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• (1630)

[English]

The Chair (Mr. Lloyd Longfield (Guelph, Lib.)): Welcome to meeting number 53 of the Standing Committee on Science and Research.

Today's meeting is taking place in a hybrid format, pursuant to the Standing Orders. Members are in person in this room, and we have a witness via Zoom.

I will make a few comments for the benefit of the witness. Please wait until I recognize you by name before speaking. Click on the microphone icon to activate your mike. When speaking, speak slowly and clearly for the interpreters. Also, when you're not speaking, your mike should be on mute. You also have the option of interpretation for your convenience. You can choose floor, English or French.

Although this room is equipped with a powerful audio system, feedback can occur, so be very careful with your earphone and the microphone. Keep them apart so we can prevent injuries to our interpreters. It's great to see our witness using a House of Commons-approved device, which is now mandatory. The sound checks have been done, so we should be good to go on that front. In accordance with the committee's routine motion concerning connection tests for witnesses, I can let you know that the witness has completed all the checks that are needed.

To the members, I remind you to address your comments through the chair.

Welcome to Larry Maguire. It's good to have you joining us as a substitute on the committee. We also have Heath MacDonald joining us as a sub.

Thank you to our witnesses for preparing to be here, both in person and virtually, to help us with the study we're working on.

Pursuant to Standing Order 108(3)(i) and the motion adopted by the committee on Tuesday, June 6, 2023, the committee will commence its study on the use of federal government research and development grants, funds and contributions by Canadian universities and research institutions in partnerships with entities connected to the People's Republic of China. I wish we had a short version of that, but even taking one letter would take me a while.

It's my pleasure to welcome our witnesses today. From Alliance Canada Hong Kong, we have Cherie Wong, who is the executive director. Welcome back to the House of Commons as a witness. Benjamin Fung, welcome to the House of Commons for your first

time. Benjamin is a Canada research chair and a professor at McGill University.

We also have, joining us from the University of Alberta—and I think I heard you say you are in British Columbia right now—Gordon Houlden, who is a professor and also works with the China Institute.

You will each have five minutes for your opening remarks. I believe the five minutes are going to be split between our first witnesses.

You can start with your presentation.

Mr. Benjamin Fung (Canada Research Chair and Professor, McGill University, Alliance Canada Hong Kong): Good afternoon, Chair and committee members.

I am a professor and Canada research chair at McGill University. My research interests include AI, cybersecurity, and malware analysis.

The CCP and Chinese state-affiliated companies have expressed strong interest in my research. In the past years, a large Chinese 5G company repeatedly approached me for different collaborations.

In 2018, a Chinese company attempted to recruit me as a consultant for their AI team. That company offered three times—yes, three times—my salary to work for them as a consultant while remaining a professor at McGill. Out of curiosity, I asked them, “What do you want me to do?” Their response was, “You just need to reply to our emails.”

In Chinese, this recruitment strategy is called “feed, trap and kill”. They first use lucrative offers to attract their targets. Once a professor relies on their funding, they will start making unreasonable requests, including transferring IP rights, getting sensitive data or asking the professor to say something that may not be true.

After I rejected their offer, they contacted me every one or two years to offer different types of collaborations. They also started to approach my graduate students. Fortunately, none of my students have joined the company.

Through the China Scholarship Council, CSC, many international students from China are fully funded to study and participate in research in Canada. Not many people understand that international students face undue pressure in funding agreements with the Chinese government. If the students violate a rule or refuse to follow instructions, the Chinese government will ask their family to pay back the scholarship.

As a professor, I fully understand and respect the importance of academic freedom, but universities have the responsibility to explain the risks to professors who take CSC-sponsored students into their research teams. Some of the risks can be mitigated if university research officers are educated in identifying foreign interference and foreign state entities. I'm happy to share other CCP infiltrations in the academic community. Thank you.

Now I will pass the floor to Cherie.

• (1635)

Ms. Cherie Wong (Executive Director, Alliance Canada Hong Kong): Mr. Chair, I have witnessed Beijing's influence in Canadian academia and the research sector, having heard through ACHK from these concerned community members, and also through my own observations as a graduate student in the sociology and anthropology department at Carleton University.

