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Chair: Mr. Lloyd Longfield





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• (1105)

[English]

**The Chair (Mr. Lloyd Longfield (Guelph, Lib.)):** Welcome to meeting number 51 of the Standing Committee on Science and Research.

Today's meeting is taking place in a hybrid format, pursuant to the House order of June 23, 2022. Members are attending in person in the room, and we do have a member on Zoom as well.

I'll make a few comments for the benefit of the witnesses. Thank you to the witnesses for getting teed up.

I'll recognize you by name before speaking. If you're participating in the video conference, just click on your microphone icon to activate your mike. When speaking, please speak slowly and clearly. When you're not speaking, please mute your mike. If you need the interpretation on Zoom, there's a globe icon at the bottom of your screen where you can choose floor, English or French. For those in the room, you know about the earpieces.

Although this room is equipped with a powerful audio system, feedback events can occur. These can be extremely harmful to the interpreters and can cause serious injuries. The most common cause of sound feedback is the earpiece being worn too close to a microphone. Therefore, we ask all participants to exercise a high degree of caution when handling the earpieces, especially when your microphone is on.

In accordance with the committee's routine motion concerning connection tests, I've been informed that those have been done. I will remind you that all comments should come through the chair.

To get us started, pursuant to Standing Order 108(3)(i) and the motion adopted by the committee on Tuesday, June 6, 2023, the committee commences its study on the use of federal government research and development grants, funds and contributions by Canadian universities and research institutes in partnership with entities connected to the People's Republic of China.

It's my pleasure now to welcome Christian Leuprecht, a professor from the Royal Military College of Canada, by video conference; and Jim Hinton, intellectual property lawyer, also by video conference.

You'll each have five minutes for your opening remarks, and then we'll go to our rounds of questions. We'll start with Mr. Leuprecht.

The floor is yours for five minutes. Thank you.

[Translation]

**Dr. Christian Leuprecht (Professor, Royal Military College of Canada, As an Individual):** Mr. Chair, thank you for the invitation.

I will deliver my remarks in English, but will be happy to answer your questions in the two official languages.

[English]

I will skip over an introduction that lays out the infiltration and co-optation of Canadian research by Chinese defence intelligence, national security and dual-use technology entities, but rest assured that the public record shows that it is deep and vast. In some cases, Canadian institutions and researchers know full well that their Chinese interlocutors are highly problematic, while in others they are unwitting participants.

Tax dollars, public research funding and public universities have for years been leveraged systematically to support and enable research and to use technology that benefits hostile authoritarian states that seem to undermine Canada's democratic institutions, electoral processes, economic prosperity, national security and fundamental values, as well as international multilateral institutions and so forth.

The government purports to have a values-based foreign policy, yet, for over 17 years, its own research dollars and institutions have been used by hostile states to advance nefarious purposes that run counter to those very values. This is not a random distribution problem. The problematic research partners and methods of infiltration and co-optation have been a matter of public record for at least five years, as have key areas of sensitive research.

At the same time, dithering by the federal government on a coherent and systematic approach and framework to contain this problem is anecdotally causing some scholars to be excluded from opportunities merely by virtue of having a Chinese surname. Contrary to the Prime Minister's claims that government action might have racist consequences or overtones, it is precisely the government's inaction that is having racist consequences by creating widespread uncertainty.

Conversely, any scholar who has family in China, who works with former colleagues in the PRC or who visits China would be vulnerable, as is naturally the case with most scholars with relations to China. Although the committee's focus is on the federal government's role, this domain requires close and extensive collaboration among the federal government, the provinces and research institutions, with robust and resolute federal leadership to ensure certainty and national coherence. To this end, the federal government must not succumb to the temptation to take the easy way out by taking a narrow approach. This would be a serious mistake. Only a comprehensive approach to research security will be effective and meaningful.

First, on sensitive research areas, the government needs to flag high-risk research areas, notably those that could give rise to dual-use technology. Conspicuously absent from the motion that informs the committee's hearings, for instance, is computing or advanced materials manufacturing and critical minerals, which would capture research on electric vehicles.

Two, it needs to be country-agnostic. Once sensitive research areas have been identified, the approach should be country-agnostic and encompass not just China but hostile authoritarian regimes more broadly, including Russia and Iran.

Three is listed entities. The government must muster the courage to list problematic entities, which includes about 200 Chinese institutions and companies, but also entities in Russia and Iran, for instance. Researchers must have clarity about which affiliations are problematic.

Four, identifying sensitive research areas, problematic countries and actual entities shifts some of the burden for research security to the researcher, who should be required to certify in good faith that either none of these apply to the PI and application, or if they do, the researcher should be required to submit a comprehensive research security plan that explains in detail the risks and the mitigation strategies. Inadequate risk mitigation plans should be grounds for rejection. Research security plans must exercise due diligence to ensure that research does not end up in the wrong hands and to provide additional safeguards, including annual audits and possibly withholding funds to researchers and institutions.

Five is having a broad, comprehensive vetting process. Instead of looking only at direct or indirect—that is, in-kind—financial support for a project, a proper vetting process must look at the principal investigator's collaborations holistically, notably that PI's record of co-authored publications and other grants. Looking only at financial support on an application for a project will miss key problematic relationships. Arguments that the charter somehow works against a comprehensive vetting process are false and merely an excuse to avoid doing the right thing.

Six, the federal government has started to fund research security at Canadian universities, but there are two problems. One is that the formula used to calculate support under the Government of Canada's research support fund is problematic. Aurora College gets \$256 a year, Trent gets \$25,000, and the University of Toronto gets \$4.3 million. This is insufficient funding for Trent to hire research officers, on the one hand, but way too much money for the University of Toronto. Second, that effort looks largely performan-

tive. The new university research officers have thus far received little guidance and are largely performing an administrative function. They require clear guidance.

Seven, universities should be allowed and encouraged to put this new research funding towards research, best practices and awareness in support of research security.

• (1110)

Thank you.

**The Chair:** Thank you very much for your comments.

Now we'll go to Mr. Hinton, please, for five minutes.

**Mr. Jim Hinton (Intellectual Property Lawyer, As an Individual):** Thank you, Chair and honourable members of the Standing Committee on Science and Research. I had the opportunity to speak with you earlier this year, and it is again an honour to present to you today.

I'm an IP lawyer, patent agent and trademark agent with my firm, Own Innovation. I'm also a senior fellow at the Centre for International Governance Innovation, where I study innovation and intellectual property policy. I also teach innovation and IP commercialization strategies at Western University in London, Ontario.

I express gratitude to the committee for studying this important topic. Security and control of Canadian research is a matter of national security as well as national economic prosperity. The value of Canadian research is controlled by intellectual property and physical restriction. Whether we protect our research or not, countries are using it to advance their national agendas.

Today, we are talking about what happens when foreign actors use our technology and IP to put our national security at risk. Canadian research institutions—our universities—are some of Canada's most sacrosanct institutions; however, these institutions have been compromised. According to public reports, 50 Canadian universities have conducted extensive research with China's military since 2005.

