greatly reduces the probability of audio feedback. The new earpieces are black in colour, whereas the former ones were grey. Use only the approved black earpieces. By default, all unused earpieces will be unplugged at the start of the meeting.

When you're not using your earpiece, please place it face down in the middle of the sticker that is in front of you at your desk. Consult the cards on the table for guidelines to prevent audio feedback incidents.

Also, the room layout has been adjusted so that we can also help reduce the risk to people who are using earpieces, including our interpreters, but also including us.

We want to conduct our business without interruption and to protect the health and safety of all participants. Thank you for your cooperation. Health and safety come first and foremost as what we have to pay attention to.

Today's meeting is in a hybrid format, pursuant to the Standing Orders. For those participating virtually, I'd like to outline a few rules.

Speak in the official language of your choice; interpretation services are available for the meeting. You can choose, at the bottom of your screen, whether to have floor, English or French. If the interpretation is lost at any time, please inform me, and I'll immediately suspend the meeting until it's restored.

Before speaking, wait until I recognize you by name. If you are on the video conference, just click on the microphone icon to un-

mute yourself. When you're not speaking, your mic should be on mute. As a reminder, all comments by members should be addressed through the chair.

With regard to a speaking list, the clerk and I will do our best to maintain the consolidated order of speaking for all members, whether they're participating virtually or in person.

We might have a group of students join us from Havergal College in Toronto, so we'll welcome them when they come—if they come. These meetings are open to the public, and we welcome anybody interested in science or in democracy to come to see what we're doing.

Pursuant to Standing Order 108(3)(i) and the motions adopted by the committee on Tuesday, January 30, 2024, and Thursday, February 15, 2024, the committee resumes its study of the distribution of federal government funding among Canada's post-secondary institutions.

It's now my pleasure to welcome, from Conestoga College Institute of Technology and Applied Learning, Dr. Michelle Chrétien, vice-president for research and innovation.

From Loyalist College of Applied Arts and Technology, we have Dr. Kari Kramp, senior scientific manager, applied research and innovation, and Dr. Kalina Kamenova, director of applied research and innovation.

Online we have, from Okanagan College, Dr. Neil Fassina, president.

Welcome to all of you. Thank you for preparing to be with us this morning. You each have five minutes for your remarks.

We will start with Conestoga—my next door neighbour, and where two of my daughters graduated from.

It's over to you, Ms. Chrétien.

**Dr. Michelle Chrétien (Vice President, Research and Innovation, Conestoga College Institute of Technology and Applied Learning):** Thank you very much.

Good morning, Mr. Chair and members of the committee.

As noted, my name is Michelle Chrétien. I'm the vice-president of research and innovation at Conestoga College.

I would like to begin by thanking this committee for undertaking this study on the allocation of federal research funding and for all the work that you're doing to ensure that Canada's research ecosystem remains vibrant, diverse and world class. I'm really honoured, honestly, to have been invited to appear before this committee, so thank you, Mr. Chair and members, for this opportunity.

Today, in keeping with the theme, I would like to speak to you about the role of colleges within Canada's research ecosystem through the lens of impact—the impact on students, on industry and community partners, and on knowledge translation.

In Canada, we are rightfully proud of our history of research excellence. This study provides an opportunity to look to the future and at how Canada's research funding dollars can be allocated to best position our country for success.

This is also perhaps an opportune moment to reflect on what Canadians expect from federal investment in research. Certainly, it's the creation of new knowledge, but perhaps also, and increasingly, it's the focused and efficient translation of this knowledge to industry and to public benefit.

Canada's colleges have strong ties to both industry and the communities that we serve. We believe that collaborator-driven applied research can empower our partners to create economic and social impact while also providing our students with the opportunity to learn in rich experiential environments.

A significant portion of our research funding goes to ensuring that students benefit from the experience of collaborative, practical, solutions-driven, applied research that creates impact for small and medium-sized enterprises and communities while also sowing the seeds for a more innovative industry and public sector in the future.

This past year, grant funds at Conestoga supported more than 250 students from 45 different academic programs to engage in research projects at the college. If we collectively aspire to build Canada's research capacity and develop the full spectrum of talent, we need to ensure that this funding is more broadly available. When we engage undergraduate students in applied research, we're creating a future workforce that understands and values innovation.

I'd like to provide a few really quick examples of the type of work that our students and our faculty are engaged in.

Currently, students from our school of engineering are working with a local start-up, Vortex Technology Group, to develop a novel supercapacitor energy storage technology for fast and efficient electric vehicle charging. This project is beyond conception; Vortex is now expanding its technology demonstration sites with local utilities and partnering with the well-known EV charging infrastructure player, Flo.

In our food research and innovation lab—it's my favourite, although I'm not supposed to have favourites—students are working to address food waste using novel approaches to upcycle spent grains from the brewing industry. Through this project, we have helped a company, Terra Bioindustries, to develop and launch two new products to domestic and international markets.

It's not just in science and engineering that we have impact. Students and faculty in our social innovation lab are currently collabo-

rating with local credit unions to explore innovative solutions to housing affordability through novel co-operative models and unique financial products, such as rent to own.

There are more examples and I would love to tell you about them, but unfortunately the scope and scale of this work is limited by the availability of funds. As I know you will have heard in previous testimony, less than 3% of the nearly \$4 billion invested by the federal government went to support this type of community-driven research last year.

The advisory panel on the federal research support system specifically identified an inability to respond quickly to emerging societal and economic needs as one of the greatest gaps of the current funding system. These examples, I hope, demonstrate how colleges are addressing this gap by responding to the pressing and topical challenges of business and society. Just imagine what we could do with the right-sized investment.

While Canada has historically underperformed in translating our strengths in science and research into marketable innovations that benefit Canadians, this gap in translating innovation to impact is precisely where colleges and CEGEPs shine. Unfortunately, this capacity is somewhat under-recognized and under-leveraged.

While I agree that there does exist a disparity in research funding between large and small institutions, as I know this committee has heard, I would also suggest that the current funding allocation model undervalues certain types of research, even though applied research and incremental innovation of the type led by colleges can lead to big impacts for a country and an economy made up of small businesses.

In conclusion, I would like to again express my gratitude for the opportunity to appear today before this committee and share the important role that colleges play in creating social and economic prosperity for Canadians.

● (1105)

Together, let's rethink how research investment is evaluated and allocated, and reimagine colleges and CEGEPs as full partners in Canada's research and innovation ecosystem.

Thank you.

**The Chair:** Thank you, Dr. Chrétien.

Now, from Belleville's Loyalist College in the Bay of Quinte, it's Dr. Kramp or Dr. Kamenova.

Who is starting? It's Dr. Kramp.

The floor is yours for five minutes.

• (1110)

**Dr. Kari Kramp (Senior Scientific Manager, Applied Research and Innovation, Loyalist College of Applied Arts and Technology):** Thank you.

Through you, Chair, it is my privilege to be here today with my colleague Dr. Kalina Kamenova as representatives of Loyalist College. We are here to share with you our 20-plus years of experience in post-secondary research and innovation.

Loyalist College is a small and vibrant college in eastern Ontario, with several locations: Belleville, Bancroft, Port Hope and Tyendinaga. It serves a population of approximately 250,000, made up of many small rural communities. Our mandate is to provide an inclusive learning environment and a collaborative applied research network that creates shared value for students, industry, community and our indigenous partners.

Each year, we open our doors to almost 4,000 students who enrol in over 70 full-time diploma, certificate and apprenticeship programs aligned with our region's social, economic and environmental priorities.

Research and innovation at our college have benefited from federal funding. Through CFI, we've expanded our laboratory space and invested in state-of-the-art equipment, providing an environment for students to experience learning and for college-industry partnerships to thrive. Over the past five years, our NSERC-supported Centre for Natural Products has become a nationally recognized technology access centre, a TAC. Our TAC has supported over 71 small businesses and completed over 165 projects. This has led to the development and improvement of products and processes for many businesses across sectors, including natural products, food and beverage, and cosmetics and personal care.

We were the first college in Canada approved to conduct research activities on cannabis, and we received our Health Canada licence approval for psilocybin this past year.

We are currently advancing social innovation and community health at Loyalist with funding through NSERC's Mobilize program. Our Centre for Healthy Communities leverages the expertise of our community partners in the health care and social services sector to enable action that addresses the growing needs in our community for health and wellness support.

For the fourth consecutive year, Loyalist has been named as one of Canada's top 50 research colleges. We consider our small size to be our biggest strength. We listen and adapt to the evolving needs of the industries and communities we serve. We engage a diverse student body in order to foster a culture of innovation. Finally, we equip the future workforce with the skills needed to ensure Canadian businesses and community organizations have the tools to grow.

**Dr. Kalina Kamenova (Director, Applied Research and Innovation, Loyalist College of Applied Arts and Technology):** Good

morning. I am pleased to be here to make the case for stronger funding for applied research at small post-secondary institutions like Loyalist College, which are deeply connected to their local communities.

Our capacity to provide valuable solutions to economic, social, health and policy issues is largely dependent on timely access to tri-council and Canadian Foundation for Innovation funding. With the current level of federal research funding, we face considerable constraints in addressing local and national priorities related to community health, climate adaptation, labour market development, affordable housing and the bioeconomy.

While we recognize the importance of investment in discovery research, we are here to highlight the value proposition of industry-driven and community-driven applied research.

At Loyalist, applied research goes beyond serving the immediate R and D needs of our partners. Our labs and centres of research excellence attract and retain regional talent, create employment opportunities, make local businesses more competitive and strengthen our communities.

More equitable funding distribution to the college sector will bring tangible social and economic benefits to our region. Increasing the level of federal funding from 3.1% to 6% will have a transformational impact on Canada's college research ecosystem. It will expand the existing funding programs and establish challenge funds for applied research that responds to urgent sectoral needs.

I have two additional considerations for this committee.

First, enhanced funding for NSERC-funded technology access centres—TACs—will benefit the college sector. Seed funding provided by this program supports specialized research centres that provide timely research and training services to private, public and non-profit organizations. Colleges rely heavily on TAC grants for building enhanced expertise and technological capacity for regional economic development and social innovation. At the current funding levels, securing funding for new TACs is becoming extremely difficult.