On the surface, the soft sciences may not directly contribute to Beijing's technological and military ambitions, but what we're seeing is the Chinese party state weaving other regime security objectives such as elite capture, censorship, disinformation and narrative discursion into these areas.

I'd like to stress this important point: While Chinese interference is gaining significant scrutiny in Canada, Beijing will not be the only foreign principal interested in Canadian research. We must create country-agnostic solutions to address vulnerabilities in academia.

Whether they are domestic or international students, Tibetans, Uyghurs, Chinese, Taiwanese and Hong Kongers are experiencing transnational surveillance and fear of reprisal on university campuses. International students have also expressed their concerns that embassies, consulates and their home governments might revoke study permits or scholarships for unfavourable views, actions or inactions.

Academic freedom requires ongoing work to proactively adapt to and meet new challenges as they arise. Canada must strengthen its academic and research environment, which will require whole-of-society collaboration with universities, research institutions, the private sector and student unions. When collaborating with individuals outside of Canada, we must also consider the risk and the intention of our international partners.

Stronger privacy and data protection laws can prevent Canadians' sensitive data from being transferred, exported or sold to foreign actors, and can encourage Canadian universities and research institutions to keep university servers and research data in Canada, as well as to implement stronger cybersecurity measures and policies on campus.

I strongly encourage the committee to review Alliance Canada Hong Kong's previous report, "In Plain Sight", particularly the

chapter "Academic Influence and Vulnerability of Intellectual Property Transfer".

The Chair: Thank you very much. You might want to include that and send it to the clerk so we can have it on file.

We'll go to Professor Houlden, from the University of Alberta, for five minutes, please.

Mr. Gordon Houlden (Professor and Director Emeritus, University of Alberta - China Institute): Thank you very much.

Chair, I intend to use my full five minutes, if that's possible. Don't hesitate to cut me off, of course.

I wish to thank the chair and the members of the committee for this opportunity. It's always an honour to speak to our House of Commons.

The topic of research security has gained in profile and significance in pace with the rise of the PRC to global status as a near peer to the United States in terms of national power. The reality that China is a potential adversary to Canada, combined with China's sharply different political system, requires that attention be paid to risks that may arise from the leakage of Canadian intellectual property and know-how from our leading post-secondary institutions and corporate research laboratories.

In May of this year, I presented to the Government of Alberta a comprehensive confidential report on academic research security, which they had commissioned and which took several months of research. The subject, as you know and as you've already heard this morning, is complex, as is often the case in international relations, and our G7 allies have also paid much closer attention to this issue as well.

However, a policy response requires careful examination and thought in order to avoid unintended consequences. In academic relationships with China, the emphasis should be on the protection but also the promotion of Canadian interests. These interests include advancing Canada's S and T prowess, while protecting and safeguarding our research accomplishments.

Now in my 37th year of full-time work on China as both a diplomat and an academic, I am wary of simplistic approaches towards a state as complex as China.

China now graduates roughly twice the number of university graduates as the United States, but approximately eight times as many STEM graduates—science, technology, engineering and mathematics. These numbers, projected over several years, have given the PRC a world-class research capacity, further bolstered by the network of private high-tech firms and state and corporate research laboratories. That advantage will grow.

Chinese universities and research labs are lavishly supported with state funds. We see the PRC's S and T development perhaps most dramatically in the Chinese space program, with a planned lunar base, a permanent earth-orbiting space station and Mars missions, but Chinese health research is also one of the factors behind the reality that China's life expectancy now exceeds that of the United States. Several decades ago, in Hong Kong, where I was serving in our mission, my son's use of his hand was restored after an injury by an application of the early PRC development of microsurgery techniques, which are now in broad international application.

The point is that we need to draw from China as much advanced knowledge as possible while minimizing risks associated with sensitive technologies that either involve security risks to Canada or are needed to protect our own accomplishments from theft. My premise is that cutting off all federal funding to co-operative research with China risks isolating Canadian researchers from key S and T developments within China to the detriment of our own research, particularly if we are not in alignment with our allies.

The tricky part is not whether we should fund projects in co-operation with Chinese researchers, but whether the co-operation is, in each case, in Canada's net interest. In my opinion, the Canadian government, led by ISED, has the capacity to lead on the evaluation of funding proposals with the involvement of CSIS, GAC, DND and other agencies and also taking outside advice from our own researchers and our allies as necessary.