Huawei has partnered with over 20 of Canada's research institutions. Huawei has received intellectual property from the University of Waterloo, the University of Toronto, McGill University, the University of British Columbia, the University of Calgary, the University of Ottawa, Université Laval, Institut national de la recherche scientifique, Carleton University, Polytechnique Montréal, Western University, the University of Regina and McMaster University. I am naming these names so that there is no longer a veil of secrecy in these deals.

This is just the tip of the iceberg. Significant public funding, millions of dollars and resources are being used. Hundreds of patents have been generated for Huawei through these deals. The commercial rights go to Huawei, and they can use this technology in any manner they want. Canadians are legally prohibited from practising these technologies. These are not one-off instances. This is a systematic exfiltration of Canadian publicly funded assets to an organization that now isn't even allowed in Canada's telecommunications systems.

The federal government, through programs like the National Science and Engineering Research Council of Canada, NSERC, not only has been complicit in these arrangements but has been incentivizing this behaviour. While there has been a recent shift in the approach because of the increasing public outcry, it has been entirely reactionary. NSERC has been funding Huawei research projects since at least 2010, and despite some changes, Canadian universities and researchers can still work with Huawei. They just may no longer be incentivized to do so.

I propose the following recommendations, modelled from global best practices in the United States, Australia and other jurisdictions.

The first is transparency. We need to know who is working with Canadian research institutions and how much they have been benefiting. We really don't know the extent of the relationship or its impacts. We also need to know what this technology has been used for, particularly for dual-use technologies that may have commercial uses as well as nefarious purposes. Universities receiving public funding must track and report the flow of research and development efforts with annual and concrete disclosure, including how much and whom they are working with.

The second is proactive and not reactive policy. The fox is in charge of the henhouse. The universities and researchers themselves are in many cases tasked to self-report potential national security issues, but they are in an inherent conflict of interest. We must properly resource and incentivize universities to work with Canada's intelligence community to be up to date on the latest intelligence and understand challenges to proactively manage relationships for Canadian benefit. Consider legislation like what Australia has adopted to review and, if necessary, to cancel international agreements made by universities.

Finally, we need to retain strategic Canadian intellectual property and data assets. We need to stop doing these terrible deals, end them now and make sure we don't get into the same problem again. Also, we need to continuously update technologies of strategic importance. Economic and security risks are not separate issues. Intellectual property and data assets for artificial intelligence, quantum, photonics, biotech and aerospace are dual-use technologies that have both economic and national security value. Any assessment of risk and net benefit needs to include both the economic value and the security risks.

China sees our universities as strategic IP generators for its military and its firms, but it's not just China. It's also the Americans. It may also be Russia or Iran. The federal government needs to take control of the situation and ensure that publicly funded intellectual property and data assets benefit Canadians, not foreign militaries.

• (1115)

Thank you, and I look forward to the discussion.

**The Chair:** Thank you. You're right on time with your comments.

Thanks to both witnesses.

Now we'll go into a six-minute round of questions, starting with Mr. Mazier.

The floor is yours.

**Mr. Dan Mazier (Dauphin—Swan River—Neepawa, CPC):** Thank you, Mr. Chair.

Thank you to the witnesses for being here today.

Mr. Hinton, thank you for being here again.

I expect that, during the study, we're going to hear about the 2021 national security guidelines for research partnerships and the ministers' 2023 announcement on funding research partnerships. I expect the universities will say there's nothing to see here because the guidelines have changed. Also, I expect the government will say the ministers have addressed the national security concerns with the new directive.

Therefore, as a committee, what should we keep in mind when we hear the universities testify on this?

• (1120)

**Mr. Jim Hinton:** Thank you. It's good to see the group again.

This is just the tip of the iceberg. There's a lot more going on under the surface. Fundamentally, there's a failure of governance out of Canadian universities. This has been a problem for years, and it's only with public scrutiny that we've seen any reaction. It's clear they're not able to govern themselves.

Yes, some universities appear to have ended their partnerships with Huawei, but what about the next issue?

**Mr. Dan Mazier:** Can you expand a bit on that? You made some comments about foxes around the henhouse. Is there something lurking underneath? You talked about transparency and secrecy, as well. Is there something we should be asking particular questions on?

**Mr. Jim Hinton:** Yes. Fundamentally, I would ask whom the universities have been partnering with, to what extent, where this technology has gone and who has benefited from that. Importantly, have these technologies been used for nefarious purposes? We don't know the extent of it—what or where this has gone. This is all confidential. We've seen media reports on what's happened, but it's only because there have been media reports.

Back in 2018, The Globe and Mail reported on this issue. Only with mounting public pressure has there been reorientation. That means the universities themselves are complicit in this funnelling of IP to Huawei. They get a bit of money and they're happy about it, but it's clear to me that it's only after they've been put under the public microscope that they have had the wherewithal to remove themselves from such a bad situation. We can't trust them to make sure this doesn't happen again.

Huawei is one example, but, again, there are Russia and Iran. There are all of these others, as well as Chinese state actors. We really don't know. The 50 universities.... There are a lot of Canadian universities that are working or have worked with Chinese military researchers. That's extensive. This is only the tip of the iceberg—what we can see publicly. The universities themselves know this information and have not been sharing this information.

**Mr. Dan Mazier:** Thank you.

Some researchers have claimed that scrutinizing national security threats in research funding is a threat to academic freedom. What do you say to this argument?

**Mr. Jim Hinton:** I teach at Western. I know academic freedom well. Academic freedom requires an environment of enabled autonomy with researchers free from undue external influence. State military actors are undue influencers, whether academics like to admit it or not.

There are limitations on what can and should be done in the name of academic freedom. Just as a researcher is not permitted to falsify research or plagiarise, they should not be able to aid and abet foreign military actors at the risk of Canada's national security.

**Mr. Dan Mazier:** Do you believe universities are capable of screening national security threats before engaging in research partnerships, and if not, why?

**Mr. Jim Hinton:** I don't think universities are capable of screening national security issues. They're not resourced. They don't have the wherewithal and they're not experts. They have experts in photonics and quantum computing. They graduate up through the ranks and become administrators of these institutions, but they're not experts on national security. We even saw the University of Waterloo issuing guidelines to researchers to slow down, advising them they don't have to work with CSIS.

We should be collaborating and working together. The universities themselves benefit. They take a bit of money, and then they do whatever they want. Yes, there are new rules and some additional scrutiny, but it doesn't correct the dereliction of their duty to the public interest in the past. They made a mistake and they continue to make mistakes. It hasn't been corrected and I wouldn't trust them to correct it themselves.

**Mr. Dan Mazier:** So there needs to be some clear direction by either Parliament, I guess, or CSIS. There needs to be more done. Some clear direction needs to be given to the universities, by all means.

**Mr. Jim Hinton:** Yes. Absolutely.

**Mr. Dan Mazier:** This study would probably go a long way in starting that path forward, I guess.

Mr. Leuprecht, I have one question. You mentioned something about “five years ago” and about how this issue seemed to be accelerating since then. What was the key thing that happened so that all of a sudden this became a huge issue in our research community?

