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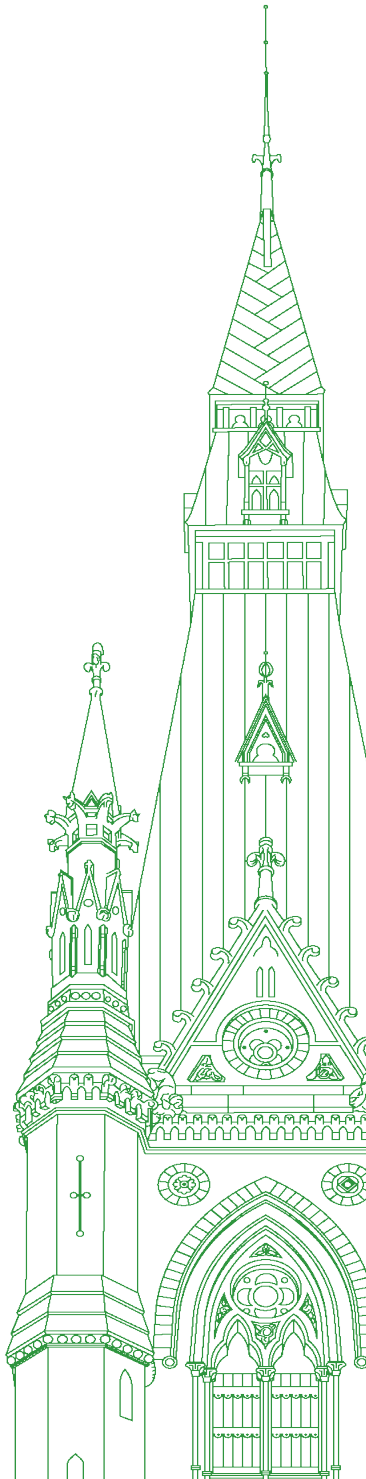

Chair: Mr. Lloyd Longfield

Standing Committee on Science and Research

Thursday, April 18, 2024

● (1100)

[*English*]

The Chair (Mr. Lloyd Longfield (Guelph, Lib.)): Welcome to meeting number 82 of the House of Commons Standing Committee on Science and Research.

Today's meeting is taking place in a hybrid format, pursuant to the Standing Orders. Therefore, members are attending in person, in the room and remotely using Zoom. Both of our witnesses are here virtually today.

For those participating virtually, there are a few rules. You can ask to speak in the official language of your choice. Interpretation services are available for this meeting. You have the choice, at the bottom of your screen, of floor, French or English. If interpretation is lost, please notify me right away and we'll suspend until we can get the interpretation services restored.

For members participating in person, proceed as you usually would when the whole meeting is in person. .

Before speaking, please wait until I recognize you by name. If you are on the video conference, please click on the microphone icon to unmute yourself. For those in the room, your mic will be controlled as normal by the proceedings and verification officer.

As always, try to make sure your earpiece doesn't come close to your microphone so that we don't create feedback in the earpiece and cause hearing damage to the interpreters as well as to the members who are participating here.

All comments should come through the chair, please.

Please speak slowly and clearly. When you're not speaking, your mic should be on mute.

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

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 of the distribution of federal government funding among Canada's post-secondary institutions.

It's my pleasure now to welcome, from Dalhousie University, Dr. Alice Aiken, vice-president of research and innovation; as well as, from the University of Lethbridge, Dr. Dena McMartin, vice-president of research.

You each have five minutes for your opening statement.

We'll start with Dr. Aiken, from Dalhousie, please.

Dr. Alice Aiken (Vice-President, Research and Innovation, Dalhousie University): Thank you.

[*Translation*]

Good morning.

I am pleased to be here with you. I would like to extend a heartfelt thank you from Canadian researchers to this committee.

[*English*]

Your work has enabled the historic investment in research and graduate students that was announced yesterday, so thank you.

Canada's universities play an integral role in our national research ecosystem, supporting the development of highly skilled talent, the production of new ideas and technologies, and the transfer of new knowledge and innovations to industry and everyday life.

Canada's research-intensive universities, including Dalhousie, are foundational contributors to the pan-Canadian research and innovation ecosystem. We not only cultivate academic excellence and robust collaboration but also act as vital connectors between academia, industry and the international knowledge community.

Research funding from the federal government is awarded to researchers across post-secondary institutions through a competitive, impartial granting process. These funds support research and talent development at institutions large and small across the country. Research-intensive universities act as research hubs, housing crucial research infrastructure, such as labs and highly specialized equipment, that supports critical research initiatives. By facilitating the development of robust research networks, we ensure Canada's prominent position in global innovation and research, while also enhancing domestic capacity.

A larger proportion of funding flows to larger universities, in part because of the higher number of professors, the availability of critical infrastructure and equipment, and the access to talent through graduate and post-graduate programs. The combination of specialized infrastructure and research-focused programming creates the conditions for research intensiveness. As a research hub, Dalhousie University has research projects that involve researchers and students across multiple institutions and organizations locally and globally.

I'd like to highlight two examples of significant Dalhousie-led research initiatives that, through collaborations with other institutions, industry and communities, contribute to Canada's economic well-being.

The “transforming climate action: addressing the missing ocean” project, TCA, serves as a standout illustration of how the Canada first research excellence fund, CFREF, underpins significant research initiatives by leveraging institutional capabilities.

Supported by a $154-million grant through CFREF, the TCA activates a total investment of nearly $400 million in cash and in-kind contributions. The TCA research program is a collaborative effort involving more than 170 researchers from diverse academic disciplines, institutions, provinces and languages.

This endeavour, led by Dalhousie University, in collaboration with the Université du Québec à Rimouski, Université Laval and Memorial University of Newfoundland and Labrador, showcases the strategic use of CFREF to foster a world-leading research network. The project focuses on the ocean's critical climate role, leveraging extensive collaborations with indigenous communities, government, industry and international partners.

I'd also like to speak about the common ground Canada network project. Funded by a $2-million SSHRC network on sustainable agriculture grant, this initiative brings together social scientists to share, grow and apply knowledge about the relationships necessary to transition Canada's agriculture and food systems to net zero. It enables multidisciplinary engagement to ensure that the costs and benefits of net-zero transition are equitably shared.

The network is led by Dalhousie and includes 49 academics and 22 not-for-profit organizations. Our partners are Carleton, Lakehead and Wilfred Laurier universities, and the universities of Victoria, Alberta and British Columbia.

I'll close by noting that research is a resource-intensive enterprise. It requires ongoing investment in people, infrastructure, robust academic programming that supports a steady pipeline of learners at the graduate and post-graduate level, as well as technical and operational expertise to manage unique facilities and processes. Canada's larger research-intensive universities are particularly well positioned to lead major research initiatives and to act as research hubs, engaging many collaborators from other institutions.

Thank you.

● (1105)

The Chair: Thank you very much.

Now we'll turn to Dr. McMartin from University of Lethbridge.

Go ahead, please, for five minutes.

Dr. Dena McMartin (Vice-President, Research, University of Lethbridge): Good morning. Thank you for the invitation to address the Standing Committee on Science and Research.

It's very encouraging to see this committee actively inviting voices that represent Canada's small and medium-sized universities.

For context, allow me to tell you a bit about my region and why the equitable distribution of research and special initiative funding is so important.

Lethbridge, Alberta, is a city of 105,000 people, and the main service hub of a region of more than 350,000 people. We are neighbours with the Blackfoot Confederacy, with whom we share close partnerships to the point that our university holds a Blackfoot name, Iniskim, meaning Sacred Buffalo Stone.

If you drive through Lethbridge, you will see the businesses that support Canada's premier food corridor of agriculture and food-processing industries. It will also become quickly apparent that Lethbridge is a university town, or really a post-secondary town, that is home to both the University of Lethbridge and Lethbridge College.

Our students, staff and faculty have significant economic and cultural impacts on our region. This context is important, because community leaders in 1967 understood the importance of a university to the success of the city and the region. That has not changed. Really, it's the same conversation this committee is having today.

Our researchers are working on issues that matter to the communities we serve and to Canada. What's important to our region right now? It's water, food security, mental health and addictions, and rural and indigenous health.

As a regional university, we're deeply connected to the communities most affected by our research outcomes. We live where we learn, and we affect where we work. The research that happens at the University of Lethbridge is of the highest quality. For example, we undertake neurosciences, RNA technology development, and mental health and addictions research by internationally recognized researchers who recruit, train and work hard to retain fresh talent in our region. This new talent helps to diversify the economy, create new businesses and jobs, improve quality of life and ensure access to services that are essential when people choose a place to live and raise a family.

We are the highest CIHR-funded institution in our category nationally, but even at that, the combined total of non-U15 institutions receives less than 5% of all CIHR funding available. That means enormous stress on our ability to compete for the best grad students, post-doctoral researchers and faculty, yet we do compete and we do succeed.

Part of how we succeed is through authentic and direct connections with our end-users, community partners and regional priorities. What is relevant to our region is relevant to Canada. A thriving small urban and rural Canada is essential for a healthy, strong and economically stable country.