What is urgently needed, I believe, is the development within ISED of a list of problematic PRC entities—and this may already be in process—such as the PLA-dominated national University of Science and Technology, where research collaboration carries clear risks. This list of problematic research should be paired with a list of problematic research topics that would exclude any shared research on those topics no matter the Chinese partner.

Our allies are doing this. When I called on the U.S. State Department in Washington in late 2022, I was told that the overarching U.S. government approach to scientific co-operation with China was to “promote and protect”: that is, to continue to promote academic research with the PRC, but to be vigilant in protecting U.S. research and researchers.

The U.S. National Institutes of Health, the largest funder of medical research in the world, has not cut off funding of joint U.S.-China medical research. What they have done instead is implement controls on the nature of research and administrative measures to ensure that U.S. and PRC researchers comply with NIH regulations, because there have been cases where this has not been the case.

• (1640)

In Europe, Germany, France, the U.K. and the EU itself have not stopped research co-operation with China. They have, rather, proposed or implemented measures to reduce risks involving sensitive technologies that are key to either European security or the health of European research institutions and high-tech companies.

I commend to you the excellent—

The Chair: I'm sorry. I'm going to have to cut you off right there.

Mr. Gordon Houlden: Absolutely. I'll stop right there.

Thank you, Chair.

The Chair: We almost got to the end of your presentation. Hopefully, we can work that into some of your answers. Thank you.

Thank you to all of our witnesses for getting us going on this.

Now I'll turn it over to Corey Tochor from the Conservatives for six minutes, please.

Mr. Corey Tochor (Saskatoon—University, CPC): Thank you so much, Mr. Chair.

To the presenters, thank you for being here today.

I'm going to ask a series of questions. Everyone is welcome to provide their answers in a written brief if they don't get a chance to answer the questions here today.

Benjamin Fung, do you think we need a foreign agent registry in Canada, yes or no?

Mr. Benjamin Fung: Yes, definitely. A foreign registry would help.

Mr. Corey Tochor: Given the obvious urgency of this issue, do you think the federal government is moving quickly enough to establish a foreign agent registry?

• (1645)

Mr. Benjamin Fung: I believe it is already being actively discussed at different levels. Whether it's fast enough, I'm not sure.

Mr. Corey Tochor: In your testimony, you talked about the analogy of “feed, trap and kill”. You experienced a bit of this when there was an offer of financial compensation three times your salary. Is that the “feed” part?

Mr. Benjamin Fung: That's the “feed” part. I see other professors falling to the other two steps.

Mr. Corey Tochor: Talk about the next two steps in a bit more detail.

Mr. Benjamin Fung: It's a typical strategy that the Chinese government often uses to recruit researchers. Once a professor has the funding, they will start expanding their team. Let's say they will hire more Ph.D. students and more graduate students. A Ph.D. student typically takes four to five years to complete their degree. After one or two years, as professors, we rely on that funding. We rely on that company to keep providing that funding; otherwise, we cannot support the Ph.D. students. That's the moment. That is the trap. That's the moment when the company or the CCP government may ask the professor to do something that may go against their own will.

Mr. Corey Tochor: Now, unfortunately, the last term was “kill”.

Mr. Benjamin Fung: I don't really mean harming the professor, but basically saying something that is not true or ruining the reputation of the professor by saying something that is not true.

Mr. Corey Tochor: Former CSIS counter-intelligence officer Michel Juneau-Katsuya said that if the national counterintelligence office promised in the budget this spring ever gets off the ground, it should report directly to the House of Commons rather than to a minister. It's a bit of inside baseball, but the difference is that the House of Commons represents all 338 ridings and all of Canada. A minister will be tied to reporting to his or her boss: the Prime Minister.

Would you agree that if this gets off the ground, it should report to all members of Parliament, not just to the minister and the party of the day?

Mr. Benjamin Fung: I'm not familiar with the internal process, so I cannot really comment on that. However, for CSIS, I would like to see more action, not just a one-way direction of collecting information.