• (1125)

**Dr. Christian Leuprecht:** Aside from the known malfeasance by Chinese intelligence actors with regard to institutions, such as the complete data exfiltration of the Australian National University, we also had the really comprehensive report by the Australian Strategic Policy Institute, which was the first report to flag these problematic collaborations and which at the time, of 2,500 problematic collaborations over 10 years, flagged 300 of them in Canada. In particular, three Canadian universities were in the global top 10 of these problematic collaborations—

**The Chair:** Thank you. If we could get the rest in writing, that would be terrific.

It's over to Mr. Sousa for six minutes, please.

**Mr. Charles Sousa (Mississauga—Lakeshore, Lib.):** Thank you, Mr. Chair.

Thank you, gentlemen, for your presentations.

You know, this committee was formed with the priority to try to protect IP, the sovereignty issue of Canada's presence with respect to technology, as well as national security. We all have the shared concern to ensure that our Canadian innovators are protected and that we retain some of that IP and monetization and scaling of that technology here in Canada. We all have a sense of wariness about some foreign entities being involved. Notwithstanding some of the academic excellence and independence that's required in the scientific community for international engagement, we want to make certain that Canada is protected throughout. Certainly, we see Russia and China and some of their institutions excelling in certain applications. We want to take advantage of that as well, but we want to protect Canada. We want to protect our businesses and our economy throughout.

I appreciate, Mr. Hinton, your mention of some of the concerns about compromise and certainly some of the developments that have occurred long before five years prior. This has been going on for some time. My question is this: Do you believe the Trudeau government was correct in its move to ban Huawei in Canada?

**Mr. Jim Hinton:** I'll leave the question of banning Huawei to the national security experts, but from the information I have, that makes a lot of sense. Banning Huawei from the communications infrastructure was one thing, and then waiting a period of time, a significant amount of time, to turn to Canadian universities and say, wait, there's more to what's going on here.

This is really just through the front door. A lot of things are happening in the background that—

**Mr. Charles Sousa:** Yes. That's a good point.

I also recognize some of the jurisdictional constraints between the federal government and the provincial governments in regard to the universities. Provinces support some of the policies and engagements by universities.

Mr. Leuprecht, in March of this year, you testified at a parliamentary committee and said, “Recent unclassified versions of CSIS annual reports repeatedly warned about the state capture and elite capture of Canadian political, business, financial, educational and societal elites and institutions.” You waved a concern.

How recently would you say that this threat has been present in Canada?

**Dr. Christian Leuprecht:** Well, I would say that we are recently aware of public debate about a certain individual whose report became quite prominent, who has had a least a dozen trips to China and who has referred to a major Chinese university as that individual's second home. Some of that individual's children have studied in China.

There are many other examples that we could cite. I would say that problematic relationships run deep and wide in Canada, with potential pecuniary interests.

**Mr. Charles Sousa:** Thank you.

I know there have been reports by CSIS back in 2010 and 2011 that were made public—I think I can count eight of them—showing concern to the previous government, and Harper in particular, who was in retention of some of these activities and being cautioned not to engage and not to provide some of this support that is being provided to the universities today.

I'll cite this from one report:

While the vast majority of foreign investment in Canada is carried out in an open and transparent manner, certain state-owned enterprises...and private firms with close ties to their home governments have pursued opaque agendas or received clandestine intelligence support for their pursuits here.

This is from the 2010-11 CSIS public report. The following year, Harper signed a deal with Huawei to participate in major Canadian telecommunications projects.

Now, that hardly seems like a recent threat. It's fair to say, then, that the economic espionage has been a threat for well over 10 years. Some unclassified versions of these reports are sent directly to the PM before being tabled in Parliament. It is fair to say that then PM Harper would have known of the security risks and proceeded anyway.

We know these threats. We've taken some steps to try to unwind them. Your cautionary tale—both of you—is important here. It's critically important to ensure that we proceed appropriately and effectively.

Would you agree that this was going on for some time, long before this government?

• (1130)

**Dr. Christian Leuprecht:** Yes, but I would also say that in 2017 we had a qualitative and quantitative paradigm shift in the aggressive posture by China and the systematic leveraging of technology to undermine our way of life, which now poses an existential threat

to Canada in a way that we did not have before. I would say the current government has been rather slow in picking up on this paradigmatic shift.

**Mr. Charles Sousa:** I would tend to agree that China and Russia, for that matter, have been pretty aggressive across the world, across western countries, and not just Canada. It is very concerning to all of us and, with our allies, we must take the proper steps to correct those measures.

Do you think Harper's government was correct to allow Huawei to expand in Canada, despite warnings from allies and its own public safety officials?

**Dr. Christian Leuprecht:** I would say that since 2015, we've seen significant changes in Australia, in particular when it comes to foreign funding, including a foreign agent registry that requires universities to report such funding. We've seen aggressive measures by the U.S. administration, including the arrest of at least one very prominent professor for apparently having misidentified his relations.

That is to say that two of our key allies, Australia and the United States, have been much faster out of the starting blocks and much more aggressive than the current federal government.

**Mr. Charles Sousa:** I appreciate those comments, and I also appreciate the fact that Canada took some major steps with Huawei, as you know. That was very public for a number of years with the detention of the president.

Thank you, Mr. Chair.

**The Chair:** Thank you both.

[*Translation*]

Mr. Blanchette-Joncas, the floor is yours for six minutes.

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

I would like to welcome the witnesses who are joining us for this important study.

My first questions are for Dr. Leuprecht.

Dr. Leuprecht, let me begin by expressing my surprise that your opening remarks were in English only. You even said in French that you would be speaking in English only. To my knowledge, you represent a bilingual military college. Now, that usually means speaking two languages, and Canada's two official languages are French and English, so I would very much like it if, in your future comments, you could speak in both of Canada's official languages, which are, I repeat, English and French. I understand that—

[*English*]

**The Chair:** If I could just interrupt, the bells are ringing. I'd like to see if we have unanimous consent to finish with the last two six-minute rounds, which will take us to about a quarter to 12 o'clock. The votes are going to be just after 12 o'clock.

Is that okay around the room?

**Some hon. members:** Agreed.

**The Chair:** Thank you.

I'm sorry to interrupt. Please continue.

[*Translation*]

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

I will return to the topic of the study, but I would still like for my comment to be taken into consideration.

As you know, today's study is on Chinese interference in our teaching establishments. The draft report of the House of Commons Special Committee on the Canada–People's Republic of China Relationship identified five research areas that are vulnerable to threats: artificial intelligence, quantum technology, 5G technology, biopharmaceutical research and clean technologies.

In your view, Dr. Leuprecht, are there any other areas that might be susceptible to risk, to which we should be paying special attention?

**Dr. Christian Leuprecht:** First of all, thank you for your comments regarding the use of both official languages and for your concern in this regard. In the past, in other committee meetings, your Bloc Québécois colleagues have commented on the quality of my bilingualism. I am an immigrant to this country and I have made the effort to master both official languages. However, I was asked to appear in front of the committee three days ago and, since I have a busy schedule, that did not give me enough time to prepare my remarks. I would therefore ask that, next time, I be given more time so I can prepare my remarks properly in both official languages. That said, I am grateful to you for your concern about official languages. I have been a strong defender of both official languages for a long time, including in the federal establishment where I teach.