With all of these exceptional benefits, we also need to acknowledge the challenges of being a small university. The growing number of important compliance requirements hit us disproportionately. We have to meet all of the same requirements as our larger counterparts with much lower capacity, fewer staff and single points of failure, and that gap is growing as requirements increase and access to funding to pay for those needs declines.

I want to clearly note that we are supportive of the Bouchard report and note that special attention must be paid to address inequities. Competitiveness for large investments reinforces the division of access.

For instance, with the Canada first excellence research fund, worth multiple millions of dollars, most smaller institutions don't have the staff capacity to compete. We have the facilities. We have the expertise. However, we don't have the administrative overhead. We can't pull faculty out of their assigned work to focus solely on building those application processes, and we don't have the resources to hire outside grant writers and project managers who create that success. Therefore, we partner rather than lead.

However, those partnerships and those programs come with administrative and operating funding that give the lead institutions ever more capacity to build to the next successful massive investment. Success begets success. For smaller and regional institutions, we often can't access that cycle.

Recently, some of the larger research funding programs included early-stage development funding that really helped to alleviate some of that disparity, so one recommendation I would make is that all of these large institutional research programs include development funding targeted specifically for smaller universities to level the playing field.

This committee must ask, when research funding is concentrated in Canada's largest universities and in the largest urban centres, are we addressing the needs of all citizens? Are we properly dealing with the issues that affect all Canadians when we disadvantage geographically located institutions across the country?

Thank you.

● (1110)

The Chair: Thank you, Dr. McMartin.

Thank you both for your testimonies.

We'll move to our questioning round for six minutes with Mr. Lobb, please.

Mr. Ben Lobb (Huron—Bruce, CPC): Thanks very much.

Thank you to both the presenters here today.

My first question is for the University of Lethbridge and Ms. McMartin.

If we were to do what you had mentioned, do you think we should go through all the different grants that are provided and look at the results that we're getting first and then move forward in contemplating levelling the playing field?

Should we make sure we're getting value for our dollars and for all the research money invested in the universities?

Dr. Dena McMartin: That's a great question.

I think the tri-agencies, CFI and other federal funding agencies do an exceptionally good job of collecting that kind of data.

The universities are held accountable by both the federal government and provincial funders to ensure that we're making the best use of the research funds we receive—that we're impacting communities, influencing policy, generating economic activity and creating talent for the future of Canada.

I do think that we have a very efficient system in terms of the return on investment for research funding across the country.

There is always room for improvement, of course. I think that our current review processes, while extraordinarily robust and certainly internationally recognized and renowned, could still use some improvement in terms of determining where and how those funds are allocated.

● (1115)

Mr. Ben Lobb: I always go back to the one I brought up a few times on this committee, which is research dollars that were given to study Dolly Parton's lyrics. I'm sure that there are other ones like that out there—maybe not Dolly Parton's lyrics, but ones that everyday Canadians would wonder why the heck the government is spending money on that.

The question I would have for Ms. Aiken at Dalhousie University is the one that I think probably the smaller and mid-sized universities get frustrated with. It's the fact that they're kind of led to believe, or it's put on them, that they don't have the basis, the staff or have the infrastructure to do the research projects and to “play with the big guys”.

I always go back to the University of Guelph. I just can't believe there's another university in Canada that does as much top-quality agricultural research as the University of Guelph, yet it's not in the U15 gang.

What do we do to level this playing field?

It doesn't seem right that Guelph would not be considered as one of the top research universities or at least be eligible for doing important ag research.

Dr. Alice Aiken: I think you would find that Guelph probably does receive the bulk of agricultural research funding, right up there with Alberta and Saskatchewan, in terms of funding dollars for agricultural research.

The U15 group, in my understanding—it predates me, as a university executive—was formed in 2012 in order to bring views of common interest across research-intensive universities to the government.

I would think we would all recognize that there are many research-intensive universities that aren't necessarily part of the U15. We see Sherbrooke, Guelph, Concordia, Memorial and lots of other universities in that category. They are all research-intensive universities as well, based on their infrastructure.

At some point—I think my colleague, Dena, mentioned this very well—sometimes it's a size issue. We're the smallest of the U15 universities and certainly some on the non-U15 group are even a bit bigger than us, student-body-wise.

The research intensity, I think, deals with how you prioritize within the university and within your operating budget. I do think sometimes that the smaller universities don't have the capacity to apply for really large-scale grants.

I'll give you an example. We're all looking at Horizon Europe. Dalhousie wouldn't consider leading a Horizon Europe application. We'll partner, but we don't have the size or the infrastructure to lead that.

We might see U of T or UBC do something like that, but we wouldn't see another university in Canada have the capacity to do that.

Mr. Ben Lobb: Does Dalhousie receive agricultural research grant dollars?

Dr. Alice Aiken: Yes, we do. We have a faculty of agriculture.

Mr. Ben Lobb: How do they determine, then, what Dalhousie should do versus what Guelph should do? You were saying that Guelph receives the bulk of the agricultural research.

Dr. Alice Aiken: The vast majority of Guelph's agricultural research money comes from the Ontario government. However, I would say, looking at the various tri-agencies, that Guelph still receives high levels of agricultural funding—more than we would receive, certainly.

A lot of agricultural research, though, is funded through industry partnerships and industry organizations, such as the dairy farmers and the Wheat Board. They are a lot of the funders of agricultural research and certainly are supportive of work at all of the institutions.

Guelph is a standout in agriculture, though; there's no question about it. I don't think anyone would question that.

Mr. Ben Lobb: Thank you.

The Chair: Thank you so much.

As the member from Guelph, I appreciate the conversation around my hometown.

I will now turn the floor over to Ms. Diab from Halifax.

The floor is yours for six minutes, please.

● (1120)

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

We'll now talk about my hometown.

Welcome to both of our witnesses. It's fabulous to have the two perspectives and see how they link together.

Dr. Aiken, it's great to have you representing Dalhousie. For the record, it is the only U15 university in the Atlantic provinces.

Today's study is important. We're talking about the distribution of federal government funding among Canada's post-secondary institutions.

Nova Scotia has slightly more than one million people, and it has 10 universities. Six have their main campuses in Halifax. Four are outside the Halifax municipality. We also have the fabulous Nova Scotia Community College that has 14 campuses throughout Nova Scotia.

I speak from experience. Not only have I lived there most of my life—with the exception of a number of years when I was small and living outside the country—but I was also the provincial minister of labour and advanced education at one time. There is fabulous work going on there.

I want to congratulate you and Dalhousie for launching your Bringing Worlds Together campaign that was just launched this month. This is Dalhousie's vision. It's a $750-million fundraising push to strengthen student experiences, expand research and its impact, and intensify your service to both local and global communities. It is the largest university campaign in Atlantic Canada's history, but you're also the largest university in Atlantic Canada.

In your opening remarks, you highlighted two of the great things that you're doing with universities throughout the country. Can we go back to just talking about Atlantic Canada and the smaller universities we have in Atlantic Canada? As I said, there are 10 in Nova Scotia, which has slightly more than one million people. Can you tell the committee what Dalhousie's relationship is with those other universities and with the community college, just so that we also have that perspective?

Dr. Alice Aiken: We have wonderful partnerships with our other Nova Scotia universities and the Nova Scotia Community College. We currently have 52 projects with 70 funders. We have partnerships with all of the universities and with the Nova Scotia Community College right now. Some of those are multiple on the same file.

We do take that very seriously. We understand that we're a research-intensive university in a province with an outstanding post-secondary sector.

Ms. Diab mentioned the ecosystem here. About five years ago, New York University's business school did a study on the rise of the mid-sized city for the start-up economy. It did a global reach to look at the top 50 start-up cities globally. They said the cities had to have a research-intensive university and excellent post-secondary education for the workforce. There were only two Canadian cities that ended up on that list, and Halifax was one of them.

Our ecosystem working together has been what has made us strong. At Dalhousie, we recognize that. We love working with our partners across Nova Scotia and across Canada.

Ms. Lena Metlege Diab: I cannot agree more.

Given that it's budget week this week, I cannot but ask this question.

I know you made a comment in your opening remarks about what we've seen in the budget: increases in the value of graduate scholarships and post-doctoral fellowships, which we've been studying in this committee since I came to Parliament, or for the last two years, anyway; major investments in strategic research infrastructure; and the creation of a new capstone research funding organization to help advance internationally collaborative, multidisciplinary and mission-driven research.

Can you tell us how these investments will impact the research ecosystem at Dalhousie and in Atlantic Canada?

● (1125)

Dr. Alice Aiken: As my colleague Dr. McMartin said, we're also supportive of the Bouchard report and think the announcements in the budget on Tuesday were absolutely outstanding.

The community across Canada and Nova Scotia is extraordinarily grateful for this funding for mission-driven research, the capstone committee and the new Canadian science committee that will oversee the Canadian science strategy. I think the funding for the granting agencies is absolutely essential, as well. A rising tide floats all boats. I think all universities will benefit from this announcement. Of course, graduate students will, as well. That vaults us into any league, internationally, for attracting graduate students.

Ms. Lena Metlege Diab: Thank you very much, Dr. Aiken. I know it made my heart...and my eyes tear up when I saw that in the budget.