Mr. Corey Tochor: During the last election, we heard a lot about WeChat and some of the communications going on in that platform.

Are you on that social media platform?

Mr. Benjamin Fung: I don't use WeChat, but I have looked into it. Some of my research is working on that direction of disinformation.

We see that during election times, some of the WeChat groups are very active. Many WeChat groups are just ordinary WeChat groups. They talk about going to dinner, going to a barbeque or other leisure activities. During election times, sometimes a different group of people will emerge and start talking about, promoting or going against specific candidates. That's what we have observed in the group.

Mr. Corey Tochor: I understand that you're an expert in cybersecurity and data mining is one of your areas of expertise.

Are there risks to students' academic privacy from a PRC presence on campus?

Mr. Benjamin Fung: It depends. When students arrive in Canada.... It depends on where they get their funding. If they are CSC-sponsored, then I would say the risk is higher.

It depends on the topic they're working on. For example, I sometimes do take students from China. I have an array of projects that I can choose from. I can carefully assign a topic to different types of

students. This is what I'm doing. For other professors, I'm not sure. When they have CSC-sponsored students, some of those students work like regular graduate students from Canada. I don't see the difference between them.

Mr. Corey Tochor: Have you seen agents or employees of Huawei on campus, interacting with staff or students on different research projects?

• (1650)

Mr. Benjamin Fung: Yes. Several years ago, they were much more active, and many activities like engineering and computer science were directly sponsored by Huawei. They were making some unreasonable requests to some of their activities' organizers. Recently, I've seen that the students basically reject that sponsorship.

Mr. Corey Tochor: But nothing directly with you.... I don't want you to expand on the Huawei connection with other professors or students, but with regard to your example, after you—

The Chair: Actually, we're just at time now.

Mr. Corey Tochor: Can I have 20 seconds?

The Chair: No, we're at time.

Mr. Corey Tochor: Okay.

The Chair: Thank you.

Thank you for the answers as well.

Now we'll turn it over to Charles Sousa, from the Liberals, for six minutes, please.

Mr. Charles Sousa (Mississauga—Lakeshore, Lib.): Thank you, Mr. Chair and colleagues. I won't be on this committee going forward, but I do want to express my thanks to all of you for our discussions and debates.

I do want to thank the witnesses for being here today and coming forward.

I have two questions. I'll start, if I may, with Professor Houlden.

As you've mentioned, Professor, this is a rather complex issue. It is important that the research ecosystem be as open as possible and as secure as necessary. Our government, certainly, has been working towards improving research security in Canada for some time. In 2021, Innovation, Science and Economic Development Canada released its “National Security Guidelines for Research Partnerships”. This took aim at supporting researchers “to integrate national security considerations into the development, evaluation, and funding of research partnerships.”

Can you reaffirm some of your concerns, then, with how we proceed to limit the extent of collaboration with certain countries, to be agnostic yet at the same time provide for research that is open and allows us to benefit from the degree of expertise that exists in other parts of the world?

Mr. Gordon Houlden: Well, resources and time are always limited.

My point would be that I'm not sure you can always be agnostic. It's pretty clear that the PRC, North Korea, Iran and Russia pose risks that others do not. Hence, I'd argue that focusing on the most immediate problems is rational.

Our collaboration with China is for a bunch of reasons, mainly the fact that the Chinese have advanced so quickly and so far. China will probably occupy the lion's share. I'm not aware of any research collaboration with North Korea, for example. There's virtually none with Iran and very little with Russia in the current circumstances. I think you have to pick your targets.

The challenge is that one must, in my view, respect the academic autonomy of universities. Where there's a legitimate security concern—and there are legitimate security concerns—is where the Government of Canada legitimately focuses. When it has the funding control, it should certainly exercise it where it believes it's not in the net interest.

I would emphasize that there are research topics—be it climate change, environmental concerns or health research—where there is clear benefit to Canada from our researchers' working with Chinese researchers. If you cut that off completely, then one of the things you're going to find is that some of our best researchers will simply decamp to the U.S. or Europe, where there are no such barriers or where at least the barriers may be somewhat more liberal. Working with our allies to find common approaches reduces that risk.