Second, through their industry-friendly intellectual property approach, colleges drive innovation and maximize productivity in the Canadian economy. Our sector needs federal funding programs that provide wraparound supports for IP development and commercialization for local partners. IP protection is a pillar of the innovation economy and—

• (1115)

**The Chair:** We will have to call it there. I'm sorry, but we are over the time. Maybe we can get the rest in through the question-and-answer portion.

Now we will go to Dr. Fassina from Okanagan College for five minutes. Welcome.

[*Translation*]

**Dr. Neil Fassina (President, Okanagan College):** Good morning. My name is Neil Fassina.

[*English*]

I am the president of Okanagan College in British Columbia.

My route to becoming a college president is somewhat unusual, having started my academic career in three U15 universities, followed by a vice-presidency at a polytechnic and a presidency at a research-intensive university. I mention my career path only insofar as it has provided me with an invaluable insight into the different and complementary roles of colleges, polytechnics and universities in the Canadian research ecosystem.

Colleges occupy a special space in the post-secondary landscape because they are deeply embedded in the communities we serve. Aligning with the needs of our communities, colleges provide relevant and responsive solutions that empower people of all ages and from all walks of life to transform themselves and the communities they call home.

Regrettably, most Canadians have limited awareness of the significant impact colleges have in this country. They know colleges offer amazing entry to practice by reskilling or upskilling learning opportunities. What is less understood, however, is the high-impact applied research taking place in our communities in partnership with colleges across all sectors of the economy.

Imagine, if you will, not an individual, but a team of highly qualified professionals and students collectively helping a community, an entrepreneur, a business or a government solve a real-life problem by applying the same rigorous scientific methods used by scholars throughout the world.

Team-based applied research thrives in the college environment because the primary goal of these teams is to strengthen the social, economic and cultural fabric of the communities, rather than publishing their work downstream so that they can be credited with advancing a field of practice. These teams stay laser-focused on the problem at hand, because they are not concerned about complex IP agreements, as IP stays whole and with the research partner. In short, these teams are driven to find affordable, effective and scalable solutions to real-world problems.

“Where's the benefit to the college?”, you may ask. It's in the immediate impact on our communities, with demonstrable outcomes

typically occurring within one to three years. It is in the impact on our learners, who will take the skills they develop through applied research to become lifelong innovators in our communities. It is in the impact in our classrooms as the applied research projects inform our curriculum.

That said, colleges face a disproportionate challenge in the research space, to a great extent because they're much newer.

When we compare the relatively short history of applied research in colleges to the lengthy history of pure research in universities, one might draw on the analogy of comparing an entrepreneurial start-up to an established corporation. Colleges have bootstrap resources to create a thriving research start-up that has a real-life impact in our communities, having been supported by what amounts to minimally viable research infrastructure. Anyone who has been an entrepreneur or has worked with one knows, however, that the transition from start-up to scale-up requires investment.

Drawing further on this analogy, the applied research environments of colleges have exhausted the “friends and family” round of fundraising and are now in need of real external equity to scale up and create a parity of impact alongside our university partners.

We have reached a turning point in our storyline, at which the contemporary and impactful role of applied research in colleges needs to be valued with the same respect and esteem as the pure research environments of universities. By investing resources and supporting research projects and the underlying research infrastructure in both of these complementary systems, Canada is poised to become a global innovation hub.

To truly recognize the power of complementarity, however, colleges need to be supported differently from universities. If the applied research arena of colleges is assumed to be the same as a university or is restricted by requiring university partners, then the true impact of applied research will be proportionately diminished.

Take, for example, an area in which college applied research teams shine: supporting organizations through the innovation valley of death. There is funding that supports pure research, which is incredibly valuable in the university context, and private equity supports the scaling and development of a product that has been proven to be commercially viable. In between those two areas is the space where colleges do their applied research.

Colleges fill this gap by providing research and development support, proof of concept and high-fidelity testing that is financially unattainable for small start-up organizations. For example, at Okanagan College, we have a CFI- and NSERC-funded biology lab that helps start-up food and beverage companies test for bacterial contamination so that they can get their product to market more quickly. This lab has equipment that small companies won't be able to access, and they don't have the expertise to use it. Having access to it at Okanagan College means the difference between these entrepreneurs being limited to farmers markets versus becoming a commercially viable food producer to address issues of food security.

• (1120)

In closing, I would encourage the committee to consider the real-life impact of applied research that happens in our communities in partnership with colleges across the country. This impact is within reach of being scalable, but only if colleges are treated with the same respect and esteem extended to our university colleagues through support for research and its underlying infrastructure in colleges and independent of the support for universities. In doing so, you can empower innovators, entrepreneurs, communities and governments to be innovation hubs, thereby transforming the communities that we all call home.

Thank you.

**The Chair:** Thank you, Dr. Fassina.

Now we'll go to Ms. Rempel Garner for the first six-minute round.

**Hon. Michelle Rempel Garner (Calgary Nose Hill, CPC):** Thank you, Chair.

Ms. Chrétien, we've had witnesses suggest the committee recommend to the government that a post-secondary institution's eligibility for federal research funds be tied to housing affordability metrics within the region the institution resides. Would Conestoga College support this recommendation?

**Dr. Michelle Chrétien:** Just to be sure that I understand the question, did you say that a member of the committee had suggested that federal research funding—

**Hon. Michelle Rempel Garner:** No, these were witnesses.

**Dr. Michelle Chrétien:** Witnesses have suggested federal research funding be associated with housing affordability in the post-secondary institution's region. Is that correct?

**Hon. Michelle Rempel Garner:** Yes.

**Dr. Michelle Chrétien:** I don't know. That's a complex question. I'd want to think about it and look at some data. I'm a scientist. That's what I do.

**Hon. Michelle Rempel Garner:** This morning, about an hour ago, the Canadian Broadcasting Corporation published a story entitled "Conestoga College under fire by students, union leaders for aggressive international student recruitment". The article goes into great detail about the deplorable living conditions Conestoga students are facing and the poor conditions faculty are facing due to the massive uptick in international student permits being issued at your institution, apparently without a plan to house the students.

Is your hesitation to support a recommendation to tie eligibility for federal research funding to housing affordability metrics related to this situation?

**Dr. Michelle Chrétien:** I wouldn't characterize my response as a hesitation to support a recommendation, but rather a lack of information to provide an informed answer to your question—

• (1125)

**Hon. Michelle Rempel Garner:** Thank you. I have a short period of time.

Conestoga College posted a \$106-million surplus for the 2022-23 fiscal year, up from \$2.5 million in 2014-15, largely due to international student tuition, yet the CBC article says that Conestoga College instructors say that many of the institution's students now "don't have the basic three Rs: reading, writing, arithmetic".

Why should an institution be eligible for federal research funding when it can't even meet the basic educational needs of the students from whom it's making its surplus?

**Dr. Michelle Chrétien:** I think the data would indicate that students graduating from Conestoga College are actually meeting the requirements of our regional workforce. I think the statistic is that 90% of our graduates are employed in their field of choice within six months of graduation, which is actually above the Ontario provincial average.

Our employer satisfaction rate with students graduating from Conestoga College programs is about 92%, which is on par with Ontario KPIs, the key performance indicators.

**Hon. Michelle Rempel Garner:** The CBC article suggests that the instructors at Conestoga College, as well as the students, have a differing opinion.

Another article from last fall said:

As Conestoga College comes under fire for soaring international student enrolment highlighting affordability concerns and a lack of student housing, numbers out of the Cambridge Food Bank are also painting a concerning picture.

According to the food bank, approximately 2,000 students and their dependents have come through its door in 2023—

—the same year your institution posted a \$100-million-plus surplus—

—with each receiving a referral back to the college and the school's various...assistance programs.

Should an institution be eligible for federal research funding when it has taken in so many international students that many of them are forced to go to food banks?

**Dr. Michelle Chrétien:** One of our research partners is actually the Cambridge Food Bank, so it's also an institution that benefits from the minds of our students and our faculty in terms of addressing these challenges.

The point I would make is that federal research investment in colleges, CEGEPs and polytechnics doesn't stay with the college or the CEGEP, but is rather a flow-through model that allows our students and our faculty to engage in the type of research that my colleagues and I have described, which has an impact economically and socially.

I would separate the difference between federal investment in research funding as revenue to a post-secondary institution versus a flow-through to student benefit.

**Hon. Michelle Rempel Garner:** Building on that remark, in your role as vice-president of research, have you expressed any concerns to your board or to those higher up your food chain about the ethics of pursuing a research enterprise that includes sponsored research from industry at your college, given the unsustainable situation facing your students and instructors due to the international student permitting levels?

**Dr. Michelle Chrétien:** I've been in my current role as vice president of research and innovation since about February, so I have not had the opportunity to present to our board. I'm fairly new in this role.

In my role, which is research and innovation, my portfolio doesn't include student recruitment—

**Hon. Michelle Rempel Garner:** But now, since you're in front and have an opportunity, do you think that it is ethical for an institution like yours, where there are so many international students that can't be housed and 2,000 people going to food banks, to pursue federal funds and industry funds that are going into the operation of a research enterprise when your instructors and students are saying they can't afford to live—the students' stories in this article are something—and your instructors are saying that it's difficult for them to provide for the basic education needs of these students? Do you personally, in your role, think that these are...that perhaps there's a link here?

Building on that, do you think that there's any reputational risk to federal granting councils to grant funds to institutions like yours when, in my opinion, there is clearly an ethical dilemma?

**The Chair:** Thank you. You are unfortunately right at the time, but if there's anything in writing, we can accept that into the committee.

Now we're going to Dr. Jaczek for six minutes, please.

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

Thank you to all our witnesses.

I've certainly been most impressed by the testimony we've heard at this committee from colleges and small universities on the need to look very carefully at the distribution of federal funds. I think the benefits of applied research have been made very clearly, as well as the benefits of retaining local talent and allowing small businesses

within the communities to thrive through the products that are produced.