As for the five vulnerable areas, I would draw your attention to the areas I mentioned in my remarks, and particularly to everything having to do with computing. It seems to me that, in the entire computing field, there should never be any collaboration with countries that are considered problematic, because all the research that comes out of such collaboration risks being used for purposes that are not compatible with Canada's national interests. In addition, as I mentioned as well, it seems important to me to add to the specific areas mentioned in the report the research related to electric vehicles, particularly with regard to critical resources and producing advanced materials.

• (1135)

**Mr. Maxime Blanchette-Joncas:** Dr. Leuprecht, based on your expertise, could you tell me where Canada stands compared to other western countries in terms of national security in the research context?

**Dr. Christian Leuprecht:** It is a problematic issue. Certain notable countries in this field, such as Australia, the United States, the United Kingdom and France are much further advanced than we are. Germany is having pretty much the same conversations we are.

However, since Canada has a very diverse society, some of our researchers present a very high risk in terms of vulnerability. So we must compare not only the countries themselves, but also their vulnerability and their networks with important allies. In this respect, Canada is a very specific target for China. Germany may not be targeted in the same way because it is in a position to defend itself. Canada, on the other hand, is less capable of doing so.

**Mr. Maxime Blanchette-Joncas:** More specifically, I would like to know where Canada stands compared to other G7 or G20 countries. Is Canada doing more or less than other comparable countries?

**Dr. Christian Leuprecht:** As an example, it took the government seven years to ban Huawei from Canada's telecommunications sector. So, in terms of the time it takes to make important decisions concerning national security and the ability of the national security intelligence system to facilitate relevant decision-making, it seems to me that this is not well calibrated in Canada.

For example, we saw that the decision concerning Huawei really sent an important message to universities. Indeed, it was after the government made that decision that universities reacted to collaborations. In my view, the current federal government's leadership was weak, compared to that of our allies. The decisions that were made had important consequences in terms of refocusing universities' trajectories.

**Mr. Maxime Blanchette-Joncas:** Thank you, Dr. Leuprecht.

Among G7 countries, Canada is far behind in terms of research investments, as we know. I would even say that Canada is among the last in the G20. Is this negligence also felt in research security?

**Dr. Christian Leuprecht:** The problem is the way we establish links between investments and—

[*English*]

**The Chair:** I'm sorry. We're over time.

I'm going to have to ask for that in writing, because we are over time.

[*Translation*]

**Mr. Maxime Blanchette-Joncas:** You can indeed submit your answer in writing, Dr. Leuprecht.

Thank you very much, Mr. Chair.

[*English*]

**The Chair:** Thank you. I apologize.

We have Mr. Cannings, please, for six minutes.

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

Thank you to the witnesses for being before us today.

I'm going to start with Mr. Leuprecht. You mentioned in your opening comments that you thought this was a study specifically about Canada's research relationships with China, but you made the specific comment that we should be country-agnostic when it comes to these considerations. You mentioned Russia and Iran, I believe.

I'm wondering if you could expand on that and how this conversation should perhaps be broadened to include any country that might pose these risks.

**Dr. Christian Leuprecht:** There are three considerations here.

One is that the data we have on China and Chinese problematic collaborations is more comprehensive in the public domain than that for other authoritarian hostile actors. However, the challenge by China, because of the nature of its industry and society, is perhaps also more expansive than that posed by other state actors.

I'd also say, as I just mentioned in my previous comments in French, that the federal government is not particularly nimble—not just this government, but the Government of Canada more broadly—when it comes to key decision-making on security, intelligence, defence and foreign affairs. This is a long-standing problem. It takes a long time to make decisions, let alone the right decisions. We need to make sure that we set up this posture or framework in such a way that it remains agile and adaptive for the future.

The third consideration is that we want to make sure we identify the challenge—which is authoritarian hostile actors who might use or are using this technology, in the case of China, to actively undermine Canada's national interests—rather than any one particular country, per se.

• (1140)

**Mr. Richard Cannings:** I think the next point you made in your comments was about listing problematic entities. I assume, therefore, that you would want to see problematic entities anywhere in the world listed in this context.

**Dr. Christian Leuprecht:** Yes. I would say that some would perhaps take a different approach from Mr. Hinton, which is that universities can do a significant amount of the legwork if they are told what the sensitive research areas are and what the potentially problematic countries are, and if they are told the specific entities and actors with whom they should be avoiding collaboration. This won't give us full domain awareness, but it will allow universities to do a reasonably comprehensive initial vetting process.

We want to make sure that researchers don't even submit applications that could be problematic. We don't want to rely on the federal government's and other entities' vetting processes. We want to ultimately generate a framework whereby most of these problematic relationships can be identified and self-policed by the universities themselves.

**Mr. Richard Cannings:** That would include your comments on certifying a research security plan, or something like that.

I'm just wondering if you could expand on that. What would that entail? What would a researcher have to do to get through those hoops properly?

**Dr. Christian Leuprecht:** There are two problems here.

One is researchers who, in the past, have had collaborations as co-authors, for instance, that would today be construed as problematic. How do we get them to atone for the sins of their past?

The other is that there may still be reasonable grounds on which to have research collaborations with certain problematic actors. For instance, that might be, on the one hand, in climate change technol-

ogy, but on the other hand in intelligence or military technology in terms of dual-use components. Computing is a good example.

For those, the researcher should be allowed to submit a research security plan that demonstrates appropriate risk mitigation measures, because we can't just tell a researcher, "Because you worked with problematic Chinese research or an entity in the past, you can never get any research funding again for the area in which you specialize, or you can never work with those actors again." We should leave it up to the researcher to demonstrate that those collaborations do not pose a risk to the way Canada has articulated its red lines when it comes to its national interests and its security interests.

**Mr. Richard Cannings:** How much time do I have?

**The Chair:** You have a bit more than a minute.

**Mr. Richard Cannings:** I'll turn to Mr. Hinton.

Your comment in response to a question you got was about how researchers who are working with problematic foreign actors—Chinese companies like Huawei—have their ability to speak and do research somehow constrained by those agreements. Wouldn't you say that this happens whenever a researcher gets funding from any commercial interest, whether it's an oil company or a chemical company or whatever? That constrains, almost automatically, what that researcher does, the questions they ask, and what they say about the results of their research. They'll basically be self-censoring their own research.

Wouldn't you say that's a broader problem, perhaps, than these security issues we're dealing with?

**The Chair:** Give a very brief response, because that was over a minute.

**Mr. Jim Hinton:** Yes, it is a broader problem. It is also a specific problem. Making sure that Canadian universities and researchers are working for the net benefit of the country is very important, as well as the specific issues when the technologies can be used in harmful ways.

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

Thank you, both. Thank you for coming on short notice, as Mr. Leuprecht mentioned, and thank you for providing the testimonies you've given us for this study. If you have more information that you can submit in writing, that would be great.

I will just outline where we are in the committee, because the bells are ringing. We have 17 minutes. We have to get our other witnesses in, which will be at about 25 minutes after 12 o'clock. That will give us about 40 minutes of their time, to keep the studies balanced.

We then have a motion. We have to do the budget. We have to go in camera, which is also going to take some conversion time, to do the drafting instructions.

I think that, at this point, we'll suspend until after the votes.