There's also the bigger issue of isolating China. China went through very long periods historically, including up to the end of the cultural revolution.... The movement of students back and forth, I think, helps to leaven and open Chinese society. The Chinese students I deal with on a regular basis are far more knowledgeable of the outside world and outside ways of living than was the case before.

Mr. Charles Sousa: Thank you for that.

Now I want to turn it over to Professor Fung and Ms. Wong.

This is obviously a very serious issue. What you've highlighted today in terms of the security threat and what is not a threat... You've actually identified and have said that there's interference being engaged at this moment by some of your colleagues who are targets, as you have also been. That's a very serious issue.

I've also heard—from members of the diaspora, members of the Chinese community and others who are students and so forth—that there's some degree of concern and worry about racism, discrimination and some biases against certain researchers of Chinese origin. As a consequence, many are calling for a full boycott. They're calling for what seems like maybe an ineffective method, but some are saying to cut everything and not to deal with certain individuals from China.

Can you elaborate on how you balance the innocent students who are coming here, who really want to do their best and who have good intentions with this concern about undue influence and undue harm?

• (1655)

Ms. Cherie Wong: I think what you mean by a country-agnostic solution is the start of an anti-racist approach in addressing national

security concerns when it comes to academia. As I said, there is also other regime security in academia that Beijing is interested in advancing.

I think that, for one thing, we need to look at the conduct of the companies, individuals and entities we collaborate with. For example, if an entity seeking to collaborate with a Canadian researcher is actively violating international human rights law, then that should be a signal that maybe we shouldn't collaborate with that individual. That's what I mean by looking at the conduct rather than the country of origin.

Another issue, when it comes to international collaboration, is that there are privacy laws and data laws that are different from Canada's, so we can collaborate with a Chinese actor who has obtained data legally in China, but the way they obtained the data may not be legal in Canada. That then creates this kind of moral grey area in which we have to ask whether it is ethical for Canadian researchers to continue to collaborate with this individual, who has obtained data possibly through means that are not legal in Canada but that would be elsewhere. How would that research data be stored? Is it stored in China or is it stored in Canada?

All of those factors come into play when we talk about how to balance that act of academic freedom to ensure there is free and transparent collaboration, in which researchers are empowered and acknowledge—

The Chair: Thank you very much.

We'll now turn it over to Maxime Blanchette-Joncas for six minutes.

[*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 today.

My first question is for you, Professor Houlden.

There is no doubting your experience, since you've been working in Canadian foreign affairs since 1976. You also talked about your tenure at the University of Alberta.

I want to make sure I understand the situation, and I want to make sure my colleagues and the public understand it, too. On a scale of 1 to 10, how concerned should we be about Chinese interference in Canada's scientific research ecosystem?

[*English*]

Mr. Gordon Houlden: Thank you very much for the question and the kind comments.

On a scale of one to 10, I would presume.... Here again, I would say you have to look at the national issues. The risks of research collaboration with the United States or France are not the same as with China or Russia. I'm not sure that the agnostic approach fully works. I would assign to the case of China probably about an eight, but that does not mean that the door is closed or should be closed; it means care is needed.

I would recommend this excellent report from MIT. It came out in November of last year. They had nine eminent scholars and they took almost 18 months, I think, to write the report. It's available online. There's one line that jumped out at me and it is as follows:

But we believe that the United States has more to lose than gain if broad, sweeping restrictions on academic research are implemented that degrade or dismantle the U.S. system of open science.

This is an organization that, in the same document, talks about classified labs that work for the Department of Defense and that are basically locked to all foreigners. You can walk and chew gum at the same time. You can do essential, useful, meaningful research, collaboration on health and environment with China. You can also try to keep that door tightly locked on sensitive technology.

[Translation]

Mr. Maxime Blanchette-Joncas: Thank you, Professor Houlden.

I understand the nuance you're making about competitiveness and the mitigation of national security risks. I want to hear more about that.

Margaret McCuaig-Johnston, a senior official at the Natural Sciences and Engineering Research Council, NSERC, said that we should have a set of rules that would apply in scientific collaborations, including with researchers from authoritarian regimes like China and Russia. So it would be a differentiated approach.

What do you think of an approach like that? Also, what criteria should guide the categorization of countries?

• (1700)

[English]

Mr. Gordon Houlden: Thank you very much.