The Chair: Thank you. It was great to see the work of all the members of SRSR reflected in the budget.

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

[*Translation*]

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

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

My first questions are for Ms. McMartin.

Ms. McMartin, you mentioned that your university has expertise, including in health programs, but that the inability to access funding particularly hinders the improvement of various programs, as well as your university's research activities.

We know the striking data on funding, according to which 90% of the funding that goes to the Canadian Institute for Health Research is distributed to the 15 largest universities in Canada. So we can agree that only crumbs are left for the other universities.

I would like to hear your opinion on that data.

I would also like you to tell me about your ability to develop being compromised owing to a lack of access to equitable funding, which you mentioned in your presentation.

[*English*]

Dr. Dena McMartin: I always say that I can put my researchers up against anyone in this country. We do exceptional work here. The phrase is overused, but we punch above our weight.

We have incredible facilities, expertise and people. In particular, our long-standing tradition of being one of the two best universities in the country for neuroscience research is striking. We do more work with dementia, Alzheimer's and intergenerational memory loss issues, genetic and trauma-based. It's very important here. Some of that is hard to get out into the user communities and end-user groups, in part because we don't always have access to the same venues and services that our larger counterparts do. Regardless, we continue to succeed. I think that's a real testament to the resilience and power of knowledge and the way the Canadian funding infrastructure system has worked, for the most part.

What I would say is this: The merit review process in our tri-agencies is very strong. It is exceptional. However, the one area I struggle with in that particular review process is review committee members being asked to make judgments on whether there is sufficient institutional capacity for success. When I sign that grant, I'm telling you there's institutional capacity for success. I think it's inappropriate for people who have never been to my university or don't know my university to be asked to make that kind of judgment. If I'm saying we're going to do it, we're going to do it. That kind of capacity question sometimes gets asked in an inappropriate way. We're asking review members to make judgments they can't possibly know the answer to, in some cases.

This has, I think, led to some funding inequities because there's a perception that we can't do the work we say we're going to do.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Ms. McMartin, I want to come back to the issue of access to funding. In particular, I commend the important work you are doing at your university and the expertise that stems from it. One of the things you talked about was the neuroscience programs.

I want to come back to what you said about the Canada first research excellence fund. As we know, that fund concentrates programs, and months, if not years, of preparation are required before the required documents can be submitted to the government. You did mention your university's lack of capacity, not a lack of will, when it comes to resources.

From what I understand, it's almost as if these programs were focused on a certain group of universities, namely those that are large and better able to respond to this type of program based on their history in terms of research and related funding.

● (1130)

[*English*]

Dr. Dena McMartin: That is true. Thank you for raising that again.

The tri-agencies and the coordinating committee, in shifting the way that the CFREF is distributed, opened the door to smaller institutions in the last round of applications. The challenge now is I can see the door, but I can't quite open it.

As you've said, we don't necessarily have the administrative overheads, the staff or the ability to pull faculty out of their teaching workloads for a year, which is what it takes to pull these together. These are massive grants; Dr. Aiken in particular will know this. These take multiple international relationships, partnership building and really strategic thinking. I think all of the universities in Canada have that ability and that expertise, we just don't all have the capacity on our staff side to pull it together and make sense.

The challenge then, of course, is that when a lead institution receives those funds, they also receive significant overhead funding that provides that boost in project management and administrative supports that can lead to the next big grant. Our challenge has been that if we can't get on that hamster wheel it's impossible to become part of that cycle. Once you're in that cycle, it's easier. It's not easy, but it's easier to stay on that funding cycle. It's really hard to break in.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Ms. McMartin, my question will be brief.

This government stands for values of equity, diversity and inclusion. Would you say that these values currently exist in the structure of research funding in Canada at the organizational level?

[*English*]

Dr. Dena McMartin: At the organizational level, I think we're still struggling to meet those goals, but yes, I do believe we are all committed and making great strides toward better inclusion, diversity and belonging.

The Chair: Great. Thank you for fitting that in.

We'll now go to Mr. Cannings for six minutes, please.

Mr. Richard Cannings (South Okanagan—West Kootenay, NDP): Thank you.

Thank you to the witnesses for being here.

I'd just like to follow up on the question from Mr. Blanchette-Joncas about CFREF.

Dr. Aiken, you mentioned projects in Dalhousie funded through this mechanism, and we've heard some of the concerns from the University of Lethbridge around this. You also mentioned capacity issues around applications for large grants and some that you couldn't possibly do. I'm just wondering if you could comment further, from your perspective, on what would make this better. If you had a group of universities that received such a grant, would it be better to spread out those administrative costs and benefits from that grant to all of the universities instead of just the lead one?

Dr. Alice Aiken: Indeed, that's what we've done.

The reason we were successful in the CFREF application is that we didn't lead it alone. It truly was a partnership with Dalhousie, Université du Québec à Rimouski, Université Laval and Memorial University. It was a genuine partnership.

The administrative costs are split among the universities as proportional to the grant. As the lead university, we really just see it as a partnership. We happened to have had the infrastructure here to be the lead university, but it could have been any one of the four of us because we worked together as a team to build the grant.

Mr. Richard Cannings: In the budget yesterday, a new advisory council on science and industry was announced.

I'm just wondering if both, you, Dr. Aiken, and Dr. McMartin, could comment on what you think such a council should be looking to do and how that council should be formulated. Who should be sitting on that council?

Dr. Alice Aiken: In my reading of the budget, it was envisioned that academia, industry and not-for-profits would be there. This reminds me of the old STIC committee that used to be in existence to set strategic priorities.

The STIC, by my recollection, didn't have a capacity to communicate its findings to government, or, indeed, to the public. I think what would be really important, if you're going to have that make-up of people really looking across all sectors to determine Canadian research priorities, is that they're able to communicate back to those sectors and to make recommendations to government that are based on good data and thoughtful process.

I think the STIC had some advantages, but it wasn't really able to communicate. I would think that would be a big thing for that.

● (1135)

Dr. Dena McMartin: Just to add to that, I think that being able to have the sector representation, perhaps not single industry but sector-wide, would be helpful. By the same token, around the not-for-profits, it's really important not only that there's regional representation but also a diversity of voices at the table from a variety of sectors—some of which are often not invited to those tables—able to communicate there and then have a voice back into community.

Mr. Richard Cannings: Dr. McMartin, maybe I'll give you more time to flesh out this issue of the lack of capacity. You mentioned being able to access more funds to have that capacity to hire people, to spend the time and to apply for these big grants.

Dr. Dena McMartin: Sure, and if you don't mind, I'll use an example around health care and graduate funding. Again, very much like Dr. Aiken mentioned, we're very pleased with the announcement around increased graduate funding in the federal budget.

One area we've been looking at, along with many other regional institutions and with the U15, is building out our rural physician development programming so that we're training people where they will work and live, really living that “live where you learn” model. Those relationships and partnerships are essential. They're very important. The research is taking place in the region, where we can see opportunities to create new ways of looking at, let's say, aging in place in smaller centres, and where we can see the direct impacts of working with indigenous health challenges, the social determinants of health and issues around mental health and addictions, which you sometimes see being done at the larger institutions. However, being at the community face really makes a difference around being able to do that evidence-based research with community. I think we can do it a little bit faster, sometimes, because we do have very strong community relationships and trusted partnerships.

The Chair: Thank you very much.

We go now to Mr. Tochor for five minutes, please.

Mr. Corey Tochor (Saskatoon—University, CPC): Thank you so much to the chair and to our witnesses for being here today.

I have a series of questions for both universities. Regarding the research your respective universities carry out, do you track how much of it has been commercialized?

Dr. Dena McMartin: Yes, we do.

Dr. Alice Aiken: Yes, we do.

Mr. Corey Tochor: How has that been tracking, as in, has it been trending up, or is it flat or down?

Dr. Alice Aiken: Ours has been trending up, for sure, in terms of the number of patents and start-ups that we've grown and supported...IP.

Dr. Dena McMartin: Similarly, here we're seeing a significant growth in commercialization start-ups, subsidiaries and, in particular, a lot of graduate student enterprise being grown out of the university. We provide an incubator space for them on campus—with the support of external agencies and partners—give them a couple of years of support and then slowly move them into a more market-appropriate cost structure.

Dr. Alice Aiken: Yes, we do the same.

● (1140)

Mr. Corey Tochor: On the commercialization aspect of it, I'm assuming this is another revenue source. In general, have you been moving away and diversifying yourself away from government for some of the funding that's taking place on your campuses?

Dr. Alice Aiken: Currently, on the first stage of “lab to market”, we're one of the partnered national leads, with Toronto Metropolitan and Concordia, though we have lots of good partners across the country—33 to be exact. We have found that some other sources of funding have helped our graduate students to commercialize, but we've also found that the business community is very generous with its time in helping our graduate students learn about business development and growth of a business. We also are one of the hubs of the Creative Destruction Lab, so we move right through all areas of commercialization.

However, I will also note that we have a wholly inventor-owned IP policy. We don't retain any of the IP our people generate.

Dr. Dena McMartin: The University of Lethbridge is the same; we don't retain the IP.