• (1145)

**Mr. Corey Tochor (Saskatoon—University, CPC):** On a point of order, Chair, we have 15 minutes right now. We're filibustering so that we don't get more answers from the witnesses here today—

**The Chair:** I don't think it's a filibuster.

**Mr. Corey Tochor:** We have 16 minutes. What are we going to do from now until the vote, then?

**The Chair:** Do we have unanimous consent to do another round of questions?

**Ms. Lena Metlege Diab (Halifax West, Lib.):** Well, this one was scheduled for 45 minutes. It's exactly 45 minutes.

**Mr. Corey Tochor:** We started late, though.

**Ms. Lena Metlege Diab:** I would suggest that we get the witnesses ready for the second round so that we don't waste that one as well. We'd have to stop five minutes before the bells anyway.

**The Chair:** Yes. I think we will suspend.

I'm not trying to avoid the witnesses—if you can get us anything else in writing, please do—but by the time we did another round, we would be over the time for voting. We also have other business to do.

I will suspend until after the votes.

• (1145)

(Pause)

• (1215)

**The Chair:** I am hoping Mr. Blanchette-Joncas will join us.

Pursuant to Standing Order 108(3)(i) and the motion adopted by the committee on Monday, December 5, 2022, the committee commences its study of the long-term impacts of pay gaps experienced by different genders and equity-seeking groups among faculty at Canadian universities.

It's now my pleasure to welcome, as an individual, Alexa D'Addario, Ph.D. student. Joining us online from the University of Ottawa, we have Ivy Bourgeault, research chair in gender, diversity, and the professions.

You will each have five minutes to give us your opening comments, starting with Ms. D'Addario.

**Mr. Richard Cannings:** Mr. Chair, I'm sorry to interrupt.

Do we not have to wait 10 minutes after a vote? I don't know where Maxime is, but if he went to the House to vote, we're supposed to allow 10 minutes.

**The Chair:** Okay, thanks.

**Mr. Richard Cannings:** I'm sorry. I don't know where he is, but I've been caught like this other times.

**The Chair:** Mr. Cannings is right. There is generally a 10-minute wait. When I gavelled in, I thought I had everybody in the room, but I mistook one of our staff assistants for Mr. Blanchette-Joncas. I saw only the back of his head. Hopefully, he can join us.

There he is.

We'll go to Ms. D'Addario for a five-minute presentation, please.

Thank you for joining us.

**Ms. Alexa D'Addario (Ph.D. Student, As an Individual):** Thank you so much.

Good afternoon, honourable Chair, honourable Vice-Chair, and members of the committee.

I want to thank you for having me as a witness to the House of Commons Standing Committee on Science and Research as part of a panel in view of the long-term impacts of pay gaps experienced by different genders and equity-seeking groups among faculty at Canadian universities.

I have been in post-secondary education at a number of Canadian universities since 2010, with only very brief periods of no enrolment. Shortly after beginning my studies, I became aware of pay gaps experienced by different genders and equity-seeking groups among faculty at Canadian universities.

Since beginning my studies, it has become a popular discussion point regarding gender equality in Canada, with many people having strong feelings one way or another. Indeed, it is a complex topic, with many different factors influencing the outcome, and everyone will have a different idea of why such discrepancies manifest, or conversely, don't.

Both the United Nations and the Government of Canada recognize gender equality as sustainable development goal 5. Indeed, according to the Government of Canada website:

gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world. This SDG addresses the reality that, despite progress, gender inequality persists. Women and girls often face multiple and intersecting forms of discrimination, additionally compounded due to factors based on....

Then it lists race, ethnicity, geography, income, education, religion, language, sexual orientation, gender identity, age, disability, and migrant or refugee status. The United Nations Development Programme website states, "Ending all discrimination against women and girls is not only a basic human right, it's crucial for sustainable future; it's proven that empowering women and girls helps economic growth and development."

There has been extensive research on this topic in just Canada alone.

Marcie Penner is an associate professor of psychology at King's University College, affiliated with Western University, and Tracy Smith-Carrier is an associate professor and Canada research chair, tier 2, in advancing the UN sustainable development goals at Royal Roads University. Both Smith-Carrier and Penner were part of a study in 2021 quantifying the gender wage gap as well as pension gaps in Canadian post-secondary institutions and the impact over the course of a career and retirement. It was published in the Canadian Journal of Higher Education.

Using King's University College as a case study, the findings of the study revealed the presence of a gender wage and pension gap. Female employees earned lower wages compared to their male counterparts, even when factors like job positions and qualifications were considered. Additionally, female employees received fewer pension contributions, resulting in a gender disparity in retirement benefits.

In a subsequent article for University Affairs, Penner and Smith-Carrier wrote, "The gender pay gap for faculty in Canadian universities is significant and persistent. Women professors earn on average 10 per cent (or \$10,500 per year) less than men for the same work." They cited both the Canadian Association of University Teachers' 2018 equity report and Statistics Canada's "Number and salaries of full-time teaching staff at Canadian universities".

According to the authors, these gaps are compounded in indigenous, racialized and 2SLGBTQ+ faculty. Race was not a variable provided in available Statistics Canada data, and pay equity legislation did not address wage gaps faced by indigenous, racialized and 2SLGBTQ+ faculty.

However, according to the authors:

Data from the Canadian Association of University Teachers shows racialized professors experience a 10 per cent pay gap relative to their non-racialized peers. Racialized women professors, in particular, experience greater pay inequity.

Given that the gender pay gap for racialized women professors is double that of their non-racialized women counterparts, it follows that racialized women professors face larger lifetime salary and pension gaps than our calculation for women professors overall.

The study highlights that the gender wage gap is not solely a matter of unequal pay for equal work but is influenced by broader factors, such as occupational segregation and differences in job positions and opportunities. It also points to the importance of considering pension benefits as part of the overall gender gap in compensation.

The results of the study appear to be echoed in every other study that I looked at. According to a study by Karen E. A. Burns et al. published in PLOS Medicine in 2019, "Gender disparity existed overall in grant and personnel award success rates, especially for grants directed to selected research communities." Over a 15-year period, the findings of the study revealed significant gender differences in funding rates based on research content areas. Female researchers faced lower success rates compared to their male counterparts in certain content areas. These disparities were not explained only by factors such as career stage or research productivity, indicating the presence of gender bias in the grant and personnel award funding process.

The study highlights the need for addressing gender disparities in research funding within specific content areas. It underscores the importance of creating a more equitable and inclusive funding environment that provides equal opportunities for researchers of all genders, regardless of their chosen research field of study.

• (1220)

**The Chair:** Okay, thank you. We're at five minutes.

It goes quickly, I know. However, you can submit anything in writing or you could make that part of the answers to questions.

Now we'll turn to Ms. Bourgeault from the University of Ottawa, for five minutes.

**Dr. Ivy Lynn Bourgeault (Research Chair in Gender, Diversity and the Professions, University of Ottawa, As an Individual):** Thank you so much, Mr. Chair and members, for the invitation to speak on this issue of critical importance.

My name, as you know, is Ivy Bourgeault. I'm speaking to you as the University of Ottawa research chair in gender, diversity and the professions.

I have been in academia uninterrupted since 1985 as a student and since 1998 as a faculty member. I have written on gender inequity in academia in national and international journals, and I have provided testimony on gender-based pay gaps to the Ontario Human Rights Tribunal in the case of health professions where women predominate.