Yes, Margaret McCuaig-Johnston previously served as a senior fellow of the China Institute at the University of Alberta. I know her well.

I think that clearly a category one would include our NATO allies and those closest to us, where there's no risk. There is a group of independent democratic countries, largely in Europe but in other continents as well, with which I think concerns are modest, and then there are the countries where, because of their size—in the case of China—and radically different political systems, non-democratic, with larger militaries, caution is more warranted.

That's on a national basis, but even within that, you'll have to differentiate between the types of research. It's quite feasible that a Canadian researcher might be working with a German researcher who, unbeknownst to the Canadian researcher, has a Chinese partner, so caution is needed as well. If I were the Canadian researcher, I would ask, "Who are your partners? Who else are you working

with?" Once it's leaked from that lab in Canada or from the intellectual property of the individual, it's harder to control where it goes. However, there are issues of health, child health, aging, biodiversity, where it is clear that it's in the planet's interest, as well as China's and Canada's, that we collaborate and advance.

That's where there has to be this differentiation, not just on the country, but also on the subject matter, where governments, universities and researchers have categories of high risk, medium risk and no risk, and where the no risk category may have great benefit for all parties.

[Translation]

Mr. Maxime Blanchette-Joncas: Thank you very much, Professor.

You mentioned earlier that, on a scale of 1 to 10, our level of concern about Chinese interference in science in Canada should be 8.

Based on your expertise, can you tell us how Canada compares to other G7 and OECD countries in terms of national security for research partnerships?

[English]

Mr. Gordon Houlden: Well, I think things are evolving very quickly. I could say the Americans have been in the lead, in the sense of identifying risks and dealing with them. They have the most to protect, be it in the military or science or technology, and they have very large national institutions. But again, in Washington, from meeting with eight different individuals from various agencies, I know they have also worked very carefully to respect the autonomy of universities, to have a very light touch when possible.

They believe, as I believe, that there are too few North Americans studying in China. We need to understand that place. It's going to be a dominant part of the 21st century. We ought to have more researchers there. Many of these people can go without risk, depending on what the subject matter is. Again, if it's investigations of paleontology, there's zero risk, but you gain a knowledge of how the Chinese work and think. The French and Germans have just woken up to the risk.

The Chair: Thank you.

I wish we could go on, but just to balance time fairly, I'm going to turn to Richard Cannings from the NDP, please.

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

Thanks to all the witnesses for being here today.

I'm going to start with Ms. Wong and her comment about this country-agnostic approach. After listening to Mr. Houlden, I'm wondering if maybe it's a bit of semantics that is the difference here. I assume that by "country-agnostic" you do not mean that China is out. You would say, let's look at the research, the topic of the research, the entity that you're dealing with—as Mr. Houlden was saying—and look at the level of risk and use that. Is that the kind of approach you're talking about, rather than just putting all the countries into different boxes from the start?

Ms. Cherie Wong: Yes, in a way, but I think that even if we're collaborating with a U.S. entity that has known human rights violations, our reaction should be the same as we would react to collaborating with a Chinese entity that has human rights violations in its record. That's what I mean by country-agnostic. We should be looking at the conduct of the activities that are being taken by the entity we're collaborating with or potentially collaborating with.

Mr. Richard Cannings: Is that conduct always known beforehand? If this is a new agency or a new researcher, how do we assess that?

• (1705)

Ms. Cherie Wong: Another issue is that a lot of these malicious actors will mask their affiliations. They will purposely hide that they're affiliated with a state entity or military entity, so it requires a bit of research and work. I think this is what Professor Fung was saying, that university research offices could take on a part of that responsibility and vet which entities are at risk.

However, ultimately, nothing would beat a federal guideline on who these entities are that have state and military affiliations, and they would provide that information to state and military entities for their use.

Mr. Richard Cannings: Professor Fung, you talked about some of the lures that these entities were using to try to entrap people, and a lot of that involved large amounts of money, or certainly more money. Would you say that that's part of the solution? I can't imagine it's the whole solution, but is part of the solution for Canadian researchers to be better funded and for Canadian students to be better funded so that the lures that are dangled in front of them aren't quite so attractive?