Having said that, I think I'll start with Dr. Fassina.

You made reference to supporting colleges differently. In a practical sense, do you have some suggestions as to how the tri-councils should actually look at funding when they look at applications coming in from across the spectrum, from U15, from small universities, from colleges? What sort of criteria should they be looking at when they decide on their allocation of funds?

**Dr. Neil Fassina:** Thank you, Dr. Jaczek.

In terms of some of the allocation considerations, I would suggest understanding what the institution spends on its underlying infrastructure to support its applied research versus its pure research environment, recognizing and going back to my comment that many colleges, polytechnics and CEGEPs have had to effectively bootstrap those resources together with minimal funds coming from a tri-council environment. I think you'd be surprised at how little some of the colleges and polytechnics are spending within that underlying infrastructure space.

I'll probably stop there.

**Hon. Helena Jaczek:** You gave the example of the lab where small businesses can come and test. Where did that funding come from, again? I think you mentioned NSERC, but maybe you could elaborate on how that came to be.

**Dr. Neil Fassina:** You bet.

Just over five years ago, Okanagan College was granted an NSERC and CFI-funded technology access centre, as referred to by one of my colleagues.

In our case, it's our beverage technology access centre, so it specializes in unfermented, fermented and distilled beverages of all sorts.

**Hon. Helena Jaczek:** I'll turn now to Dr. Chrétien.

At Conestoga College, obviously you've made applications to the tri-council. Could you give us some examples of successful applications? Have you been able to use those examples as you go forward? Have you been able to show how your precedent-setting applied research has shown benefit to the community and to Canadians?

• (1130)

**Dr. Michelle Chrétien:** Yes, absolutely. I think we do try, when making an application to the tri-agencies, to speak to the track record of impact that our students and researchers have had in their communities. I think that's important.

I would also say, though, that when applying to programs, it is sometimes difficult to communicate that value to a review committee or an individual reviewer who doesn't have the experience of the value that the college sector brings to the research enterprise and specifically to communities.

I think that we have been very successful in terms of receiving funds and investments from the tri-agencies to support directly the work of communities and companies in our region. We're also very grateful for support from the Federal Economic Development Agency for Southern Ontario, which supports some of the work I talked about today, including the electric vehicle charging work. However, I do think that some of the challenge comes both in the size of the slice of our pie and also in helping reviewers and those who are evaluating and allocating funds to really understand the value of what we do, and how it's different but complementary to what happens at our university peer institutions.

**Hon. Helena Jaczek:** Thank you.

Ms. Kamenova, you referenced moving to a 6% allocation, which was kind of modest, I would say, but perhaps appropriate.

Could you elaborate a bit again on how you see those criteria that review committees should use in order to somehow demonstrate the value of your applications as a college?

**Dr. Kalina Kamenova:** Through you, Mr. Chair, thank you for the question.

On the request to increase the funding to 6%, I really appreciate the fact that you consider this modest. Most of my colleagues in applied research across different community colleges in Canada are suggesting a 5% increase. We decided to be bolder and suggest an additional 1% increase to account for additional funding for a challenge fund to address urgent needs in society, including affordable housing, mental health issues and other community health problems.

In terms of how this can support the distribution of funding, one way we would suggest is to increase funding for individual competitions under the college and community innovation program that is funded by NSERC.

I mentioned in my speaking notes the grants to technology access centre grants, the TACs. Currently, these grants are becoming increasingly competitive. Additional funding will provide colleges with the opportunity to secure more TACs. Colleges can hold up to three TAC grants. This will allow them to venture into new areas of applied research and innovation and then build centres of excellence and support local communities in a better way. In a way, it will allow colleges to enhance their research portfolios.

The increase from 3% to 6% allocated by the tri-councils would allow them to provide more grants in different funding competitions—

**The Chair:** I'm sorry. We're at time. I was listening and not paying attention to time.

Go ahead, Mr. Blanchette-Joncas, for six minutes, please.

[*Translation*]

**Mr. Maxime Blanchette-Joncas (Rimouski-Neigette—Témiscouata—Les Basques, BQ):** Thank you, Mr. Chair.

I want to welcome the witnesses who are with us today.

Dr. Kramp, I heard you mention in your remarks that the strength of your small college is in fact—

[*English*]

**The Chair:** I'm sorry. I'm interrupting because we don't have translation.

Could we have translation, please, on French to English?

I'll reset the timer and you can start again. We'll see whether we have translation.

We have a nod of the head. Good.

Go ahead, please, for six minutes.

[*Translation*]

**Mr. Maxime Blanchette-Joncas:** Thank you, Mr. Chair.

Dr. Kramp, I heard you mention in your remarks that the strength of your college is that, despite its small size, you can accomplish a lot of things with few resources.

Currently, Canadian colleges, CEGEPs and polytechnics share only 2.9% of the federal budget for investments in scientific research.

In the academic world, there is unfair competition between institutions. The large universities share 80% of the funding, while the small and medium-sized universities share the rest of the crumbs, and I'm being polite. As a representative of a small college, do you experience the same reality and have to compete with the larger colleges?

I could give you examples of colleges that conduct research activities that are more intense than some Canadian universities.

• (1135)

[*English*]

**Dr. Kari Kramp:** Thank you.

Just to be sure, you're wondering whether or not we feel competition between our college and other larger colleges.

[*Translation*]

**Mr. Maxime Blanchette-Joncas:** In concrete terms, I want to know whether being a small college puts you at a disadvantage compared to medium or large colleges. We know that the latter have access to better research funding, despite the small amounts allocated to colleges and polytechnics in Canada.

[*English*]

**Dr. Kari Kramp:** Thank you for the question.

Through you, Chair, I believe that being a small college is an advantage to a certain extent. We have the ability to be agile and to adapt and evolve quickly. I think this is really important, especially when we're talking about applied research.

My experience has been that when you're working with industry, they want it yesterday. As the sector changes and something new has evolved and we need to shift gears, that is where the advantage of a small college comes into play.

I want to make sure I answer the second part of the question.

[Translation]

**Mr. Maxime Blanchette-Joncas:** I'm trying to get a clear understanding of your organization's financial capacity, which is nevertheless limited. What more could you do with more research funding? We know the importance of applied research in Canada. Basic research is important, but it takes applied research as well. Colleges receive only 2.9% of federal funding. I'm sure you have the potential to do more research and respond to a number of problems that our society is currently facing.

[English]

**Dr. Kari Kramp:** Yes. With 2.9%, there is a limit to what we can do. What could we do with more money?

I would start with students. That's why we're here. We could provide more experiential learning opportunities for students. We look at as little as \$15,000. That would hire a student for the summer. These are real examples of experience that make a difference and create a student's skill set.

They're graduating with a credential, but when they are involved in applied research, they get that hands-on learning, they network with industry and they get the critical skills. When you're called for a reference and they're asking about a student, they're not necessarily asking what grade they got in organic chemistry, but if they were able to work as part of a team and how their communications skills are. It's these skills and intangibles that are reinforced through applied research, so I would say, first of all, that it's students.

Second, I would say that it's our ability to serve. What we could do with more money.... We live in a rural environment. That's our space, and there are a lot of under-represented groups and small businesses that have challenges as they move toward or are interested in innovating and developing new products.

Currently, 50% of our collaborators are from under-represented groups. Of our collaborators, 27% are women-led, 25% are visible minorities and 2.5% are indigenous partners. We work on a lot of small projects that are valued between \$5,000 and \$15,000 per project.

This makes a difference for these small industries and these small companies. Those are just examples from within our centre for natural products, but now we're working toward having more of an impact with our community partners in social innovation.

It's exciting to see the potential. We could do a lot with more funding.

[Translation]

**Mr. Maxime Blanchette-Joncas:** Thank you very much. I think your testimony is quite compelling. You need more funding to develop further.

Dr. Chrétien, we know that only 2.9% of all federal funding for scientific research goes to Canadian colleges, institutes and CEGEPs. You suggested increasing that share to 6%. Do you have any data on that? Have you done any analysis? Why 6%? Why not 7%, 8% or 9%?

• (1140)

[English]

**The Chair:** Answer very briefly. You have about 20 seconds.

[Translation]

**Dr. Michelle Chrétien:** Thank you for the question.

[English]

Through you, Mr. Chair, the selection of 6% or 5%, as has been advocated by some of our associations, like Colleges and Institutes Canada, was a reflection of a balanced approach. I agree it is modest, because I think with more we could definitely do more, but I think we need to scale reasonably and thoughtfully as we grow.

**The Chair:** Thank you.

Mr. Cannings has the final six minutes of this round.

**Mr. Richard Cannings (South Okanagan—West Kootenay, NDP):** Thank you all for being here.

I'm going to start with Dr. Fassina, since you represent Okanagan College, which is close to home for me. The last time we met was actually at the Sustainable Building Technology Capstone Showcase for your sustainable building technologies program.

I want to ask a question about how colleges might be ideally placed for federal funding for projects and programs that really help to roll out federal policies.

We are facing a real climate crisis, as we know. Okanagan College's sustainable building program is a model for how we need to construct our infrastructure in the coming years and decades. Some of the projects we saw at that showcase were demonstrations of how to do deep retrofits on homes in a economical way that could drive local businesses and demonstrations of building climate-ready modular homes on first nations reserves.

It just seems that this kind of program should get funding matched across the country so that we can do the things we need to do.

I'm wondering if that's perhaps one way that colleges could gain more access to funding for these very applied projects to help roll out government policy to do the things we need to do.

**Dr. Neil Fassina:** Thank you, Mr. Cannings.

I couldn't agree with you more around colleges being poised to be able to make federal policy or societal direction happen very quickly and actively.

As you highlighted, within our sustainable building management program, the line between learning and applied research becomes very blurred within a college environment, recognizing that at each turn, our students are looking to have a marked impact on the communities that they live in, whether that be on a dedicated research environment or in the community learning-type environments that they find within their classroom.

The instructors are equally ready to have that impact because they're looking for real-life experiences for our students, so that when they are done, they are effectively career and job ready.