Our goal is to ensure that we've actually reduced the barriers to get information, technologies, new ideas and innovations out into the entrepreneurial landscape, rather than attempting to keep them inside the ivory tower. That means we're not replacing different revenue streams. In fact, we're encouraging revenue generation in our community rather than within our institution.

Dr. Alice Aiken: Exactly.

Mr. Corey Tochor: Speaking about the communities and life on campus, can you discuss the impact of the out-of-control cost-of-living crisis that is happening on your students and the research in your respective universities?

Dr. Dena McMartin: I can go first. Alice has been good about going first on several other occasions.

Given the affordability crisis, I would say there's actually an opportunity to really support the regional and smaller institutions. We don't have the same housing availability issues or affordability challenges you might find in some of the larger centres—at least not yet.

It is expensive to live. Inflation is high. It's been trending down for the last little while, which has been extraordinarily helpful.

In any of those questions there is a confluence of issues. There's not one single challenge that goes into affordability. It's access to adequate federal, provincial and municipal funding. It's ensuring that students do have access to the bursaries, the scholarships and the food security they need.

I think food security on campuses right now is a particularly challenging issue for all of us to keep top of mind.

Mr. Corey Tochor: We'll switch out to Dalhousie in a second, but just on food insecurity, have you heard of students having to use the food bank?

Dr. Dena McMartin: We have, very much so. In fact, we have expanded our food bank on campus, as well as having fresh food days and nutrition days.

There's a significant amount of effort happening on our campus.

Mr. Corey Tochor: I'm sorry, I just missed that. This is one of the first that I've heard.

Do you have an actual food bank on campus?

Dr. Dena McMartin: We do, yes.

I think most universities do these days.

Mr. Corey Tochor: That's unfortunate, in a country as wealthy as a G7 country, that we have students not just accessing food banks, but the system is seemingly set up so there's free food on campus.

The Chair: Thank you.

I know the University of Guelph—the food university—also has a food bank on campus and participates in the local food banks.

Now we're going to Mr. Turnbull for five minutes, please.

Mr. Ryan Turnbull (Whitby, Lib.): I remember going to Carleton University here in Ottawa about 25 years ago. We had a food bank on campus that I had to regularly use as well. It is not uncommon for students who are struggling to go to university.

It's great to have the witnesses here. Thank you for that. I really appreciate your testimony and the expertise you're providing for this study.

Given the fact that Dalhousie is one of the members of the U15, I want to ask a couple of targeted questions around how the U15 schools may operate as anchor institutions that may actually help increase the capacity to do research among other universities.

I just want to see if Dalhousie plays that role in helping, partnering and collaborating with other institutions to perhaps supplement their capacity to do research in key areas.

Ms. Aiken.

● (1145)

Dr. Alice Aiken: Thank you.

We absolutely do that. I gave you a couple of examples where our partnerships are wide-reaching across all spectrums of universities, including in our own province, with numerous smaller universities and a wonderful, robust community college system.

We believe that partnerships strengthen us. We encourage partnership and working together to grow research capacity, commercialization capacity and the overall ecosystem. I think most universities do the same thing.

I did just want to note one thing about the funding for universities.

With medical schools, though, the hospital amounts are also included in our CIHR grants. When you think of the University of Toronto, with 10 hospitals, they of course seem to take a lot of the money, but a lot of that goes directly to the hospitals.

However, we partner well with the hospitals as well. If physicians want to do research, they need to be appointed at a medical school.

Mr. Ryan Turnbull: Thank you for that. I appreciate that.

I understand the importance of having those research institutions support a lot of our health professionals with getting placements in hospital settings. UHN in downtown Toronto is particularly known for that with the four hospitals. Anyway, I won't get into that.

I want to pivot to a question about applied research. We have had some of the colleges and polytechnics here. In fact, one of the local institutions in my riding, Ontario Tech, has been here. It is a university, but it operates particularly in STEM areas where a lot of the research is applied.

There were some witnesses who suggested that the tri-council should be allocating a larger portion of research dollars to applied research, rather than to academic research, and that colleges should be made eligible for those funds as well.

I wonder how both witnesses today, Ms. Aiken and Ms. McMartin, feel about that.

Dr. Dena McMartin: As Dr. Aiken has said, the partnerships and collaborations are key here. As I mentioned, we have Lethbridge College in Lethbridge. It is a close partner with us both on academic and research programs. We work very hard to not compete but, rather, complement each other, so we have complementary facilities and complementary expertise.

They do different work from us, so there is a different funding stream and a different approach to the way that research is funded. Our applied research doesn't have special funding available to support it, and their fundamental research doesn't have special funding to support it, so I think there's been a bit of a division of labour there through the funding councils that, so far, has been relatively successful.

Dr. Alice Aiken: I would agree with Dr. McMartin, and I would note that all types of research are important, from basic to applied to community-driven. As research institutions, we all need to be thinking of all of those types of research.

One of our biggest successes is in applied research in our partnership—it's the only university partnership in the world—with Tesla and the lithium-ion battery work we do. That is all applied research. It's very important to us.

Mr. Ryan Turnbull: I really think the applied research seems to have a lot of direct impacts on the economy, which is fantastic. That's not to say that academic research isn't also very important.

Thank you.

The Chair: We'll go to Mr. Blanchette-Joncas for five minutes, please.

[*Translation*]

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

I'll continue with Ms. McMartin.

Ms. McMartin, what concrete recommendations do you have to ensure equity, but also access to research funding for small and medium-sized universities?

[*English*]

Dr. Dena McMartin: I have a couple of recommendations.

We've talked about enhancing the merit review, so it's really ensuring that when institutions declare their capacity and expertise to do something, the merit review committees accept that.

Also, there should be opportunities for faculty members and for researchers who are coming into the research game a bit later so that there isn't a detriment to joining that stream mid-career or as an established faculty member on our campuses.

I think we also want to ensure that this new funding for graduate students is distributed appropriately and fairly so that research trainees have access to funding at all of the institutions. That way, they can choose where they want to study, rather than have to go to one of the larger universities because that's the only place they can get funding.

I think it would be important for us to look at—again, as part of the affordability crisis—how we can ensure that students can choose to live in smaller, more affordable centres and still get the same quality of expertise and research experience that they're seeking.

● (1150)

The Chair: I will just interrupt. I said you had five minutes when I should have said two and a half. You have about a minute left in your round.

Thank you.

Dr. Dena McMartin: As I said earlier, it's development funding that's targeted to help level the playing field for the smaller institutions.

We've been very pleased with the support, which Dr. Aiken mentioned, around the hub model for research in cybersecurity and research data management. That has been very successful, because we do not receive enough funding to do that on our own.

Either we need more funding to do it on our own, or there will have to be strings attached to the funding that goes to the larger institutions to ensure that they provide those supports to us.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Thank you, Ms. McMartin.

I have a few seconds left.

I want to point out that a high concentration of funding comes from research excellence funds, but that money is allocated, once again, to large universities, especially to U15 member universities, which claim to be good players because they share a small portion of the crumbs of the pie with small and medium-sized universities.

I would like your opinion on that.

[*English*]

The Chair: Be very brief, please.

Dr. Dena McMartin: I think there's an opportunity to continue to improve that program so that smaller institutions have equal access.

The Chair: Thank you very much.

Mr. Cannings, you have the last two and a half minutes, please.

Mr. Richard Cannings: Thank you.

I'm going to turn to Dr. Aiken again with this discussion around affordability. One of the big aspects of affordability for students has come about because of governments of all stripes, provincial and federal. Support for universities in general has been declining over the last 30 years, so tuition fees have gone up. Students these days pay ten times what I paid as a student back in the Late Pleistocene. Housing costs have also gone up. I think this is clearly what's driving some students to food banks.

With the smaller universities and colleges that we have been talking about in this study, is this somehow a silver lining in that in smaller centres, students don't have as much of those costs, so you can attract some pretty good talent through the students who are coming to you because of those reduced costs?

Dr. Alice Aiken: I'm sorry; was it for me or Dr. McMartin?

Mr. Richard Cannings: It was for you, but, if we have time, Dr. McMartin can answer as well.

Dr. Alice Aiken: I think so. In Halifax we have seen an incredible increase in housing costs. We also have a food bank at Dalhousie, but, as Ms. Diab mentioned earlier, not all small universities are in.... Halifax isn't a big city, but there are other smaller universities here that are hit with the same impacts.

I know one of your colleagues who has UOIT in his riding. That is in the Toronto corridor, which is also an expensive place to live.

I think that it's generally very expensive to live. I would very much like to applaud the announcement for increasing graduate student funding. I think that's going to make a massive difference for attracting high-quality talent to our universities.

Graduate students generally don't stay in residences that are still affordable, so, as we have residence space for undergrads and increased funding for graduate students, I think it will help universities of all sizes.

● (1155)

Mr. Richard Cannings: That's the end of my time, apparently.

The Chair: Thank you.

We aren't quite at the top of the hour.

I do have one question.

Dr. McMartin, you mentioned mental health and the work going on in Lethbridge. I noticed that your university hadn't been part of the Canadian Brain Research Strategy or Brain Canada. I wonder about the distribution of funding impacting joining networks like that in Canada that might be able to help further the work you're doing.