Mr. Benjamin Fung: Yes, definitely. One way to tackle this is to increase the research funding so that Canadian students, local students have more opportunities to do active research in Canada.

Another way to tackle the problem is to inform the professors—basically, raise the awareness of the engineering and science professors. I see that Public Safety has safeguarded science programs. It's trying to raise awareness at universities. One of the meetings I attended when they came to McGill had an excellent presentation, but I saw that the attendees were not really from engineering and science. One way to tackle the problem is, I would say, to educate the professors, raise awareness and let them know the potential risk. That's very important.

Another level is at the research office. We need to train the research officers to identify what the potential foreign interference entities are. Sometimes this may require additional information from the government agencies.

Mr. Richard Cannings: I'll now turn to Mr. Houlden.

You talked about how ISED could lead this program of assessing the risks, with CSIS and GAC also involved. Can you elaborate on the capacity of ISED to do that? You felt that they could take that on, but what is needed and what sort of information would they have to gather?

Mr. Gordon Houlden: Thank you, Mr. Cannings. I must note that I am actually speaking from your home riding in Penticton at this moment. I am one of your constituents.

Your question is important. ISED is engaged in this process and has staffed up a lot of new people. I met many of them when I was in Ottawa. It is also putting funding into the major research universities to create research security positions, which are funded both by the university and by Ottawa and are often staffed by people with security backgrounds, including some from CSIS. It's a huge step forward. What a different place from where we were.

However, what I'm still waiting for is a list of problematic institutions abroad—some of these will be Chinese and some of these will be Iranian or Russian—and a list of problematic areas. The tricky thing is that those areas are constantly changing. That which is cutting-edge and potentially dual-use today may be commonplace and in everything you touch in a few days, so that work must proceed at pace.

The other problem, which I identified in my research for the Government of Alberta, is that while the federal government and ISED... The Government of Canada controls the funding that flows to researchers, but the provinces control the universities by power of the purse. There must be, in my view, a very close collaboration between the provincial and federal governments facilitating a common approach, because otherwise you have this powerful university that may or may not take advice from the federal government, and the federal government has.... I believe the federal funding for research in the universities—I'm guessing here—is in the range of about 20%. The bulk of the funding comes from the university itself.

• (1710)

The Chair: Thank you very much.

I left a little bit of extra time because of the reaction of the committee to your being a constituent. It's always good to have constituents in the room. I mean, everybody is somebody's constituent.

Michelle Rempel Garner, welcome to our committee. It's great to have you here. With your experience, I look forward to your being a member of the committee.

You have five minutes, please.

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

The way I'd like to spend my time.... Just quickly, by way of background, I did manage the sponsored research portfolio of a major Canadian university. When Dr. Fung talks about the research services office, that used to be this girl here.

I'd like to try to encapsulate some of the recommendations and common themes that have come up in testimony and then get some validation on whether or not we're thinking about this the right way. I think in Canada there are a couple of frameworks that could be applied to the principles you're talking about, and they're not necessarily related.

First of all, there's the integrity regime within procurement, as well as the safe third country agreement. Those two have commonalities in that they are country-agnostic. They're entity-agnostic. The government has set a list of guidelines by which it will do business in procurement, and whether or not, and how, it would apply refugee status.

Would you recommend that any approach that the federal government takes be country-agnostic and focus on quantitative, objective metrics in terms of engagement with countries and entities, and that the list should be evaluated on, let's say, an annual or regular basis?

Go ahead, Dr. Fung.

Mr. Benjamin Fung: I agree that there should be a country-agnostic approach. Yes, there should be some metrics for measuring, but sometimes, you know, for information, that is not sufficient.

Hon. Michelle Rempel Garner: For sure.

Go ahead, Cherie. That's my sister's name, and with the same spelling, too.

Ms. Cherie Wong: Yes, country-agnostic is really important. The entity based on conduct, based on activities that the particular entity has taken on, I do agree that has to be re-evaluated. Once state entities catch on that you're catching on to them, they change their name and they change their affiliation. It needs to evolve with the challenges we're going to face.

Hon. Michelle Rempel Garner: So an ongoing review of eligibility should be a key recommendation for our committee. Okay.