I think that further investment of federal research dollars into that applied research, to enable a bit of a bleed between work-integrated learning and applied research for community impact, is a way that the federal government could find a very quick turn on some of its federal policies.

**Mr. Richard Cannings:** Following up on that, have you been approached by the federal government with the idea of doing some of that work? Is the federal government trying to develop broader-scale applied research to do these things something that you've heard of in the college environment? Is that something that the federal government is involved in?

**Dr. Neil Fassina:** As one would might imagine, colleges are working with multiple ministries within the federal government, looking to try to connect the variable dots that we have available to us for funding purposes, whether it be directed at a classroom-type environment or an applied research-type of environment, and are simultaneously looking to make progress with federal ministries on some of these important societal issues.

I'd hesitate to say that we're approached directly, as compared to how we are approaching the federal government and trying to tie those dots together.

• (1145)

**Mr. Richard Cannings:** Thank you, Dr. Fassina.

I'm going to turn to Dr. Kramp with a similar kind of question.

I think you mentioned the word "cannabis" in your presentation and I think you have some expertise in that area.

Since we've legalized cannabis in Canada, we've had word from the government that they were going to spend some of that supposedly very large amount of money they are going to get from taxation on research into cannabis. There seems to have been little heard about that research and whether that money has been spent.

I'm wondering if you could comment on that and the role your college or other colleges might have had in that research.

**Dr. Kari Kramp:** Yes, since legalization and even prior to it, there's a recognition that research on the subject of cannabis is important. With it essentially being prohibited for so many years, there's so much knowledge to learn. There are so many studies, and so many of them are anecdotal, about looking at the potential medical benefits of it.

We've been fortunate to receive funding through, I believe, CARDF, the colleges applied research development fund, to conduct this research. We have focused our research on looking at cannabis from a quality perspective and from a consistency and safety perspective. These are items that we're able to focus on in terms of the broader environment.

We recognize that more institutions are moving forward with research licences to investigate cannabis, but there are a lot of challenges in doing that. It's a lot of paperwork, and it's not something to go into lightly. Despite cannabis being legalized, research is very challenging.

**The Chair:** Thank you for the point, and thank you for the questions.

I will give a brief welcome to the students from Havergal College in Toronto. It's great to have you here with your interest in democracy, and I hope this helps with your studies.

Now we'll go to our five-minute rounds, starting with Mr. Soroka, please.

**Mr. Gerald Soroka (Yellowhead, CPC):** I'll be passing my time to Ms. Rempel Garner.

**Hon. Michelle Rempel Garner:** Thank you.

I'd like to go back to Ms. Chrétien and the line of questions that I had in the first round.

Do you, in your role as vice-president of research, have any concerns about Conestoga College operating a research enterprise, given the conditions that Conestoga international students are facing as well as the issues that instructors have raised in the media?

**Dr. Michelle Chrétien:** I think, as a human being, that it's reasonable to find it upsetting when students have challenges. I've been a student, and I think that our current housing affordability crisis in Canada, especially in our major urban centres, is unfortunate. I know that certainly some of the research that we're engaged in is looking at housing affordability and looking at engaging our students, all of them, in identifying innovative solutions to address those challenges.

I'm sorry; I feel that I've lost track of your question a little bit. Would you mind repeating it?

**Hon. Michelle Rempel Garner:** That's okay. I'll ask in a different way.

In the first round of questions that I asked of you, I think you suggested that your portfolio was separate from the portfolio of student experience. Is that correct?

**Dr. Michelle Chrétien:** It's separate from student recruitment, yes.

**Hon. Michelle Rempel Garner:** A clause in the preamble of the agreement on the administration of agency grants and awards by research institutions—which, in part, governs the eligibility of an institution to receive federal research funding—states, “Whereas the Institution is engaged in research, research training, and/or research related activities, in Canada”. This underpins a foundational principle for the rationale of federal government expenditures on research, which is the training of students, yet you're saying that your portfolio doesn't necessarily overlap with that.

Don't you think it's problematic if the government is allocating funds to a research enterprise when there are clear issues with the ability of the institution to address student experience, given that what is prioritized are high levels of international student permitting as opposed to student experience?

• (1150)

**Dr. Michelle Chrétien:** I don't really think that my portfolio is separate from student experience. I think it's something that I personally care very deeply about. I do think that, certainly within the research enterprise, our goal really is to provide amazing student experiences.

I go back to the statistics that I shared with you earlier about graduation rates, student employment rates and employer satisfaction rates.

**Hon. Michelle Rempel Garner:** Do you think there are any issues with student experience at Conestoga right now?

**Dr. Michelle Chrétien:** I think there are issues with student experience probably everywhere, unfortunately. I can also share that I am also a part-time instructor in the evenings at the college, so I'm grateful to have had the experience of also acting as an educator for students and engaging directly with our students, both domestic and international.

**Hon. Michelle Rempel Garner:** God bless you.

Your president, John Tibbits, was pictured in a CBC article that was released this morning. The administration declined comment, but issued a statement that said, “Students who come to Conestoga from other countries have enabled us to reinvest our surplus in new buildings and in-demand programs, both of which drive economic growth.”

An argument for federal research expenditures is often the driver of economic growth, as it should be. However, how can an institution drive economic growth when there's a clear dichotomy between student experience and institutional surplus and economic growth?

**Dr. Michelle Chrétien:** I apologize, but I spent most of my time this morning preparing to talk about research and innovation, and I didn't see the CBC article.

I think the way applied research drives economic growth is through partnerships directly with community and with industry, and by engaging, as my colleague from Okanagan so eloquently put it, teams of students and researchers to come together to solve problems.

**Hon. Michelle Rempel Garner:** How can those students come together to solve problems when they can't afford to eat?

**Dr. Michelle Chrétien:** Of course that's a terrible situation, and it's one we see across our country right now.

I again go back to our student data, which suggests that the vast majority—I think over 85% or 90% of students—are actually satisfied—

**Hon. Michelle Rempel Garner:** Quickly, in the time I have left—

**The Chair:** We're actually out of time now. We are over time by about six seconds.

We'll go to our next questioner, Ms. Metlege Diab, please, for five minutes.

**Ms. Lena Metlege Diab (Halifax West, Lib.):** Thank you, Mr. Chair.

Welcome to our panellists today. I recognize that all three institutions are colleges, so thank you for all the work you do in your respective communities to enrich the lives of the students and also the community, and for the help with the societal issues we talked about.

Let me ask a question for the colleges.

Budget 2024, “Fairness for Every Generation”, proposes the creation of a capstone research funding organization, which will include the granting councils within its structure, as well as the creation of a new advisory council on science and innovation. The question that I have, in the time that I have, is this: Do you have any recommendation for how this new funding organization and advisory council can be structured to better support research in post-secondary institutions, but in your case here, in colleges?

Then also, the other part is that we heard from the U15 group as well as other universities about the research collaborations that happen among universities and hospitals, and colleges as well. I'm wondering if you also see that in your respective communities.

I know we're limited in time, so why don't I start with Loyalist College and whoever would like to take that?

**Dr. Kalina Kamenova:** One recommendation I give to the advisory council organization is to engage in a more extensive stakeholder engagement process: Work more closely with the college sector. There are over 120 post-secondary institutions across Canada, and it will be very beneficial for the advisory council if we are consulted on matters related to research funding and distribution of research funding, as well as about the development of new funding programs. That is one suggestion.

• (1155)

**Ms. Lena Metlege Diab:** Thank you.

I will go to Dr. Fassina, please.

**Dr. Neil Fassina:** I have a couple of recommendations.

As it pertains to the governance of a different approach to that funding environment, make sure that the universities, colleges, polytechnics, CEGEPs and industry are all sitting at the table with an equal voice, recognizing that if institutions are willing to state that they have the partnerships across all three levels, then all three levels having a say should reinforce the role each of those institutions has at that combined table.

In terms of your question, “Does collaborative research happen?”, in our case yes, it does, between us and the Okanagan campus of UBC, in areas like aerospace and robotics. Those partnerships are indeed alive and are producing well.

What I and a number of my colleagues are reinforcing with the committee today is that in order for those partnerships to truly thrive, the colleges, polytechnics and CEGEPs need to receive the parity of esteem that is given to our research universities.

**Ms. Lena Metlege Diab:** Thank you very much.

With the time remaining, Dr. Chrétien, I'd like your perspective, having been at Dalhousie University in Nova Scotia and Ottawa University and wherever. I appreciate very much everything you've had to say here this morning.

**Dr. Michelle Chrétien:** Thank you very much for the question.

I agree with what's been shared by my colleagues and I look forward to the creation of this capstone foundation with the hope that it may simplify as well the research funding enterprise and create more efficiency in terms of how funds are distributed.

I strongly agree with the suggestion that there be an equal seat at the table for the various institutions that make up the rich fabric of our research and innovation enterprise here in Canada.

I think a focus of this new foundation or agency on higher TRL-level research—research that is more applied and mission-driven—could be of great benefit to colleges.

Briefly, to the question of collaboration, the answer is yes as well. We do engage in collaboration with our university partners. From a funding agency perspective, I think the ask would really be around being allowed to lead as well in those engagements, in addition to following and partnering.

Thank you.

**The Chair:** Great. Thank you very much.

Mr. Blanchette-Joncas, you have two and a half minutes, please.

[*Translation*]

**Mr. Maxime Blanchette-Joncas:** Thank you, Mr. Chair.

Dr. Kamenova, in concrete terms, what could the government do to better promote applied research, but also to ensure better collaboration between the various levels of government and to meet the needs of businesses?

[*English*]

**Dr. Kalina Kamenova:** Thank you for this question.

Through you, Mr. Chair, what could be done in this case, I would suggest, is a greater emphasis on developing funding programs that support intellectual property development and commercialization. Allow the colleges to develop expertise in supporting our business partners to navigate the complex IP and commercialization pathways and then push innovation up the technology readiness scale.

Right now, colleges are limited to supporting our businesses in terms of technology validation in labs, in relevant environments, and how it is demonstrated in specific environments as well, but we don't go behind this process. What would help is if we were able to build commercial IP and commercialization capacity and if federal funding could support us in this. Then we could support companies with the filings of patents and with the further development of their products so that they could become commercialized and reach markets.