Dr. Dena McMartin: That's a really important question. We partner at the individual faculty member level, so we do have partnerships with the prairie hub of Brain Canada.

I will be frank. The funding that the federal government announced this week is very welcome. These are important investments in ensuring that there is support for mental health for students, staff and faculty.

This is a universal challenge across the country. This isn't just us. Students are becoming the young adults who will lead the country in the future. We want to make sure that they have the best chance to do that as stable, resilient citizens.

The Chair: Thank you, that's tremendous. I really appreciate your thoughts on that.

Thank you to Dr. Alice Aiken and to Dr. Dena McMartin for your contributions this morning and your participation in the study on the distribution of government funding among Canada's post-secondary institutions.

If there is additional information you would like to share, please direct that to the clerk, and the analysts can use that as they prepare the report for us.

We will suspend for a minute or two while we go on to our next round.

Thank you to the members for some great questions this morning.

● (1155)

_____(Pause)_____

● (1200)

The Chair: We'll get started on the second part of our meeting. Welcome back.

Pursuant to Standing Order 108(3)(i) and the motions adopted by the committee on Thursday, January 30 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, as an individual, Vincent Larivière, professor, Université de Montréal.

We also have Céline Poncelin de Raucourt from the Université du Quebec, vice-president, teaching and research, via video conference.

We will start with five minutes from Monsieur Larivière.

Go ahead, please.

[*Translation*]

Dr. Vincent Larivière (Professor, University of Montreal, As an Individual): Thank you very much for your invitation to testify on the concentration of research funding, a rather important issue.

My name is Vincent Larivière. I am a professor of information sciences at the Université de Montréal and the UNESCO Chair in Open Science.

I am not here representing the Université de Montréal. Rather, I am here as an expert who has been studying the Canadian research system and, more specifically, the organization of funding for two decades.

The first thing to mention is that concentration of research funding is seen in almost all countries. It's a bit like a natural dynamic of research systems. We see everywhere that a minority of individuals or institutions receive most of the funding. I should also mention that funding in Canada is a little less concentrated than in other countries. This is illustrated by the fact that the success rates of scientists who apply for funding from Canadian granting agencies are generally a little higher than what we see, for example, in the United States, where funding is extremely concentrated. This is particularly true in the natural sciences and engineering sectors, where we have a rather deconcentrated approach in Canada.

To summarize, there are two approaches to research funding.

The first approach focuses on excellence. Large amounts of money, large grants, are given to a few organizations and individuals.

The other approach focuses more on discovery. More people receive funding, but the amounts provided are smaller.

The first approach assumes that giving a lot of money to a few people will lead to economies of scale in the system, slightly more efficient knowledge production and, therefore, more collective benefits. An analogy can be drawn with the industrial context where producing a lot of cars will lead to lower production costs per car.

The second approach rather assumes that concentrating funding by giving a lot of money to individuals or organizations that already have a lot of money will lead to lower marginal productivity. We end up with what economists call diminishing returns.

This is an important public policy issue. A lot of work has been done to determine whether one of the two approaches actually provides more collective benefits and whether research should, therefore, be concentrated or deconcentrated.

However, across Canada, the data shows that the concentration of research funds does not create economies of scale, but that it leads to diminishing returns, which means that every scientific article published costs more. That's what we see in Canada and that's what we see in the syntheses that have been done globally. So we know quite a bit about the effects of the concentration of research funding in Canada and in the rest of the world.

I must say that I am pleased to note the changes to student funding in the last budget. The government came to its senses with one-time amounts, not “supergrants” that concentrate funding.

That brings me to the concentration of funding for institutions, about which we know much less. We know that funding for institutions is concentrated. We know that five institutions collectively receive more than 45% of the total funding provided by the three federal councils. We also know that institutions that are members of the U15 Group of Canadian Research Universities collectively receive about 80% of the funding in Canada. That has been stable for about 20 years. However, we don't really know whether there are diminishing returns. So over the past few weeks, my team and I have been looking for new data on the effects of the concentration of funding for institutions.

Therefore, I did an original analysis that looks at all of the funding provided to Canadian universities by the three federal councils—the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council, and the Social Sciences and Humanities Research Council—and also looks at all of the scientific production, meaning the scientific papers published by the researchers at those universities. I wanted to see if there were indeed economies of scale, or if there were diminishing returns.

However, we can see that, just like the concentration of funding for individual researchers, the concentration of funding for institutions leads to diminishing returns. We see it in two out of three areas—in natural sciences, with the Natural Sciences and Engineering Research Council of Canada, and in medicine, with the Canadian Institutes of Health Research. In universities that receive a lot of funding, the cost of research is much higher than in universities that receive less funding. So there is no economy of scale in concentrating university funding. Instead, we are seeing diminishing returns.

● (1205)

The argument could obviously be made that the work is of higher quality in the major funded universities. However, when you take into account the quality of the work, as well, you also see the same kind of diminishing returns. In other words, higher quality would not explain the higher cost of research.

I will quickly conclude by saying that, in terms of public policy, the goal is not to suggest taking money from well-funded universities and giving it to less funded universities, as that would generate the same kind of diminishing returns. That's an inherent feature of the system. Rather, it is a matter of better understanding the level of interinstitutional inequality that makes it possible to generate the most collective benefits. If we know that there will be inequality, it's about knowing what level, acceptable for university institutions and for the system, would make it possible to collectively produce more knowledge.

[*English*]

The Chair: Thank you.

I'm sorry, but we are over the time. I did want to catch the last part of your thoughts there. I think if your report is available to us in the next 30 days, maybe we could include that in our deliberations of the report that we'll be looking at through our analysts.

Dr. Vincent Larivière: It will be.

The Chair: Thank you very much. If you could send that to the clerk, that would be very helpful.

Now we will go to Université du Québec and Céline Poncelin de Raucourt for five minutes.

Go ahead, please.

[*Translation*]

Mrs. Céline Poncelin de Raucourt (Vice-President, Teaching and Research, Université du Québec): Thank you very much, Mr. Chair.

Honourable members, thank you for inviting us to participate in this very important work.

The institutions of the Université du Québec are booming, and the research community is calling for a number of niches of excellence in strategic areas for Canada. If we look only at the environmental issue, our research teams have developed niches of internationally recognized expertise—for example, on the role of the oceans in climate change, on clean technologies, on green energy or on the sustainable development of natural resources. More specifically, we are working to reduce flood risks, increase wildfire resilience, accelerate circular economy strategies or prevent and manage health issues related to pollution or environmental degradation. These successes were not achieved entirely thanks to the funding system, but despite allocation arrangements that are often unfavourable to our researchers.

As Mr. Larivière just mentioned, the phenomenon of concentrating research funding is well known. Institutionally, funding is focused on U15 member institutions, the vast majority of which have a faculty of medicine and are located in large urban centres. Those institutions receive nearly 80% of the funding, even though they have 59% of the graduate student population and barely half of the faculty. At the individual level, as well, about 80% of research funding goes to 20% of the most funded researchers. This means that 80% of the university community barely share 20% of the financial pie.

This is not by accident, but because of systemic biases that favour larger institutions with a faculty of medicine. The logic of this system is simple: Past grants attract future grants. From scholarships to major grant programs to Canada research chairs, the entire system is designed to reward institutions and researchers less for the potential of their research program for society than for the funding they have already received.

We have to break that vicious cycle. The main reason is that it is a poor strategy to allocate public funds to a limited number of institutions or researchers. Research, as was just mentioned, has shown that the concentration of funding produces diminishing returns when measured by the number of articles or the number of citations. After a certain threshold, investments no longer have the desired production effect.

The real key to the research community's productivity is not the amount that each individual receives, but rather the number of individuals at work. Funding more researchers will increase the system's productivity. In other words, putting all our eggs in one basket reduces the chances of innovation in Canadian research, especially since low rates associated with a high concentration of funds encourage a certain amount of conservatism in the university community.

Concentration of funds is not only an ill-advised strategy to support discovery, but it is also a public policy that is problematic in terms of economic development, as small and medium-sized institutions are woven into the economic and social fabric of their communities. They train a highly skilled workforce, and their research focuses on their region's environment, populations and social challenges. Those institutions are currently disadvantaged by the federal funding system.

A similar observation can be made about the country's francophone communities. Since 2004, the share of total research funding granted by the federal government to francophone institutions has been declining. Francophone researchers now receive a percentage of the funding that is smaller than their demographic weight. For Canada to maintain the vitality of all of its communities, it is imperative that more funding be provided to those institutions.

Of course, we have embraced the recommendations of the Bouchard report to substantially increase research funding in Canada, and we applaud this week's budget announcements to increase the number and value of scholarships. This decision responds to representations that have been made for many years by all university stakeholders and by your own committee. Ultimately, that increase will ensure a better future for the next generation of Canadian researchers.

However, injecting more money into the system will not make it more functional if the rules governing it are not also changed. In order to break the vicious cycle in which the Canadian research community finds itself, funding must be distributed more equitably. To that end, we have made a number of recommendations in our brief.