Let me state plainly that there exists a gender pay gap among Canadian faculty. This is a fact both within and across faculty. Data shows that the gap is widening among all faculty ranks. A 2019 article by Momani and colleagues measures gender pay gaps in the Ontario public post-secondary education sector from 1996 to 2016 using the public sector salary disclosure data, so that's everybody who earns over \$100,000. They found gaps widening among all faculty ranks. Men were paid on average 2.14% and 5.26% more than women faculty for all university teaching staff and deans, respectively. Keep in mind that these are only data covering those above \$100,000. These trends are muted in that case.

Using a robust methodology that tries to tease apart the different factors that are independently related to compensation, the majority of the gap can be attributed to factors that can be “explained”. This includes rank, department, years at rank and whether someone is a research chair. It is important to stress that these independent factors are in and of themselves influenced by gender and other forms of inequity. For example, if you are a woman, it takes longer to be promoted into higher ranks. This is something that we call “the sticky floor hypothesis”. Fewer women are observed in higher-paid disciplines, schools or faculties. Finally, there is robust research to show that women are less likely to hold prestigious research chair positions.

Other reasons to explain this gap include what is called a “pipeline issue”. This argues that women have not yet reached the ranks of academia in sufficient proportion for the gender pay gap to lessen. Momani and colleagues' analysis refutes this: “women's years of experience in academia do not mitigate the observed pay gaps.”

Labour productivity is another argument, which says that a woman's lack of progression could be justified if she is less productive or less experienced than her colleagues. As you know, productivity in academia is measured by research grants and publications. Less attention is paid to teaching, supervision and service work. Women are more likely to be assigned to more onerous academic service work, what we call “academic housework”, and women are also likely to supervise women students looking for same-gender mentors, who are more likely to take leave during their studies for parental reasons, which affects their productivity as students as well as that of their supervisors.

We also have to take into consideration the impact of the pandemic. It has become clear that the pandemic holds important implications for gender inequality in a variety of realms, including academia. “He's Working from Home and I'm at Home Trying to Work” is an apt descriptor that Martucci and others used to describe how women faculty were more likely to take on child care activities during lockdown, significantly affecting their productivity, especially in terms of publication and research grants, which are the key reasons for promotion and tenure.

Another descriptor is the disappearing research agendas of mother scholars in academia during the COVID-19 pandemic. Being more likely to teach, women faculty spent more time in the shift to online teaching even before the pandemic, but also, during the pandemic, women faculty were more likely to be approached by students with mental health concerns, which compounded during the pandemic and added significantly to their emotional labours. These impacts have legacy effects.

What about the other forms of inequity? This is much more challenging because we lack data in the Canadian context. Where data does exist, it points to greater inequities for Black women, indigenous women and women of colour in academia, especially around the emotional care labour, around inequities that rose up in the wake of the Black Lives Matter movement and the discovery of over 10,000 graves around residential schools.

Moreover, compensation should be seen as more than just salary. It can take a variety of forms, such as release time, research fund-

ing, size of office, time to tenure and promotion, and workloads. There is very little systemic data collected on these factors, all of which are inequitably distributed along gender and other lines. Pay gap studies typically take a narrow view of compensation, with a focus on salary differentials, and even those with that narrow focus often do not reflect on the long-term implication in terms of pensions, and that is significant and compounded every single year.

● (1225)

I hope that I've made the case for how action is needed now and action of a structural nature. This is not about fixing women and diverse genders and faculty of diverse background. Baker and colleagues this year made a case for pay transparency. Promotion transparency is another facilitator, and I'm happy to speak to other factors.

Thank you.

● (1230)

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

We're going to start off with Mr. Soroka.

I understand you're sharing some time with Mr. Tochor, as well.

**Mr. Gerald Soroka (Yellowhead, CPC):** Mr. Tochor will start.

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

Thank you to our witnesses. We'll have some questions for you here shortly from my colleagues.

I want to comment on this study and every study that this committee has looked at since this committee was established. It comes down to lack of money and control. For the most part, that is every study. In this study, it's about how we can close the gap, and it's going to take money. What we had here today, earlier in committee, was an hour allotted to look at the Beijing influence at our universities, and it was cut short. This study was started late because apparently the Liberals do not want to study this or find answers to Beijing's influence in our institutions. We are talking about billions of taxpayers' dollars that are getting funnelled into research and IP that leaves the country and goes to Beijing. That is the control they have of our IP. Those dollars that we waste on this research could be addressing all of the different issues that we've studied at this committee.

For us to drag our feet because there are some in the Liberal Party who do not want to hear the answers to these questions is a travesty. Over the summer, we will be asking the opposition parties to hopefully support that this study continue throughout the summer because these answers impact everything that this committee does. I believe what we will find is that there is a pattern of looking the other way with dollars leaving our country, which will make Canadians weaker and Beijing stronger because of a misuse of taxpayers' dollars at our institutions to support Beijing's interests.

With that, I will turn the floor over to Gerald to carry on with this study, but I do look forward to a summer of meetings at the science committee.

**The Chair:** You have about four minutes left. Thank you.

**Mr. Gerald Soroka:** Okay. Thank you, Mr. Chair, and thank you to the witnesses for coming today.

I'll start off with Ms. D'Addario. One of my biggest concerns with this study is the fact that universities always talk about how inclusive they are, how they're equal in opportunity, yet that's not what we're finding out, and we've only started this.

Could you give us examples of what you have either witnessed or experienced yourself in gender bias?

**Ms. Alexa D'Addario:** Absolutely.

That's absolutely true, especially these days. Since my time starting as a student, there's been more and more talk about equity, diversity and inclusion as being important with regard to the allocation of funding, positions, promotions, etc. Certainly where it counts, you don't see it reflected. I think most people I go to school with would probably agree with that.

One of the biggest things—Dr. Bourgeault brought it out too, and I have definitely experienced it—is that women tend to perform more mentoring activities. Our success in academia comes down a lot to paper publications. That is weighted so heavily, and it's less so for other ways that we service the department and service the faculty as a whole. Something like that is a very big thing that needs to be addressed. Put greater weight towards those, which are very important roles, and less on this “publish or perish” culture, which is so perpetuated all the time.

I hope that answers your question.

**Mr. Gerald Soroka:** Thank you for that.

I'll also speak to the fact that you mentioned grants. Ms. Bourgeault spoke to that as well, so I'll ask both of you a question, and I'll start off with you, Ms. D'Addario. If you're a female, it sounds like you don't get as many grants or there are certain types of granting situations where you're more of a chaperone, to some degree. Could you give me your experiences where you've dealt with that, both of you, please? I'll start off with Ms. D'Addario.

**Ms. Alexa D'Addario:** It's hard for me to say if I've experienced that necessarily myself, but certainly one study I looked at found that with all things being equal, with similar funding applications, men were more likely to receive the funding than their female counterparts. It was a significant difference, a significant discrepancy.