[*Translation*]

**Mr. Maxime Blanchette-Joncas:** Thank you for your answer, and I want to make sure I understand correctly. In concrete terms, do you need specific funding or financial support to help you with commercialization and to foster innovation?

• (1200)

[*English*]

**The Chair:** You have 30 seconds.

**Dr. Kalina Kamenova:** I mean funding that would allow us to develop capacity within the institution, and training, and also funding that would support companies to do marketing for their products.

**The Chair:** Thank you.

Next we have Mr. Cannings for the final two and half minutes.

**Mr. Richard Cannings:** Thank you.

I think I'll turn to Dr. Chrétien on this.

I forget which one of you commented on how colleges, in doing a lot of applied research, especially with industry, operate on a time scale that is different from the time scale for the pure research that's done at many universities and colleges.

I'm wondering if part of the solution or part of the plan we should have going forward is to have adapted programs or new programs that have a different model of time scale and intake periods, so that if some industry comes in with a project they need done right now, there can be applications made quickly.

I'm wondering if you, and perhaps Dr. Kramp as well, could comment on that.

That's my question.

**Dr. Michelle Chrétien:** Thank you very much. It's an excellent question.

Through the chair, I think you've hit the nail on the head in terms of the way colleges and CEGEPs engage with industry to provide a rapid response to the challenges we're facing. We currently have some new programming through NSERC that is addressing that. The Mobilize funding was recently launched. I believe last year was the first round. It provides more flexible funding that enables and encourages the type of rapid response you're talking about.

I would also draw attention to the technology access centres, which both of my colleagues have mentioned. I think all three of our institutions are hosts to a technology access centre whose specific funding purpose is to provide rapid response to industry, in order to help us mobilize the resources of students and faculty to serve industry.

I think your comments are spot on about making sure we keep that front and centre in our minds, as we evolve new programming and funding for colleges.

I'll let my colleagues add anything I've missed.

**Dr. Kari Kramp:** Through you, Chair, I would say that was well said by Dr. Chrétien. I agree. Thank you very much for bringing that up. It is something on which we need to maintain an emphasis.

**The Chair:** Thank you for your presentations and for the very rich discussion we've had this morning.

I'm also thinking of the role colleges play in building homes, in personal support workers, in dental technicians, in early learning and in child care. For any of the societal needs we have, colleges are very instrumental in helping us get to the other side of the challenges. Thank you again for your service.

We're going to suspend for a minute or two so we can get our next panel in place.

Thank you again to our witnesses for being here today. Any other information they can provide in writing for our study would be most welcome.

We'll suspend for a few minutes.

• (1200) \_\_\_\_\_ (Pause) \_\_\_\_\_

• (1205)

**The Chair:** Thank you to our technicians for getting our online connections done.

Welcome to the second half of our meeting.

I have a few comments, briefly, for our new witnesses.

Wait until I recognize you by name before speaking. If you're participating by video conference, please select the language of your choice and have your mic on mute if you're not speaking.

Pursuant to Standing Order 108(3)(i) and the motions adopted by the committee on Tuesday, January 30, and Thursday, February 15, 2024, the committee resumes its study on the distribution of federal government funding among Canada's post-secondary institutions.

It's now my pleasure to welcome, from the Institute for the Black and African Diaspora Research and Engagement at Simon Fraser University, Dr. June Francis.

It's great to have you by video conference.

In person, we have, from the Canadian Committee for Science and Technology, Dr. Donna Strickland, professor.

It's great to have you with us. It's actually an honour to have you join us today.

From Saskatchewan Polytechnic, we have Dr. Susan Blum, associate vice-president, applied research and continuing education.

Welcome to you, Dr. Blum, as well.

We'll start off with Dr. June Francis. You have five minutes.

**Dr. June Francis (Professor and Director, Institute of the Black and African Diaspora Research and Engagement, Simon Fraser University):** Thank you very much.

My name, as you know, is Dr. June Francis. I'm the director of the Institute of the Black and African Diaspora Research and Engagement at Simon Fraser University. I'm also a professor in the Beedie School of Business and I chair the anti-racism data committee for the Province of British Columbia.

I want to acknowledge that at Simon Fraser University, we work on the unceded territories of the Musqueam, Squamish and Tsleil-Waututh people. My pronouns are she and her.

In my brief submission to you today, I would like to focus on diversity, equity and inclusion in research funding and submit that greater distribution of funds among universities of various sizes would better support these goals.

As acknowledged by the tri-agency action plan on DEI—diversity, equity and inclusion—“In order to achieve world-class research [in Canada], we must address systemic barriers that limit the full participation of all talented individuals” and “create a culture where...EDI considerations...[are] second nature.”

Likewise, the Bouchard report points to the need “to improve the underrepresentation and underparticipation of certain groups and encourage diversity across the research ecosystem” if we are supposed to address the “complex problems” we face that require “a broad range of perspectives and experiences.” Of course, as many of you know, the Canadian government acknowledged this inequity in the 2022 budget, where it aimed research funding directly at the under-representation of Black Canadians in academia.

Many universities, including mine, signed the “Scarborough Charter on Anti-Black Racism and Black Inclusion in Canadian Higher Education”—again, a commitment to redress anti-Black racism and foster flourishing for Black academics and researchers. The charter specifically calls for addressing the under-representation in funding agencies, including the tri-council and other federal funding agencies, again to address Black under-representation.

However, I submit to you that the success of all these efforts—all of the efforts directed at trying to increase the ingenuity and know-how of the broad range of racialized researchers who have, to this point, been excluded—will only actually work if researchers gain access to research grants to open and lead, in particular, new approaches—sometimes radically new directions in research—to fully represent the range of human know-how beyond the Eurocentric paradigms and subject matter that have dominated much of this research.

I will also say briefly that many of the awards from granting agencies support this idea that racialized people are, in fact, under-represented. We can go into that data if you wish, but I’ll submit that we have that data.

Let me just say that Black and racialized researchers are not concentrated in U15 universities. In fact, they are fragmented across the research spectrum of universities. Therefore, more diverse funding would better address the needs of DEI in research. Innovative approaches, such as the Institute of the Black and African Diaspora, have emerged to support these new directions and to break the stranglehold of entrenched research paradigms. However, again, they’re not concentrated in U15 universities. As a Black academic, I can attest to the numerous ways in which large universities have acted to perpetuate and create the very inequities in research that we’re seeking to address by their processes, policies and approaches.

I want to also point out, if we want funnels, that Black and racialized students often start their careers in the universities that are closest to them because of a range of factors for graduate work, including financial factors. Many are often at small and medium-sized universities. Research funding, therefore, to these universities is essential to provide the access and support and mentorship if we are supposed to build a pipeline of future researchers to address this racial equity gap.

• (1210)

In conclusion, a more equitable spreading of research funding beyond U15 universities is essential to support more equitable, world-class research in Canada.

Thank you very much.

**The Chair:** Thank you very much.

Now we’ll move on to Dr. Donna Strickland, Nobel laureate for physics, who is representing the Canadian Committee for Science and Technology.

**Dr. Donna Strickland (Professor, Canadian Committee for Science and Technology):** Thank you very much, Mr. Chair.

As the chair pointed out, I am here as a witness because I represent a group of outstanding scientists from across the country. Our

group wants Canada to play a larger role in global research and development because in the long term this research will produce societal and economic benefits for Canada.

Just to be clear, I am not speaking on behalf of my university or any of the universities where my colleagues work.

We also would like to point out that we do appreciate that the standing committee must have helped convince the government to increase R and D spending, particularly with respect to student scholarships, and we want to thank you for this leadership.

Although we were happy to see that R and D spending was going up, we, of course, wish to see the tri-council funded at least to the level the U15 asked for so that we could recover the loss from inflation that we have been suffering, but it’s certainly a step in the right direction.

It is not just about the money, though. What we would also like to see is a scientific advisory group formed, as was mentioned in the budget. We would like the advisory group to be made up of leading Canadian scientists and innovators. Having such a committee of scientists advising the government is done in many countries.

President Biden has a President’s Council of Advisors on Science and Technology, PCAST, made up of 30 of America’s top researchers in science and technology. Frances Arnold, who won the Nobel Prize in chemistry the same year that I won the physics prize, has been one of the two external co-chairs of PCAST since 2021.

One of the key science questions the president has asked PCAST to answer is, how can we ensure the long-term health of science and technology in our nation? This is a question that our government also needs to be concerned about. Science should not be politicized. By its very nature, science has a long time horizon and does not fit into the short time scales of sitting governments and even less so into industries’ quarterly and annual reports.

Other countries take the long view so that their children will be better off. My favourite example, as a few of you already know, is Korea, and not only because they spend almost 5% of their GDP on research and development. They do this not only because of military needs—as an aside, we too could build up our military spending by spending more on research—but also because they know that the country has reaped the economic benefits that this research has led to.

Korea has an intertwined system of support for research with government, academia and industry all playing equal roles, and then all benefiting equally from the participation.

Consider the example of Samsung. The Samsung company started back in the 1930s, almost 100 years ago, as a grocery store. Through government help and the obvious business savvy of the owner, that grocery store got into several other lines of trade. After the Korean War, the Korean government wanted Samsung to get into technology and gave them the funds through large tax breaks to start research in this emerging field.

When I first visited Seoul National University in 2011, I was taken to my colleague's optics lab in the tall, multi-storey Samsung building on the campus. My academic colleague was being well funded by Samsung, not to do research that would become a product in a year or two—that research and development was undoubtedly being done in Samsung's own research labs—but to work on futuristic holographic TVs, which we are still waiting for.

Samsung is now spending more money than the whole U.S. CHIPS act to make sure that Samsung can make the chips they will need in the future. Canada doesn't even have a CHIPS act. Where might that leave us? Right now, the chips are made in Taiwan.

We were left behind waiting for vaccines from other countries because we did not support our own biotech research from academia through to industry, so we had to wait until the other countries rightly made sure their own citizens were looked after first.