● (1210)

For example, we recommend that: the tri-council budget increase take into account the proportion of researchers and graduate students in the disciplines they cover; budget increases enable researchers to increase the value of the grants they give to students through their own research grants; and the government introduce a minimum threshold of chairs per institution.

[*English*]

The Chair: Thank you very much. For any other recommendations we don't get to, you can support us by sending them in writing. That would be great.

Now we'll go to our questions, starting off with Michelle Rempel Garner for six minutes.

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

I'd like to direct my questions to the Université du Québec. I apologize; I'll be asking my questions in English.

I'd like to talk about a sensitive issue. Removing barriers to equality of opportunity to allow diverse individuals to access federal research funds is a laudable goal. However, the Government of Canada has faced some controversy in Quebec on this front by applying certain eligibility criteria to the allocation of federal research funds within the province.

In late 2022, a history professor at a Quebec research institution filed a human rights complaint against Université Laval and the Canada research chair program alleging discrimination. His argument was that he was qualified for the position of a Canada research chair in history, but his application was not accepted because he's a white male. In response, in December 2022, Quebec's National Assembly passed a motion that expressed a commitment to merit-based hiring on its university campuses and rejected the imposition of racial or gender quotas by the federal government. All of this is related to the Government of Canada's Canada research chair program requirements that universities meet diversity targets in hiring.

I'll ask you if your university believes the federal government should be able to apply these types of requirements to Quebec-based institutions.

[*Translation*]

Mrs. Céline Poncelin de Raucourt: Thank you very much, Ms. Rempel Garner.

Your preamble was good. This is an extremely sensitive issue in the academic community, and it's tearing a lot of people apart.

The answer I want to give you is that all academic institutions, together with the granting agencies or councils, are very concerned about ensuring accessibility, equity, diversity, inclusion in the system for an entire profile of researchers and students.

For example, the Université du Québec was built historically to promote the accessibility of groups that were under-represented in university education or in research environments. For example, these are first-generation students, people who are a little older and have families. So we are used to welcoming a wide variety of students, but also of researchers.

Academic institutions' attempts or concerns are to promote a system that is as fair and diverse as possible. It would be wrong to claim in this debate that ensuring that diversity goes against excellence and merit.

● (1215)

[*English*]

Hon. Michelle Rempel Garner: Thank you.

Should the committee recommend that the federal government continue to include a specific exclusion of certain genders, ethnicities or sexual orientations as an eligibility requirement for the allocation of federal funds?

[*Translation*]

Mrs. Céline Poncelin de Raucourt: Yes, it is not a matter of excluding anyone at the outset, but of ensuring that the processes make it possible for the various realities to be taken into account so that people actually have a fair chance of accessing funds and upholding the merit that characterizes them.

[*English*]

Hon. Michelle Rempel Garner: If I'm summarizing what you're saying correctly, the committee shouldn't be recommending that anybody be excluded from federal funds. We should be looking at effective ways to remove the barriers to equality of opportunity that some communities might face, rather than take an exclusionary approach in terms of eligibility criteria for the allocation of federal research funds.

Would that be a correct characterization?

[*Translation*]

Mrs. Céline Poncelin de Raucourt: I do think that, today, the rules never require anyone to be excluded.

There are situations where you have to go further in certain criteria to make sure you make room. When you have a system that is very focused on certain profiles and you want to make room for new profiles, a balance inevitably has to be reworked. That sometimes leads to certain measures, but the rules are not based on exclusion from the outset.

[*English*]

Hon. Michelle Rempel Garner: Do you believe that the Province of Quebec should be able to set priorities for the allocation of federal research funding for research institutions like yours or should it simply be the federal government?

[*Translation*]

Mrs. Céline Poncelin de Raucourt: Quebec is also fortunate to be able to count on a research ecosystem called the Fonds de recherche du Québec. The coexistence of the two systems has always been very positive for the entire research community in Quebec, but also in Canada. There is a good complementarity between the two systems.

For the time being, I have no concerns about the current operation.

[*English*]

Hon. Michelle Rempel Garner: The setting of provincial strategic research priorities in alignment with federal research priorities has been successful for your institution as a Quebec-based research institution.

The Chair: Answer very briefly, please.

[*Translation*]

Mrs. Céline Poncelin de Raucourt: Indeed, many of our researchers and research communities have niches of expertise that respond to Canada's challenges, knowing that, for many, these challenges are also those of the Quebec population.

[*English*]

The Chair: Thank you very much.

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

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

Thank you so much to both of our witnesses.

I'll start with Mr. Larivière.

You indicated that the concentration of funding leads to diminished results, based on the research that you've done worldwide. You indicated that the cost of research is higher in the larger universities and the quality of research is not any better.

Can you give us your thoughts as to why this might be?

[*Translation*]

Dr. Vincent Larivière: Thank you for your question.

I'll reframe the findings to be more specific. What we are seeing at the organizational level is that the better funded a university is overall, the higher the cost of the published papers. In the literature, one of the hypotheses to explain the diminishing returns is that we need more researchers to make more discoveries. My colleague Ms. Poncelin de Raucourt spoke about this earlier.

As a professor, I have a limited number of hours in my week. There are only 24 hours in a day for everyone. If I'm given more money, I can't necessarily work more. In that case, the money should be given to someone else. If we want to make even more discoveries, giving researchers minimal amounts of funding is not what we should do. We need to spread funding across more researchers, but adequate funding, of course. That way, we can produce more research.

For example, a $100,000 grant given to a large university is a drop in the bucket. However, giving the same amount to a smaller university can really make a difference.

● (1220)

[*English*]

Ms. Valerie Bradford: Thank you.

Ms. Poncelin de Raucourt, you indicated that many of the U15 universities tend to be located in large urban centres and have medical schools. They tend to get a lot of research dollars just because of that focus.

We heard from an earlier witness on the previous panel—she was from a smaller university, like the University of Lethbridge—that it's like a hamster wheel. You're trying to break in as a smaller university to get into the larger grouping with the bigger pool of resources.

I'm wondering if you could elaborate on your thoughts as to how universities can attempt that. It is difficult to do the grant writing, etc.

I know that in the budget that we produced the other day, the number of graduate scholarships has been increased. You indicated that this was one thing that could help address this.

Can you give us some other suggestions?

[*Translation*]

Mrs. Céline Poncelin de Raucourt: Thank you.

Going back to the recent increase in the number and value of scholarships—which we are absolutely delighted about—we will need to pay careful attention to the way these new funds are distributed. If they are used only to further concentrate funding, it will not improve the system.

A year or two ago, we held discussions with the granting agencies, and it was pointed out that the majority of graduate students fund their studies through scholarships paid by researchers from the grants they receive. Again, for scholarship programs, we will need to ensure that these new scholarships are distributed equitably, not based on quotas that stem from success rates for research grants, as is currently the case. The institutions where the most research funds are concentrated have the largest quotas for recruiting graduate students, so they are always concentrated in the same institutions.

We need to change that way of thinking. Our colleagues at the Canadian Association for Graduate Studies were recommending that funding be proportional to the number of graduate students. Moreover, we need to better support the vast majority of students who are supported by their supervisors through their research grants. That means also increasing the budgets of the three agencies so that they can increase the grants given through their core programs. That's my answer to your question on scholarships.

You also asked me how the smaller institutions could carve out a bigger place for themselves. The matter of the resources institutions have to respond to calls and participate in partnerships is critical. Small and medium-sized institutions have small teams that have to manage an incredible number of programs, know the rules and scramble to help the teams of researchers carry out very ambitious projects, often within very tight deadlines. We have to make sure that all institutions have equivalent means.

[*English*]

Ms. Valerie Bradford: I'm sorry. My time is almost up.

Can you give us an idea of how master's and doctoral students fund their studies at institutions that receive less research funding?

The Chair: Very briefly, please.

[*Translation*]

Mrs. Céline Poncelin de Raucourt: When they are not funded through grants, they are forced to find jobs on or off campus. We know that when students work a certain number of hours outside their studies, it has a negative impact on their ability to stay in school and graduate.

● (1225)

[*English*]

The Chair: Thank you very much.

We have Mr. Blanchette-Joncas for six minutes. Thank you for getting these witnesses to us today.

[*Translation*]

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

I'd like to welcome the witnesses who are joining us for the second hour of our meeting on this very important study. My first questions are for Ms. Poncelin de Raucourt.

In your presentation, you very eloquently explained that the funding granted to francophone institutions was less than their demographic weight. I'd like you to tell us more about the effects of the concentration of federal funding and its impact on francophone communities.

Mrs. Céline Poncelin de Raucourt: Actually, the Université du Québec has long been concerned about the decline of French in Canada, particularly in science, where the decline is especially pronounced. You have likely seen a lot of data published about the fact that, since the 1960s, barely 8% of scholarly journals created in Canada have been in French.

In the natural sciences, engineering and health fields, there are virtually no options for publishing research findings in French. As a result 90% of publications in those fields are in English, not to mention that only 5% to 12% of applications submitted to the granting agencies are written in French. Historically, the success rate for funding applications submitted in French is lower than for applications submitted in English. I could go on at length about the inequalities.