**Mr. Gerald Soroka:** Could I hear from Ms. Bourgeault as well, please?

**Dr. Ivy Lynn Bourgeault:** Thank you for the question. It's a very important one.

If you look across the pipeline, doctoral fellows, post-doctoral fellows, new investigators who are women are less likely to get grants. It is required for you to get success at those early stages in order to get success later. That, in part, is based on the gender distribution among the disciplines. Women are more likely to be in the social sciences. The Social Sciences and Humanities Research Council of Canada gets less money than the Natural Sciences and Engineering Research Council and the Canadian Institutes of Health Research.

There is a lot of data that has been gathered to show that women in the peer-review process are penalized. Their grants are more likely to be smaller, and they're more likely to be of shorter duration, which makes it very difficult to sustain careers and sustain research teams, which help fuel productivity.

Yes, there are systemic challenges across the board.

• (1235)

**Mr. Gerald Soroka:** Would you say, then, that the universities would claim it's because of the social sciences side? Is that the reason why? How do you think they would try to defend that?

**Dr. Ivy Lynn Bourgeault:** This is a complex phenomenon, and there are a variety of different influences. What happens at universities has an impact. What happens in the tri-council also has an impact. Everybody has a role to play. Some of that will cost money, but a lot of the interventions, which I could speak to later, are more policy-oriented and do not cost money. It's about levelling the playing field.

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

Now, Mr. Collins, you have six minutes.

**Mr. Chad Collins (Hamilton East—Stoney Creek, Lib.):** Thanks, Mr. Chair.

Thank you, witnesses, for your attendance here this afternoon.

Ms. Bourgeault, I'll start with you, in terms of the pandemic. I didn't think we'd hear any information or testimony related to the pandemic in this study. I'm glad you raised this. I was looking for recommendations you feel the committee might want to consider as they relate to course correcting with respect to the issues you've raised. You might have been able to further elaborate on those issues if you had more than five minutes for your opening statement.

Can you expand a bit more on the impact of the pandemic? What do you suggest the committee should consider in terms of policy improvements related to the same?

**Dr. Ivy Lynn Bourgeault:** Thank you for asking that.

Yes, the pandemic has had a differential impact on women in academia, on gender-diverse faculty and on faculty who identify as Black or indigenous. That's very important. There are robust studies showing that impact in terms of grants and in terms of the stress around teaching and the emotional labour, as I mentioned.

There are a variety of different issues that could look at that. Pay transparency—and not just for those over \$100,000—at universities across the different provinces is something that definitely helps. As well, there is promotion transparency with respect to what it takes to gain promotion and any kinds of checks and balances on who is enabled to move from an assistant professor position to an associate professor position to a full professor position. Each of those positions has a salary floor, so as you move up, your salary will go up, but where we find the greatest inequities is at the full professor level.

With regard to the pandemic, there have been a number of really good recommendations about shifting institutional norms and transparency around gender work and care work, including, for example, providing faculty who have care demands more research and teaching support—and those could be care demands for older adults or for children—waiving non-essential academic service for those with significant caregiving demands, and encouraging a community response in terms of faculty supports. In that, faculty help each other and basically say, “I don't have caregiving demands, so I'm going to take on a heavier load than those who do.” But there are some academic activities that people simply run away from and they're often left to women to do, and to women in junior faculty positions. That makes it even more difficult for them to get promoted.

I want to make it clear here that this is not just a gender equity issue. This is about knowledge. Women academics and folks from diverse backgrounds ask different research questions. They undertake research in a different way, and there are literally undiscovered countries of knowledge that we don't enable by having this inequity. Diversity in science makes better science, so we should really think about this as what we want in terms of that knowledge.

Thank you.

**Mr. Chad Collins:** Thanks for those answers.

EDI training has become almost the new norm over the last number of years. We would hope it would yield some results as it relates to closing the gap on many of the issues you've raised and Ms. D'Addario has mentioned here today. Given some of the information you and the other witnesses have provided about long-term trends, we would probably all agree that we have a long way to go in terms of closing the gap.

What role, then, does training play in all of this as it relates to policy and making inroads? Whether it's with colleges and universities, the private sector or the three levels of government that are all grappling with these issues, what recommendations do you have around training, whether it's EDI training or otherwise?

• (1240)

**Dr. Ivy Lynn Bourgeault:** I'm so glad you asked that question, because I think a lot of people feel that if we just have some training, we'll fix this.

Now, it depends on how training is integrated. If it's sort of a one-off, it doesn't have the impact. In some cases, it can have a negative impact because the people who have undertaken the EDI training say, “I'm done. I'm fully versed in equity, diversity and inclusion.”

We have to understand that we have been socialized into many of these ideas, especially around care work, from our birth. That is all of the stuff that we need to unpack. I think we need to reach back into high schools, into universities for undergraduate and graduate training, and all across.... We need a multiple interventions strategy that includes training but much more transparency and accountability, so that when decisions are made about what the starting salary is.... There's also really good data to show there. Where you get on the salary grid affects how you proceed across the salary grid. There's really good data to show that. Women are less likely to get higher salaries, even if they ask for them—even if, as they say, they “lean in”.

Again, this is not about fixing women; it's about fixing the structural system, and we can do that at different levels with a variety of different interventions.

**Mr. Chad Collins:** Thank you for that.

This is my last question, and I have less than a minute now.

I always like to compare us to what the provinces are doing. There's a lot of overlap with many of the services that we provide. Could you provide some comment in terms of which provinces have made inroads and the policies they've adopted to achieve those gains?

**Dr. Ivy Lynn Bourgeault:** If you look at Ontario in terms of the salary sector transparency, this is something that could be adopted. I think the federal government can work in partnership with the provinces to figure out the promising practices and how we spread and scale those. There have been provinces that have really tried to implement it across universities, rather than have every university undertake a pay equity study. I think that would be another good thing to do.

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

[Translation]

Mr. Blanchette-Joncas, the floor is yours.

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

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

My first questions will be for Ms. Ivy Lynn Bourgeault.

I have no doubt that, like me, all committee members recognize the concerning findings regarding wage inequities in universities across Quebec and Canada. Studies show that women earn less than men, and that members of various minorities have a harder time competing. This is obviously a situation that deserves society's consideration.

However, to me, there is an obvious fact that no one is talking about, but that cannot be ignored: professors' salaries are decided by the internal administration of each university, which is protected by an important principle we call academic independence. Therefore, I am concerned about this study, which prompts the federal government to examine decisions taken by university administrations. If we subject universities to government authority, that could quickly become a slippery slope.

Our universities must be places of intellectual abundance. They must know they are safe from reprisals or interference from political powers, so that researchers can acquire and produce knowledge in all fields. That is what drives the advancement of our society.

In light of this preamble, how do you see the principles of academic independence and pay equity reconciled for members of university faculties? How do you propose the federal government intervene to promote pay equity, while respecting the principle of academic independence?

[English]

**The Chair:** Whom is the question for?

[Translation]

**Mr. Maxime Blanchette-Joncas:** It was for Ms. Ivy Lynn Bourgeault.

[English]

**Dr. Ivy Lynn Bourgeault:** I'm going to start with the last comment you made and go backwards from that.

You say to create knowledge in all fields. Well, I've made a case that we are not creating a level playing field to create knowledge in all sectors. Women do ask questions differently. Black scholars ask questions differently. There are areas where there is not a level playing field. If you want to start on the premise that we need to create knowledge in all fields, then we need to create equity across those different boundaries.