We want our government to follow best practices from other countries where government, industry and academia work well together and allow all three to benefit from the research. It doesn't have to be the Korean model. Denmark has tax laws about companies being owned by foundations, and these foundations have to support research. In 2023, I was hosted by the Novo Nordisk Foundation to give a public lecture at the Niels Bohr Institute of the University of Copenhagen, where the foundation had just announced the Novo Nordisk Foundation quantum computing program with funding of 1.5 billion Danish kroner, or about \$200 million U.S.

A larger academic research entity is the Novo Nordisk Foundation Center for Protein Research, which was established back in 2007.

- (1215)

Last fall, it was announced that in a \$500-million U.S. deal, the pharma giant Novo Nordisk, a company under the foundation, has acquired a University of Copenhagen spin-out, developing a novel therapeutic for obesity and type 2 diabetes. I watch commercials for this product on CNN all the time.

- (1220)

**The Chair:** I'm sorry. We'll have to call it quits on that at that point. Thank you for your testimony.

We go now to Dr. Blum, representing Saskatchewan Polytechnic.

Welcome.

**Dr. Susan Blum (Associate Vice President, Applied Research and Continuing Education, Saskatchewan Polytechnic):** Thank

you, Mr. Chair, and thank you to the committee for the invitation to appear as part of your study on the balance of federal government funding to post-secondary institutions.

I bring to you, as part of my comments, 16 years of experience overseeing research administration at a U15 university, and now almost nine years of experience at a top-10 polytechnic and college.

Today I am here before you to highlight the critical aspect of Canada's academic landscape—the distribution of federal funding and the invaluable role of polytechnics. In a nation celebrated for its cultural diversity and innovation, it's imperative to recognize the pivotal role played by polytechnic institutions in driving research, innovation and economic growth.

As we delve into the intricacies of federal funding mechanisms, it becomes evident that these funds serve as a lifeline for post-secondary institutions, enabling them to sustain operations, conduct research and provide pivotal student support. However, the distribution patterns of these funds reveal disparities and merit our attention.

The college/polytechnic sector only receives approximately 3% of total federal research funding support. While larger research-intensive universities demand and command a significant share of federal research funding, it's essential to acknowledge the underrepresentation of colleges and polytechnics in this allocation. Despite their substantial contributions to applied research, workforce development and industry partnerships, colleges and polytechnics frequently receive proportionately less federal funding compared to their university counterparts.

In applied research, by definition, we utilize the research that has taken place in the university sector to work with industries and community partners to solve problems and deliver timely solutions. Both sectors are extremely important to Canada.

This disparity not only impedes our capacity to invest in infrastructure and faculty development but also hampers our ability to offer innovative solutions tailored to meeting the evolving needs of industry and communities. In essence, it's a disservice to the essential role that polytechnics play in fostering practical education and training and providing real-world solutions.

The value, however, of polytechnics extends far beyond training. These institutions serve as catalysts for innovative and economic advancement, forging close ties with industry and community partners to address real-world challenges and to develop practical solutions. All our IP stays with our partners, even co-developed IP, which allows innovation to move forward at a faster rate. Our collaborative approach not only enriches the education experience for students but also fosters a culture of innovation that benefits society as a whole.

For example, our faculty and researchers work with start-ups and SMEs, as well as with multinational companies in Saskatchewan and also across Canada. Saskatchewan Polytechnic, for example, was number one in the country for number of partnerships working with industry and community.

The demand is huge, but the limiting factor for us to work with industry and community partners to drive that innovation is funding. We could do so much more if funding were available to support our industry and community partners to move innovative solutions forward.

Furthermore, the impact of polytechnics extends to regional economic development. Through our focus on entrepreneurship and innovation, our institutions stimulate job creation, attract investment and drive economic growth in our communities. We foster tech transfer and accelerate business growth by transforming research findings into commercial products and services, creating value for both academia and industry.

In conclusion, the distribution of federal funding must reflect the diverse contribution needs of Canada's post-secondary institutions. By addressing funding disparities and providing targeted support to polytechnics and colleges, we can enhance access to quality education, drive innovation and foster economic prosperity across this country. Let us reaffirm our commitment to investing in polytechnics as engines of progress to ensure that they continue to lead the way in applied research, innovation and economic development for our country.

Thank you for inviting me here today. I look forward to your questions.

**The Chair:** Thank you all for your testimony.

We're going to go to the first round. I'm going to have to do some trimming and have these questions limited to five minutes.

We're starting with Mr. Tochor.

• (1225)

**Mr. Corey Tochor (Saskatoon—University, CPC):** Thank you so much, and thank you to both of our witnesses.

Dr. Blum, it was very encouraging to hear that a post-secondary institution in our province of Saskatchewan is—if I heard this right—number one in terms of partnership with business.

How did we achieve that?

**Dr. Susan Blum:** It's been just developing those relationships and having the expertise within our institution.

Our institution, as you know, supports the entire province. We support all industry sectors. When industry or a community has a problem, we can pull together a team to deliver those solutions.

The big difference from the university in our sector is that our faculty don't run their own research programs. We only support. We drive solutions and work with industry partners. Then our partners see the value of that. It happens quickly and in a timely fashion.

If we can get research funding, that might take a little bit longer. Some of our partners just fund on their own so that they can get the solutions they need.

**Mr. Corey Tochor:** It's very much encouraging to have a post-secondary institution that's looking at real-world impacts and ways that research can improve our society. I'm very encouraged by that.

Unfortunately, on the negative side, I do know that in our city of Saskatoon, with the cost of living crisis that's taking place, the food bank is in record use right now.

What have you heard from students or employees about how they're dealing with the record cost of food right now?

**Dr. Susan Blum:** We're sensitive to that for the students. Within the research area, we actually initiated looking at researching food security among our students. We're also working with local food supports and providing opportunities at campus for our students.

I know that housing is an issue in Saskatoon, but I don't think it's as critical as in other areas of the country, given some of the housing availability that we have. The cost is cheaper in Saskatoon and Saskatchewan than in other places across the country.

**Mr. Corey Tochor:** We started to get hit on the housing, but definitely on the food. The 23% increase on the carbon tax has hurt the cost of food and people's lives, as we've all heard.

Another area for opportunity is what's happening with the new campus. You have experience at both the university and Sask Polytech. Can you explain, if you were associated with some of the capital campaigns to replace buildings at a university versus a polytech, if there are any differences there? Are there differences in approach that you think that Sask Polytech is taking or differences in the two facilities?

**Dr. Susan Blum:** This campus is very exciting. It's the first place anywhere in the country where we're going to have a U15 university, a top polytechnic and an innovation park all together in one location. The opportunities for collaboration for that sector are huge.

We have really good, close relationships within the community and with industry partners. That definitely helps support moving areas forward in the new campus. The collaboration on the applied research front, with student exchanges and so forth, are going to be significant with this new initiative.

**Mr. Corey Tochor:** Thank you.

It's my understanding that before coming to Sask Polytech, you spent 16 years leading the administration on research ethics, grants and contracts for the University of Saskatchewan, and then you started Sask Polytech in 2016. Is that correct?

You're probably positioned perfectly for this question.

What's the difference between accessing funds at the universities and Sask Polytech? What is a simple solution—or one of the simple solutions—that could be done by a new government to make the funding of post-secondary institutions more fair?

**Dr. Susan Blum:** That's a great question.

Yes, there's a big difference. There's some applied research at universities, of course, but a lot of it is basic theoretical knowledge research, which is critical for our society. In the polytechnic sector, it's all about the partners and dealing with solutions, so we need funding mechanisms that can work at the speed of industry, as was talked about at the earlier session, and are more timely.

I noticed right away that part of it was sort of trying to fit a square peg in round hole to fit into some of the standard tri-agency processes for the college and polytechnic sector. It is different, and we need to be supporting community. I see it as supporting community and industry, and we help to move that forward. We need funding supports to do that.

• (1230)

**The Chair:** Those are great questions and great answers. Thank you.

Now we'll go to Ms. Kayabaga for five minutes, please.

**Ms. Arielle Kayabaga (London West, Lib.):** Thank you, Chair.

I would also like to extend my welcome to all of our witnesses and participants.

I'm going to start my questions with Ms. Francis from SFU.

Could you provide an overview of the government funding that the institute received as part of SFU and how it supports the research and engagement initiatives that you are and your colleagues are working on?

**Dr. June Francis:** One of the greatest challenges we're facing at our institute is in fact funding—grant funding, etc. We have start-up funding from Simon Fraser University, but in terms of support for the institute, much of that comes from the researchers' grants and the ways that researchers have been able to acquire grants.

Let me just say that our institute was just accepted by the senate of Simon Fraser University about two weeks ago. It's a very new institute.

In response to the fact that our racialized researchers do not feel well supported, our students do not feel well supported in being

able to be supervised as students and getting access to some of the research topics they're interested in because of the funding deficit. In fact, in terms of access to research, that is one of our greatest challenges.

As you know, Black academics are under-represented in the system and under-represented in terms of getting access to and winning research grants. Part of that is that we have a whole research apparatus that has not valued those topics and does not often see value in addressing issues of race. For example, during COVID-19, when it became really important, we saw that our scientific research bodies had not spent time looking at how COVID-19 may disproportionately impact Black communities, and we know that they were overrepresented.

The short answer is that we're hoping for targeted funding to support this under-representation, and right now that is our biggest challenge.

**Ms. Arielle Kayabaga:** Accessing funding is one of the barriers you talked about earlier in your comments.

**Dr. June Francis:** Yes, it's accessing funding, whether it's individual researchers or a network of researchers.

I'll tell you this. When other people like the U15 reach out to me as part of a research grant, it's often already fashioned. I have very little impact on leading it or on taking it in a direction that would address the real deficit in research know-how that affects Black and racialized communities in this country, so yes, it is a real challenge.

**Ms. Arielle Kayabaga:** Thank you for that answer.

To Dr. Strickland, earlier in the study, Chad Gaffield, who is the executive officer for the U15 group of the Canadian research universities, testified to the importance of research collaborations between universities, research hospitals, colleges and polytechnics, and organizations. He said that research-intensive universities act as a catalyst in Canada's entire diversified research ecosystem.