To answer your question, even among the U15 group there are only two francophone institutions, and neither of them is part of the Université du Québec or the Alliance of Canadian Comprehensive Research Universities. Meanwhile, the Université du Québec is the largest francophone university network in Canada and shares the rest of the pie, as we said earlier, with the other institutions.

To summarize, as noted in the brief from the Association francophone pour le savoir, Canadian research conducted in French is crucial for the vitality and development of francophone minority communities. For francophone communities to thrive, they need to develop knowledge about themselves, and the most appropriate language in which to do so is French. They also have to train a highly qualified workforce in their own language. Through research, institutions connect with their communities to better serve them. When research funding is concentrated, all of that is at risk.

Mr. Maxime Blanchette-Joncas: Thank you for that.

I will continue with you, Ms. Poncelin de Raucourt.

We often hear from the U15 universities that Canada's system for evaluating funding applications is based strictly on the merit of researchers, and that it is cited around the world.

I'd like to hear your thoughts on that.

Mrs. Céline Poncelin de Raucourt: In no way are we questioning the integrity of the people involved in the evaluation process. We are confident that the administrative staff and evaluators all act ethically, in compliance with the code of ethics and values of the granting agencies.

What we are questioning is the public policy choices that have led to a funding system that tends toward a concentration of funds. Among these choices are granting programs designed to heavily fund a smaller number of projects. They assign points to researchers and institutions based on the amount of funding they have received in the past or even on the outlay of institutions, which is more closely related to their wealth than to the excellence of the project or program.

When merit is based more on the funding amount already received than on the impact of previous research on the community, we lose sight of the purpose of science, which is to improve the living conditions of human communities. We need to rethink this automatic association of excellence with concentration of funding.

The value of a researcher is not measured by the funding amount they have been granted. Instead, we should take into account the impact of their findings on the scientific community.

Mr. Maxime Blanchette-Joncas: Thank you.

My next question is for Mr. Larivière.

Mr. Larivière, what you said today is quite important. The U15 group's argument is that its members are research-intensive institutions that have access to infrastructure and expertise, as well as talent.

However, you say that in terms of efficiency, public funds invested in these institutions do not necessarily translate into higher productivity or more contributions to scientific publications, because of the impact of the research that is done.

Can you please tell us more about that?

● (1230)

Dr. Vincent Larivière: That is indeed is true.

Basically, the data shows—and I'm not the one saying this, it's the data—that it ultimately costs more to produce papers at universities that receive more funding.

That said, there may be reasons for this, and the issue deserves to be studied scientifically. The results are intriguing and we need to study them more in order to understand them better.

As I mentioned earlier, we need to dig deeper into this. On the one hand, we have to try to understand the factors that explain those results. On the other hand, we need to ensure an optimal uneven distribution of funding across the country so as to maximize collective benefits.

In addition, as Ms. Poncelin de Raucourt said, we have to make sure we understand the various facets of Canadian society, and that means diversifying the places where we conduct research.

[*English*]

The Chair: Thank you very much.

Now we'll go to Mr. Cannings for six minutes.

Mr. Richard Cannings: Thank you.

I'd like to continue on with Dr. Larivière to talk about the issue of diminishing returns. If we want to expand the number of grants provided to Canadian researchers, especially to smaller institutions, there comes a point at which we get diminishing returns, because if the grant is so small that the researcher can't really do their research, it's basically a waste of money, I would say.

I know your results seem preliminary, but do you have any idea of what a rough minimum for a grant would be? I know it might differ among research fields, but where do you think that lower limit might be?

[*Translation*]

Dr. Vincent Larivière: Thank you very much for your question.

Yes, that's an interesting subject. I would remind you that, in Canada, we have the Natural Sciences and Engineering Research Council of Canada, or NSERC, whose funding model is different from that of other funding agencies in Canada and elsewhere in the world.

Essentially, NSERC funds a much higher proportion of researchers than other funding agencies. Obviously, the amounts allocated are lower, but they still allow a professor to have, for example, a small team made up of a postdoctoral fellow and a doctoral candidate. You could say that NSERC provides a financial base for scientists.

If we want to provide a minimum amount of funding, the way NSERC operates gives us a model. So there are examples out there that work well.

[*English*]

Mr. Richard Cannings: Do you think the NSERC model would work better if it was copied in SSHRC, for instance?

[*Translation*]

Dr. Vincent Larivière: I believe that we need to explore this.

People often say that social sciences cost less, but they cost less because the decision was made to pay students a pittance. However, in reality, there is no reason why a student in the sciences should be paid more than a student in the social sciences and humanities. Earlier, we talked about how students survive when they are not funded. Many students in the social sciences and humanities are not surviving, even in the big universities. So they have to find a job outside the university, which hardly ever happens in the fields of medicine and natural sciences.

In my opinion, it would be interesting to explore the NSERC model, but it would mean increasing the budget of the Social Sciences and Humanities Research Council, the SSHRC.

[*English*]

Mr. Richard Cannings: Madame Poncelin de Raucourt, can you comment on that, as well? You talked about the need to provide more funding to more researchers. Where might that limit be? Could you expand on that?

[*Translation*]

Mrs. Céline Poncelin de Raucourt: My answer is along the same lines as Mr. Larivière's.

We often look at the model used by the Natural Sciences and Engineering Research Council, or NSERC. There is also the fact that it helps a pretty good chunk of the research community achieve a certain success rate, which encourages innovation.

Rather than looking at disincentives or incentives in terms of concentrating research, we must also consider how research communities are supported throughout their lifetimes. New researchers as well as mid-career and late-career researchers must be taken into account.

In addition to looking at the amounts provided by research grants, we will also have to look at what type of support is provided to institutions. As stated previously, researchers or research teams can do the work, and they do it even better if they are supported by teams. Then there are the laboratory technicians and professionals, who often have precarious working conditions, but who are nevertheless essential to carrying out research and maintaining infrastructure, be it in the sciences or in the humanities and social sciences. As Mr. Larivière pointed out, it is wrong to say that the humanities and social sciences have no infrastructure. Researchers in the social sciences and humanities count on an increasing number of databases and artificial intelligence.

A researcher must be supported by an ecosystem, by a team made up of research professionals and lab technicians, but also people working on the administrative side. These people support researchers by managing budgets and putting together grant applications, which allows researchers to focus on their main activity.

I would like to give an example of an important issue related to research, i.e., national security. The federal government has provided funding to support institutions in their efforts to ensure the security of their research. However, the way the money was distributed still favours concentration, because it was based on the total funding handed out by the grants councils. So the University of Toronto has received huge amounts of money, but smaller institutions have received $2,000 in funding and sometimes nothing at all to support the expertise required to ensure the security of the research being done.

This shows that resources are distributed inequitably, and this places a disproportionate burden on researchers at small institutions compared to those at bigger institutions, which are supported by a slew of professionals and experts.

● (1235)

[*English*]

The Chair: Great. Thank you very much.

We have Mr. Soroka for five minutes, please.

Mr. Gerald Soroka (Yellowhead, CPC): Thank you, Mr. Chair.

I'll start off with Ms. Poncelin de Raucourt.

In light of your focus on optimizing resource allocation, what sustainable funding models has the Université du Québec developed to reduce dependency on federal funding? Can you please provide examples of where these models have successfully supported research and teaching initiatives?

[*Translation*]

Mrs. Céline Poncelin de Raucourt: Could you repeat the question, Mr. Soroka? I didn't get the translation.

[*English*]

The Chair: I've paused the time.

Mr. Gerald Soroka: Thank you.

In light of your focus on optimizing resource allocation, what sustainable funding models has the Université du Québec developed to reduce dependency on federal funding? Can you provide examples where these models have successfully supported research and teaching initiatives?

[*Translation*]

Mrs. Céline Poncelin de Raucourt: Indeed, within the Université du Québec network, more and more research is being done in partnership with all kinds of stakeholders.

For example, more than 40% of the total amount of research funding comes from private partners or organizations. More and more, our institutions are positioning themselves in their community. So they work with their community and their research is funded by their community.

I have another example. We are pooling our efforts and expertise. Institutions are working together to develop shared tools and become more independent. However, this is not the only solution. Each institution must also have the means to be able to meet its challenges. It's about the agility of each institution.

● (1240)

[*English*]

Mr. Gerald Soroka: Given the initiatives pursued at your university, such as digital competency and mental health projects, how do you measure and report on returns on investment to funding bodies? What has the impact of the initiatives been on both student outcomes and broader academic contributions?

[*Translation*]

Mrs. Céline Poncelin de Raucourt: For the past year and a half, I believe, we have had a major initiative for all institutions in the Université du Québec network. It's called the post-secondary student mental health initiative.

By pooling our expertise, we created this initiative, which received funding from Quebec's ministries of health and social services and advanced education to promote student mental health. This initiative has brought together resources for mental health workers who support students, as well as a range of resources that are offered directly to students within our network.

The initiative was so successful that both provincial departments asked us to serve not only the Université du Québec community, but also all universities in Quebec, as well as CEGEPs and colleges. That's one example.

Unfortunately, this kind of initiative is too new for us to be able to look at its impact on mental health in the way you're asking me to.