Yes, university independence is a factor, as you note, but universities are not completely independent. They are regulated from a provincial/territorial level, and because universities receive federal funds, they have to comply with employment equity. These are the ways in which there are constraints on university independence. We receive public funds from the provinces and territories. We receive funds from students in terms of fees. We received funds from the federal government vis-à-vis the tri-council agencies.

For those reasons, there has to be accountability to equity as a principle.

• (1245)

[Translation]

**Mr. Maxime Blanchette-Joncas:** Thank you very much for that clarification.

If I understand correctly, the federal government can intervene where it contributes monetarily. For example, it allocates funding for research chairs, including through the Tri-Council Agencies, which are the Natural Sciences and Engineering Research Council of Canada, the Canadian Institutes of Health Research and the Social Sciences and Humanities Research Council.

What we understand concretely in the current situation is that there are forms of iniquity. What are your recommendations to the federal government? How can it intervene in public policies or in its programs to restore a true form of equity?

[English]

**Dr. Ivy Lynn Bourgeault:** You raise some very important questions.

I think it is through the research funds. There are other ways that universities receive federal funding support. In some cases, that's directly from different government departments like Employment and Social Development Canada or Women and Gender Equality. There are a variety of different government departments, as well as the tri-council agencies, which are somewhat at arm's length from the federal government, but they are still federal funds.

There are other ways, through the application of employment equity principles, that it can be influenced. It can help support transparency and accountability around pay differentials and what everybody makes. Why is it just in Ontario that we have public sector salary disclosure beyond \$100,000? Why don't we have that widely? Then the data would make it very clear that there needs to be accountability with these inequity issues.

[Translation]

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

Let us get back to what the federal government can do. What are your recommendations? What programs do you suggest we modify? What are your recommendations in the event legislative changes become necessary? To what extent can the federal government really intervene with regard to the wage gap in universities?

[English]

**Dr. Ivy Lynn Bourgeault:** Well, to a certain extent, it's not that we need a new act. We need to enforce the legislation that is already there. That could be done with a little bit more energy and enthusiasm on behalf of those who are not in a position of inequity. Showing by example is always another good way in terms of equity across the public service and how that can be applied in the university sector.

Those would be some examples: enforcing the legislation that you have, really following the money, and having transparency in how that money is funnelled and the inequity of how it's being transferred.

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

We have Richard Cannings for the next six minutes, please.

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

Thanks to both witnesses for being here today.

I'm going to start with Ms. D'Addario. It's always good to have another species-at-risk biologist before us here. It was my field before I went into politics 10 years ago.

You spoke of a lot of things, but one thing you mentioned was occupational segregation. I think I know what you're referring to there, but I'm wondering if you could expand on that, for the benefit of the committee, and on how it affects women in the sciences.

**Ms. Alexa D'Addario:** Definitely. Basically, there is the notion that men and women tend to, on average, choose different professions or fields of research. This absolutely can contribute to where funding is allocated to a significant degree. According to the Statistics Canada data I was looking at, it accounts for maybe one-third, or about that. Does that answer your question?

I will say that one of the things that have helped to narrow the gap is that you see less segregation. People do choose a variety of professions, and there's less of "this is what women do, and this is what men do".

• (1250)

**Mr. Richard Cannings:** Thanks.

Dr. Bourgeault, perhaps you could comment on that as well. I have another question for you as well.

**Dr. Ivy Lynn Bourgeault:** I'll just comment briefly.

You should think about occupational segregation as being hand in hand with the pay inequity we're seeing. It's not just about choosing different pathways. It's also about being channelled into different pathways. It's about how comfortable or how uncomfortable.... Sometimes you talk about chilly climates that are created when you're the only woman, or you're the only person who's Black or who identifies as indigenous in particular environments. It's about your mental health in staying in those environments. There's choice, but lots of those choices are constrained, and in certain cases you're channelled. The occupational segregation that we see among the social sciences, natural sciences, engineering and health is very impacted by these different levels of equity.

Thank you.

**Mr. Richard Cannings:** Right.

Ms. D'Addario brought up this issue in the questioning. We think of universities as places of learning, where young people go to gain knowledge and go on to their careers, yet, as Ms. D'Addario pointed out, universities put a lot of emphasis on research rather than teaching. When I worked at UBC, I had a friend who won the president's medal for best teacher of the year, but was then refused tenure.

Could you comment on that? Because I may be running short on time, can you also talk about what you mean by "academic housework"? How does that come into this conversation?

**Dr. Ivy Lynn Bourgeault:** Doing undergraduate teaching, having really large classes, having to manage a number of TAs, doing

counselling of undergraduate students about where they want to go and that type of academic mentorship, that is what we call academic housework. That is disproportionately placed on women faculty and junior faculty. Those are places that male faculty have often been mentored and encouraged to avoid like the plague. You see a disproportionate care work within academic environments, specifically on teaching.

Yes, we should be places that do research and generate knowledge, but we should also bring students and get them involved in that. That takes time and energy, because students come and they're energetic, but they don't know about a certain thing, and you have to ramp them up. Once you ramp them up, they go off to someplace else. That affects productivity.

Teaching, supervision, all those types of things.... Sometimes you can get an incredible student who is with you long enough and he or she can improve your productivity, but if you have many students and they're typically at an undergraduate level, that is a lot more work in terms of sustainment.

I hope I answered your question.

**Mr. Richard Cannings:** I have one minute left.

I want to get to this pipeline issue. I used to work in biology, in the life sciences. This was back in the 1990s. There was a substantial number of women students in that pipeline, I guess you could call it. Some classes I taught were almost entirely composed of women. Perhaps it's a bit like the social sciences or medicine.

Where are we in that pipeline issue, in those different parts of STEM?

**Dr. Ivy Lynn Bourgeault:** I think it's really important to use a different analogy than a pipeline, because "pipeline" gives you the sense that people are just dropping out because of gravity. In some cases, they're actively pushed out. In the cases of engineering and medicine, there are reports—we haven't done them here in Canada, but in the United States—that there is a high degree of gender-based harassment, including sexual harassment. Women are pushed out. The harassers stay; the women students move. That's incredibly compounded for faculty who are Black or indigenous.

Things like the sticky floor and the glass ceiling are much more apt analogies than the pipeline.

• (1255)

**The Chair:** Thank you very much for covering all of that ground.

Thank you to both our witnesses, Alexa D'Addario and Dr. Bourgeault. Thank you for your testimony. It was very rich in details. If there is more you'd like to submit, please do that in writing to our clerk, and we'll get that over to the analysts.

The next item I'd like to get to, because I know Mr. Blanchette-Joncas has a bit of a time pressure, is to pass the budget for the study on the federal research connected to the People's Republic of China. It's important to pass this so we can get witnesses. We had no witnesses yesterday morning, but thank you to the clerk for doing some tremendous work to stickhandle and get us a couple of witnesses who were excellent in the first panel.

Can we approve this budget?

**Some hon. members:** Agreed.

**The Chair:** Thank you.

We'll suspend for a minute to go in camera to handle our next agenda item, which is the drafting instructions for the Government of Canada's graduate scholarship and post-doctoral fellowship programs.

*[Proceedings continue in camera]*

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