How common are these partnerships? How often do you see them? Can you comment a little bit on this statement?

**The Chair:** You have about 45 seconds.

**Dr. Donna Strickland:** Again, I don't represent the university.

I think each type of research has its own collaborations. Canada has one big, powerful laser, and all of us who work with high-intensity lasers work through that. There will be polytechnics involved with that, as well as the universities. We would probably like more colleges, but I don't think any of our colleges do that much optics yet.

I think that we do it. What we as scientists are more concerned about is that we don't do it in a big enough way to make sure that we could go global.

• (1235)

**Ms. Arielle Kayabaga:** How would you benefit from that?

**Dr. Donna Strickland:** There's so much research going on in any one of our fields, and almost all science is global. When other big players are playing in certain fields and Canada does not put research dollars behind it, it's hard for us to get onto the even bigger systems out there in the world.

**The Chair:** That's great. Thank you.

[*Translation*]

Mr. Blanchette-Joncas, you have five minutes.

**Mr. Maxime Blanchette-Joncas:** Thank you, Mr. Chair.

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

Dr. Strickland, I would like to welcome you and thank you for being here. I also want to congratulate you on your career as a distinguished researcher. I know you're co-laureate of the Nobel Prize in physics for your work on the development of laser technology. So it's an honour to have you here today.

I'd like to know about the distribution of funds for research funding. We want to see Nobel laureates in academic institutions, particularly institutions that don't have a prestigious history, which we know well. You are also familiar with the institutions that are members of the famous U15 group, the 15 largest universities in Canada. How do we give a chance to a person who has potential, who has talent, who would like to do research, but who has to leave because they don't have access to a university that has the funding to do more scientific work? As you just mentioned, Canadian and Quebec researchers even go to other countries because the scientific ecosystem isn't very developed in Canada.

[*English*]

**Dr. Donna Strickland:** Well, all Canadian researchers go elsewhere. This is a big problem. Getting back to why we need to spend more money, this is one of the reasons. You can make twice as much money as a grad student at Princeton as you can as a grad student at any Canadian university. We're asking a lot of our young and most talented people to stay in Canada just for the sake of being in Canada. This is not a problem of a small university versus a big university; this is across the board at our universities right now. I think that's a shame.

Again, I would say that Canada actually has a much more egalitarian system than most others do, and we have our tri-council. We are looked at individually. It's not that our university gets looked at and then we get looked at underneath. I think our tri-council does a

good job with the peer review, so that people have a chance to show off their research. I think Canada's problem is actually not the lack of egalitarianism so much as it is widespread low funding.

[*Translation*]

**Mr. Maxime Blanchette-Joncas:** Thank you.

We know that research funding is the crux of the problem, as you just said. Other researchers, regardless of their educational institution, will leave if they are offered better conditions elsewhere, if they have access to better infrastructure, or if they find other research teams with expertise in certain fields.

I'd like to come back to the distribution of funding. At our last meeting, Vincent Larivière, from the Université de Montréal, told us that just because a university receives more funding doesn't mean that it's more effective in its research. For example, the universities that are part of the U15 group of universities, which receive more funding, aren't going to produce more scientific research.

What do you think about investing more money in an institution that doesn't produce more scientific research results, compared to a small or medium-sized university, which has fewer resources but manages to produce more with little money?

[*English*]

**Dr. Donna Strickland:** Well, again, big universities have more scientists, so they will get more money, but that doesn't mean that's more money per person. Per person, the research is probably being looked after on an individual level. Big universities may have other funds to draw on to provide more help with the research.

As I said, the tri-council agencies, I think, do a pretty good job at letting you pick which researchers across Canada are doing the best work and therefore getting funded on an individual scale. You can't look at a great big U15 institution and say that it gets a lot more money than a small school does, because of course you're not going to give a lot to a small school, but for the per capita researcher, they probably will. Of course, also, some small schools don't even have graduate programs, so they will be paying for one student in the summer or what have you, and others will have large groups.

Otherwise, it's hard for me to say.

• (1240)

[*Translation*]

**Mr. Maxime Blanchette-Joncas:** Okay.

Dr. Strickland, I want to go back to a few facts. It's said that 80% of funding for scientific research goes to 15 major universities in Canada. As you know, there are nearly 100 universities in Canada. If we do a simple mathematical calculation, would you agree that the fact that the federal government allocates 80% of these investments in scientific research to just 15 organizations represents a real imbalance in terms of per-student funding? The data speak for themselves.

How do we make it accessible?

[English]

**The Chair:** There's time for a very brief answer, if we can get to that.

[Translation]

**Mr. Maxime Blanchette-Joncas:** I'll turn it over to you, Dr. Strickland.

[English]

**Dr. Donna Strickland:** I don't have an answer for that. If you're talking about tri-council money or the other funders, to me it's an issue of not having enough money to go around.

**The Chair:** Thank you.

I'm sorry that we're so tight on time. I have to watch it quite closely right now.

Mr. Cannings, you have five minutes.

**Mr. Richard Cannings:** Thank you all for being here today.

Dr. Strickland, as Monsieur Blanchette-Joncas mentioned, it's an honour to have a Nobel Prize winner before us today.

You mentioned this proposed advisory council on science and innovation that was mentioned in the budget. You made some comments about the necessity of having scientists advise the government on the whole science and research ecosystem. According to the budget, the "Council will be made up of leaders from the academic, industry, and not-for-profit sectors".

Can you comment further on what you think the make-up of that council should be and what its role would be in answering this and other questions that we're looking at today?

**Dr. Donna Strickland:** I would like it to be leading researchers, but again from our government labs, from our industry and from academia.

As I say, the countries that do it best are the ones that have figured out how to have all three work together and be instructive. The equivalent would be NRC in the United States, and also these joint things at universities. Different places do it differently. Other countries have these government labs that also then have academics at them and industry connections.

This is why we would like scientists—and it wouldn't cost that much, because we're usually willing to do it for free—to advise on things like how we best get industry to work together with academia, with the government, so we can move forward on the big-picture items, whether it's to be ready for the next pandemic or whether it's how to do sustainable agriculture, how to do green energy better, how to do industry productivity better, how to do any of

these large things. There should be these questions, and scientists should be asked, because we do go around the world and see these other systems, and we could bring this back to Canada and say that this is a really good way that other countries have done it.

That's why we think scientists should be at the table advising the government.

**Mr. Richard Cannings:** To follow up on that, you mentioned the Samsung example. Canada, it seems, has fewer giant companies like that. Maybe that's a problem of how the government has failed to nurture companies.

There's the American example. There are lots more larger companies in the United States, so they presumably have more money to put to research.

How do we get from where we are today to where you want to be in terms of what the federal government can do in allocating funds for research?

**Dr. Donna Strickland:** When I started in lasers in the 1980s, the third-largest laser company in the world was Canadian, here in Ottawa, Lumonics, and we let that go. One of the largest communications companies in the world was Nortel, and before that we said, "Oh, we have to keep the American car industry here, so we'll invest", but we let Nortel go. Both had 90,000 employees. Somehow, because nobody else but Canada was fighting for Nortel, it wasn't worth fighting for.

We have to take these gems that are Canadian-born and bred and find ways to invest.

One of my favourite examples is Bordeaux, the region of Nouvelle-Aquitaine. It has a president who really sees the advantage, who said to me that they can't just keep living off their wine. They are going to invest in science and technology.

Not only did they build their own new graduate program for optics and put in the small start-ups with the graduate program there, but they said they were also investing billions to make sure that when these companies spin out, they get through that valley of death so that they become big companies. Now the biggest laser company is there in Bordeaux.

There is a way to do it, and we just have to foster it from somebody's lab in an academic setting all the way to the company, and make the company big. Then we say that since we helped you, we expect you to help us back, and then you make sure that you invest again in the academics and we get the whole loop going together.

That's what we need to do.

• (1245)

**Mr. Richard Cannings:** I have 20 seconds and I have so many questions.

How can the federal government best address that from here in Ottawa?

**Dr. Donna Strickland:** Well, I know that a lot of the small high-tech companies wish that we had a small business loan like they do at SBIR, as it's called, in the United States. That could help so many. They get grants to get off the ground, but then there are also grants to make sure that they get through that valley of death until they become a larger company. We do have to make sure that every time they're lured to California, we have a budget to say, "Stay in Canada."

**The Chair:** That's great. Thank you.

We have big topics and little time, but thank you very much for getting that in.

Now we'll go to Mr. Lobb.

We'll do four minutes, four minutes, two minutes and two minutes to bring us to the end of the meeting.

Mr. Lobb, you have four minutes.

**Mr. Ben Lobb (Huron—Bruce, CPC):** Thanks, Mr. Chair.

Thanks to all the witnesses for being here today.

Dr. Strickland, Waterloo is not too far from where I live. I live in Huron—Bruce—Bruce County and Huron County.

**Dr. Donna Strickland:** Where I have a cottage—

**Mr. Ben Lobb:** Yes.

I was wondering what your thoughts are, because you have a lot of experience with this. Is the issue we're talking about today really an issue, in your mind, or not actually an issue?

**Dr. Donna Strickland:** What exact issue?

**Mr. Ben Lobb:** The underfunding to the smaller universities: Do you think it's fine the way it is, or should there be a change? Is this committee wasting our time right now?

**Dr. Donna Strickland:** All I know is that underfunding is an issue in Canada: It's small and big. There's nobody that's overly funded when it comes to science.

The Canadian scale is way low compared to that of all of our competitors, and not even all of our competitors. Of 32 OECD countries, we're racing to the bottom. We don't want to be at the bottom of 32 countries. I think we can raise all boats by spending more money on R and D.

**Mr. Ben Lobb:** Okay.

If you look at it, is there a case that we're doing a little bit for everybody and we should focus more on certain areas, or is it a good model that just needs more money?

**Dr. Donna Strickland:** That's right. As I said, we're already an egalitarian system. I think the Bouchard report made the point that you can't just look at the big initiatives.