[*English*]

Mr. Gerald Soroka: How do you ensure that the utilization of federal funding at the Université du Québec maximizes return on investment, particularly in terms of research output and educational quality? What are some of the key performance indicators that you used to evaluate the effectiveness of these funded projects?

[*Translation*]

Mrs. Céline Poncelin de Raucourt: Each institution has a whole support ecosystem for innovation, knowledge transfer and knowledge mobilization.

There's obviously the whole issue of the patents and start-ups that come out of this research. Then there are social innovations, which often get less attention but are just as important. In fact, we are starting to improve the system used to evaluate these innovations.

Earlier, I talked about research being done with partners which, as a matter of principle, does not necessarily generate patents or other things, but rather creates relationships between industries or non-profit organizations and our researchers. Research partnerships are designed to have a concrete and direct impact on partners who have expressed a need. That research is done to answer specific questions.

The number of research partnerships can also be an indicator of the impact of investments made in research in terms of improving living conditions in Canadian communities.

[*English*]

The Chair: Thank you very much.

Now it's over to Helena Jaczek for five minutes.

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

[*Translation*]

I would like to start off by thanking our witness for coming today and giving their presentations.

[*English*]

Our study is looking at the distribution of federal funding amongst Canada's post-secondary institutions. I think we've all agreed that the pie needs to be expanded, and this is why we're so pleased that our government has introduced the budget, which of course will be subject to a confidence vote, so we are not going to take anything for granted. However, the proposal obviously is to increase the pie in terms of research dollars.

I want to concentrate on practical solutions as to how this amount of funding should be distributed. One of the suggestions that I've heard from a researcher was that when the tri-council looks at applications for grants, those applications be blinded. In other words, there is no sign that an application is from a U15 institution or any other; that it isn't necessarily part of the application that the previous publications of a particular professor focused on.

What do you think about the possibility of blinding the review panel to the actual institution that is applying?

Can we go to Professor Larivière first, please?

● (1245)

[*Translation*]

Dr. Vincent Larivière: Thank you for your question.

The literature clearly shows that putting less emphasis on the identity of applicants leads to greater equality in outcomes. So the answer to your question is yes, we should be looking at that. Canada is doing very well, by the way. According to a study by Holly Witteman, a professor at Laval University, when the Canadian Institutes of Health Research decided to reduce the importance of résumés during the assessment of applications and give more weight to the actual project, there was no more gender inequality in the success rates. One could surmise that this will also reduce the weighted advantage of the more prestigious universities compared to the others.

I am therefore entirely in favour of anonymizing projects as much as possible, or, in the case of funding for professors, giving more weight to projects and less to applicants' résumés.

Hon. Helena Jaczek: Ms. Poncelin de Raucourt, what is your take on this?

Mrs. Céline Poncelin de Raucourt: My opinion is very much in line with what Mr. Larivière was saying, that these are things that should absolutely be looked at. We will have to go further and rethink the criteria used to determine what constitutes a high quality project. Sometimes, a project description must contain a lot of details or conceptual evidence on the environment in which the researcher operates. However, that places too much weight on the institution's infrastructure, when it is not always related to the quality of the project that the researcher can carry out. These are things that also need to be reviewed.

One solution would be to ask a researcher, for example, to talk about their five publications that are most relevant to the project, rather than gathering an infinite number of pages of publications that aren't relevant. It would also be much less cumbersome for the teams to manage. There are a number of potential solutions to explore in what is also called redefining the criteria of excellence.

[*English*]

Hon. Helena Jaczek: Thank you very much.

At our last meeting, we did have a suggestion from the Canadian Association for Graduate Studies that perhaps the allocation—again talking about redistribution, practical suggestions—should be based on, in fact, the number of students in that institution. Do you feel that might be helpful as well?

The Chair: Very briefly, please.

Hon. Helena Jaczek: This is for Dr. Larivière.

[*Translation*]

Dr. Vincent Larivière: Very briefly, it would be something to explore. I think the key word here is “experimental”. Funding agencies need to be ready to experiment with new ways of allocating funding. We can see this trend internationally. In fact, the Europeans and the Swiss National Science Foundation often do this. There is even talk of randomizing funding, i.e., handing out some of the funding randomly, because at the moment, the peer review system is recognized the world over as being imperfect.

[*English*]

The Chair: That's great. We are over, but thanks for getting that in.

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

[*Translation*]

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

My question is for Ms. Poncelin de Raucourt.

In your presentation, you talked about the vicious cycle that the current funding system creates.

Can you provide us with more details?

Mrs. Céline Poncelin de Raucourt: Yes, absolutely. In our university network, concentration has a direct impact on our institutions' developmental capacity, on their ability to attract graduate students and, as a result, on funding for their operations budgets. Indeed, a large part of the funding used for university operations is contingent on student numbers.

As a result, there is less intake capacity, in particular because of the quota system for graduate student scholarships, which has a direct impact on a university's development. As I said earlier, less funding for research means fewer funded researchers; fewer funded researchers means fewer graduate students; fewer graduate students means a smaller operations budget; a smaller operations budget means fewer professors and fewer teams to support them.

That's the vicious cycle I was talking about earlier.

● (1250)

Mr. Maxime Blanchette-Joncas: Thank you.

I will now turn to Mr. Larivière.

In your opinion, is the allocation of research funding in Canada currently affected by the “Matthew effect”? Scientists from the top institutions of higher learning say that the allocation mechanism is not creating any problems. They receive nearly 80% of the funding and obviously want to maintain their position of dominance in research and in technological innovation.

Dr. Vincent Larivière: Yes, there is a “Matthew effect”. That basically means that the more visibility you have in the scientific field, the more funding you receive and the easier it becomes to receive more funding. It turns out that the more money you have, the more funding you get.

This is not unique to Canada, though. We are seeing this play out virtually everywhere, as I mentioned earlier. On that note, I would really like us to try different ways of reintroducing greater fairness into the system so that we don't lose discoveries that could have been made were it not for a lack of resources.

Mr. Maxime Blanchette-Joncas: Mr. Larivière, since we are talking about discoveries, I would point out that according to some researchers, the current system does not even provide funding for cutting-edge research. I would like to know what you think about that.

Dr. Vincent Larivière: It is true that our peer review system is currently regarded as very conservative, which means it is quite likely that no funding will be granted for ideas that are slightly more outside of the box.

Mr. Maxime Blanchette-Joncas: Would you say that Canada is more focused on [*Technical difficulty—Editor*] than on discoveries that might warrant a Nobel Prize, for example?

Dr. Vincent Larivière: That would be speculation on my part. That said, it is clear that some work is not being done because of a lack of funding.

[*English*]

The Chair: Thank you.

Mr. Cannings, you have two and a half minutes.

Mr. Richard Cannings: Thank you.

I'm going to turn to Dr. Poncelin de Raucourt again.

The day before yesterday, in the budget, there was an announcement about a new advisory council on science and innovation that would be responsible for a national strategy to guide priority setting and to increase the impact of federal investments in research.

If you were on that council, what would be your first bit of advice to the government on how to best change our funding system for science and research in Canada?

[*Translation*]

Mrs. Céline Poncelin de Raucourt: If I were on that council, it would be because they heard us today.

One of the recommendations we made in the brief we will be submitting is that a committee of this kind should take into account the diversity of Canada's research ecosystem. That way, institutions located in various regions or with a different approach could be represented within those committees and have their voices heard. That would be the first bit of good news.

A second recommendation would be to ensure adequate funding for the entire research ecosystem. It's something we've been talking about here for a while. That is how we will be able to address the issues, by allowing all the regions and different approaches to have a voice. I think that's the innovative quality that Canada's research ecosystem will have.

This would ensure fair distribution and fund the discoveries of a greater number of researchers so that we can have a system that is as innovative and as agile as possible.

[*English*]

The Chair: You have 30 seconds.

Mr. Richard Cannings: Thank you.

My second question was going to be on the makeup of that council, but you answered that off the top. If you want to expand on it, in 20 seconds, I'd be happy to hear that.

[*Translation*]

Mrs. Céline Poncelin de Raucourt: I think these are things that other stakeholders have pointed out.

In choosing the organizations that will advise Canada, we will have to pay attention to the various universities and profiles of people who will be part of the strategies used in order to get diverse viewpoints, which will allow for research projects that are as varied as possible.

We have to make sure that organizations of different sizes and from different regions are represented on committees such as this one.

● (1255)

[*English*]

The Chair: We've come to the end of our questioning.

My comment to both our witnesses would be on your excellent answers on very short notice, like zero, where we were able to get complex questions answered in a remarkable way.

Thank you for providing your excellent testimony, Vincent Larivière and Céline Poncelin de Raucourt. Again, if you have anything in writing that can help our study, it would be appreciated. Members are doing a great job of getting us the information for the analysts through you.

We have come to the end of the eighth hour of this 12-hour study. We have two more meetings coming up when we return from our constituencies in the coming weeks and we'll continue the study at that point.

Thank you, again, to the witnesses and to the members for this morning's session.

With that, we'll look for an adjournment motion and I see it.

The meeting is adjourned.