We do need big initiatives. We should be looking at the next pandemic. We have to figure out what the big strategic goals are, but we don't ever know, right? When I was doing my work on lasers, we weren't trying to cut the cornea with that laser. That laser was made to do just pure research, and somebody, 10 years later, thought: "You know what? I can do eye surgery with it."

We want to do everything. Science has to do as much as we can. I mean, Canada can't do everything. We're only so big, but we don't want to limit what we do. Still, we want to make sure that we also have money going to the strategic areas, and we need to know which strategic things Canada should play a role in.

• (1250)

**Mr. Ben Lobb:** With all of your experience through the years, and your expertise.... I think it's impossible, really, to compete with the United States, seeing that it's so close to us. It's next door. It's very easy to go there to study to be a researcher, so should we aspire to try...?

You referenced Princeton. Should we aspire to equal it—maybe not just Princeton, but on average? Is that what we should try to do, or are we making the case that we'll do more funding? Should we consider more funding, plus you get the Canadian experience? What do you think? You've talked to enough experts.

**Dr. Donna Strickland:** I think what's so sad for us is that when I was a graduate student and I got my NSERC scholarship in 1981, it was \$11,000. That was more than an American made. I could get an apartment for \$250 a month and I was getting paid almost \$1,000 a month. Look at that and look at what we ask our students to live on now. Money in other countries has gone up with inflation, and we've just sort of hung around.

We've gone off the track. This is all we're really saying. We have to get back on the track. With 40 million people, we're going to do what 320 million Americans can do, but Denmark has, I don't know, only eight million people, and it has these large companies. It's supporting huge research projects at its universities, and it's a very small country compared to us. If Denmark can do it, Canada can do it.

We just have to have the will to do it, and to realize that for every dollar you pay into R and D, five years down the road it's going to give more than double that money back. It's just an investment in the future, and we keep getting better and better when we invest in the future.

**Mr. Ben Lobb:** How is the time, Mr. Chair?

**The Chair:** You have five seconds.

**Mr. Ben Lobb:** Five minutes to go...?

**Voices:** Oh, oh!

**Mr. Ben Lobb:** Okay. Thanks.

**Hon. Michelle Rempel Garner:** I have a point of order on decorum in those five seconds.

I would just like to say that it shouldn't have taken a Nobel Prize to bring Wikipedia to giving Dr. Strickland a page. I'm just saying.

**The Chair:** Thank you.

I don't think that was a point of order, but point taken.

We'll now go to Ms. Bradford for four minutes, please.

**Ms. Valerie Bradford (Kitchener South—Hespeler, Lib.):** Thank you, Mr. Chair.

Thank you to all of our witnesses for appearing today and sharing your unique perspectives and experience.

Before I start the questioning, I would like to reiterate that the goal of this study is about maximizing our national research capability and ensuring that all researchers and research institutions are utilizing their research expertise to maximum potential. That's what we need to do. That's what we're hoping to accomplish.

Dr. Strickland, I'm pretty sure this is the first time we have had a Nobel Prize winner before this committee and, I think, many parliamentary committees. Welcome. I'm pleased that you're actually from my area.

Your university, U of W, is located in a very collaborative community. I personally had the opportunity to witness the collaboration of the university in the community first-hand.

In your experience, does the size and location of a post-secondary institution affect its ability to build relationships with its local communities?

**Dr. Donna Strickland:** I think it also takes a will. It takes the right mindset to go out.... Don't forget that Waterloo started as an engineering school, so it's a totally different thing. We had the mindset right from the get-go. We had the mindset to be a co-op institution right from the get-go. Of course, then we are always looking for where our students can go, and that should be bringing the industries back to us to help that way.

Also, now the Toronto-Waterloo corridor wants to compete with California. I hope they can. Of course, we have our Communtechs and what have you.

**Ms. Valerie Bradford:** Building on that, how do relationships with community organizations, businesses and other post-secondary institutions help support a post-secondary institution's research goals?

**Dr. Donna Strickland:** There are a few ways to go with that.

I'm not sure if I'm allowed to say this, but anyway, I met somebody from high up in Apple, and they said, "We take more students from you than anywhere." Well, if that's the case, they should be coming back to fund us. It has to go back and forth and all around.

Industries now, especially in North America.... The United States is just as worried as we are that foreign students aren't going to keep coming. We have to, as a whole North American continent, try to convince our own young that science and engineering is a thing to go into.

It's going to keep going around and around. The industries need us and we need them.

**Ms. Valerie Bradford:** Yes. There was a reason that Google put its primary plant in Canada and located it very close to the University of Waterloo.

How can the Government of Canada better recognize and reward community partnerships in the research granting process?

**Dr. Donna Strickland:** What I would like to see is a better way for industry.... I don't know about the polytech universities, but they may be doing short-term research.

It's very hard. For a while, to get a research grant we had to have an industry partner. I thought, "Are we now supposed to go around begging for this money, not knowing where to go? Where is that in our expertise?"

Again, I would like a different kind of system to get us to work together. Whether it's an institute where everybody comes together under one strategic initiative or something like that, there has to be a better approach to get us to work together.

**Ms. Valerie Bradford:** In our most recent budget, budget 2024, "Fairness For Every Generation", there is the proposed creation of a capstone research funding organization that would include the granting councils—the Social Sciences and Humanities Research Council, the Natural Sciences and Engineering Research Council and the Canadian Institutes of Health Research—within its structure, as well as a proposal for the creation of a new advisory council on science and innovation.

Do you have any recommendations for how the new funding organization and advisory council could be structured to better support research in post-secondary institutions of all sizes?

**The Chair:** I'm sorry, but we are out of time.

She could submit it in writing, if there's any additional information.

The next two minutes go to Mr. Blanchette-Joncas.

• (1255)

[*Translation*]

**Mr. Maxime Blanchette-Joncas:** Thank you, Mr. Chair.

Dr. Strickland, I appreciate your advocacy for investments in scientific research. You have a distinguished career, and you have an international perspective. You've done studies in the United States. You understand the importance of being competitive on the international stage in order to attract the best researchers and offer them the best possible conditions.

In Canada, what can the federal government really do to get back in the game when it comes to scientific development?

[English]

**Dr. Donna Strickland:** This is also why I started a new network at Waterloo called TRuST, Trust in Research Undertaken in Science and Technology. I think if our public better understood the important role of science, our government would also be out there more and championing it as well.

First we have to champion the “worthwhileness” of it—which is probably not a good word—and once we get that going, then we need to have this advisory group, ranging from industry to the most basic sciences, to figure out how to group us together in ways that make us work well together—but we need more money.

[Translation]

**Mr. Maxime Blanchette-Joncas:** Dr. Strickland, do you think the federal government has a role to play, particularly in educating people and making them aware of the importance of scientific research?

The government bought a pipeline for \$34 billion. Imagine where we would be today if the government had invested \$34 billion in science. Do you have any comments on that?

[English]

**Dr. Donna Strickland:** We've actually had this problem for many decades, so it's not just this government.

We need to appreciate what science does, and this is why I said it's a long-term thing. It's not just the one government. It's that we do have to get out there and understand the importance of science, and we would really appreciate it if...

I will say that I've had longer conversations with the Prime Minister of Spain than with my Prime Minister. I have spoken to the Mexican government, the state government of Mexico. Other governments want to hear. President Macron, I will say, had a 90-minute conversation with his French physics laureates about how to make sure FREYA stays at the leading edge of physics.

**The Chair:** That's great. Thank you.

I think that's an indirect shout-out to see what we can do in Canada here, or maybe a direct shout-out.

Mr. Cannings, go ahead for two minutes, please.

**Mr. Richard Cannings:** I'd like to continue in that vein.

Yesterday I met with the quantum people from UBC, and I must admit that I don't understand much about how quantum physics works. It's one of those areas in which Canada has a real core of top world researchers. We have the same in AI. The government provided some funding for AI in this budget.

Is that the kind of funding that would make a difference? The quantum field is still quite nascent. There is little opportunity for the monetization of it by companies, but is that where we should be concentrating some of that research funding, in these areas where we have a concentration of work?

**Dr. Donna Strickland:** Those two are already among the world's leaders. We spend more per capita on quantum than any other country does, so let's keep that going and let's not lose it. I think in AI we're getting to be stars.

We have to look to the future. What will be the next one? Luckily, for us, we had a billionaire who wanted to start quantum. If we could count on all of our billionaires being science lovers, we'd be great. Then our government would jump in when our billionaires did. Maybe our billionaires would jump in if our government started it. This is one of the things for an advisory council: What are the big ideas of the future? Really, I think a lot of us think we have to get vaccines going in this country. I don't know how this hasn't happened already.

There are other things out there, and we have to think about them and get ready for them.

**Mr. Richard Cannings:** I'll continue with the vaccines again.

Pieter Cullis, a friend of mine from UBC, was instrumental in the Pfizer vaccine. Is that...?

**Dr. Donna Strickland:** That's right. He's the one who did the lipid nanoparticles—which is how the vaccine gets into us—not the vaccine itself, and yet he couldn't get the funds to start the company to do it and have his own vaccine company or be part of a vaccine company. This is why we were sort of stuck waiting, but Pfizer took his technology and ran with it, so the Germans got it and we waited for it.

We can't keep allowing these things to slip through our fingers. All our companies shouldn't go to California.

• (1300)

**The Chair:** Thank you very much.

Thank you to all of our witnesses for your time with us this morning—Dr. June Francis, Dr. Donna Strickland and Dr. Susan Blum. Thank you for all you're doing for science in Canada as well.

Inclusivity is another issue that I wish we had more time to talk about, but this is the way that the committees are structured: We have a little time for a lot of information. However, if there is more information, please do send it in to us.

To the committee, on Thursday, May 2, at 10 o'clock I'll be tabling our most recent report on the research partnerships among Canadian universities, research institutions and entities connected with the People's Republic of China. That will be in the House at House opening on May 2.

We will have a little bit of time at the end of the next meeting to look at the budget for the upcoming Arctic study that we'll be beginning next week as well. We'll take just a few minutes at the end of our meeting on Thursday to address that.

With that, thank you for your time, everyone. The meeting is adjourned.

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