The other thing is that the federal government has tabled national security guidelines for research partnerships. I think that gets us maybe 10% of the way we need to go on this issue. It strikes me that there aren't any enforcement criteria or enforcement rules in this set of guidelines. Do you think any eligibility criteria that the federal government ties to either federal research funding or support for research partnerships should have some enforcement criteria if rules are broken, yes or no?

Dr. Fung?

Mr. Benjamin Fung: Sure. Yes.

Hon. Michelle Rempel Garner: Ms. Wong?

Ms. Cherie Wong: Sure.

Hon. Michelle Rempel Garner: Thank you.

The other thing I know is that right now, where we're at is that there really isn't a way for Canadian universities to determine, in an

ever-changing landscape, what the rules are. I would argue that it's actually impossible for a research services office to make that determination. Do you think it would be an appropriate role for the federal government to take on and develop a list of both countries and entities that are engaging in research partnerships with institutions the federal government would give any support to, which would be subject to a set of rules and regulations designed to safeguard things like national security, prevent intellectual property theft, and the safety of Canadians—that list could be augmented—and that prescribed controls or safeguards would need to be in place prior to federal funding being allocated to that type of partnership, with that system then being evaluated on an ongoing basis?

Is that where your thinking is at for a framework that the government should be developing?

The Chair: You have about a minute left.

Mr. Benjamin Fung: Yes. Sure.

Hon. Michelle Rempel Garner: Thank you.

Ms. Wong?

Ms. Cherie Wong: Yes, that would be the ideal way we could move forward.

Hon. Michelle Rempel Garner: That's amazing.

Do you think it's important for the granting councils, such as NSERC, CIHR, CFI, etc., that this type of framework be inserted into their eligibility criteria for institutional eligibility once it's put together by the federal government, yes or no?

• (1715)

Mr. Benjamin Fung: Yes.

Hon. Michelle Rempel Garner: Ms. Wong?

Ms. Cherie Wong: I've never actually submitted a tri-council research grant, so I would not be at liberty to say.

Hon. Michelle Rempel Garner: Institutional eligibility is important. In a framework, I think there needs to be some tie-in to institutional eligibility.

With the "National Security Guidelines for Research Partnerships", do you think the government needs to significantly augment that particular document, given that it doesn't have these enforcement timelines?

The Chair: You are actually over time at this point.

Thank you, both, and thank you for the questions.

Now we'll go to Lena Metlege Diab for five minutes, please.

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

Thanks to our witnesses for being here.

We're talking about research, and obviously our committee was founded on the science and research agenda because we recognize how important research is to Canada. We're also talking about universities. Before I became a federal parliamentarian, I was a provincial member in my own province. I recognize the significance and the importance of the provinces and the role they play with universities and colleges in each of the provinces.

Professor Fung, you are from McGill. With respect to the Province of Quebec, obviously there's a lot of autonomy and independence in how it deals with its own educational system. Can you tell me how Quebec, for example, the provincial government there, works with universities to inform and disseminate information to your institution or your researchers about the risks? What role do you see provinces having vis-à-vis Canada, for example?

Mr. Benjamin Fung: The provincial [*Inaudible—Editor*] also has research funding that we can apply for. Sometimes a foreign enterprise may try to approach a professor to apply for a grant, like one from NSERC, so the same level of security, just like for the research security centre, should be enforced at the provincial level. That's what I would say.

Ms. Lena Metlege Diab: Ms. Wong, you are a graduate student, and you are here in Ottawa. What have you seen in your graduate work, based on your personal experience and what other professors or students have shared with you?

Ms. Cherie Wong: I am very lucky. I have a very supportive group of professors and students around me, but I don't think that many of my colleagues have had similar experiences. Students have expressed that they are worried that they're not going to get certain scholarships in Canada because their views may differ from the views of the professors who are issuing the grants. This is a particular worry for individuals like me who are working in sociology. My research is focused on transnational repression, so it's quite sensitive in that sense. If I were to apply for a research grant, I would worry that, if a professor has pro-Beijing views, I would not get a scholarship issued to me. I think that's a very similar experience for individuals in the soft sciences when they are applying for scholarships and grants for their own research.

Ms. Lena Metlege Diab: Thank you for that.

Professor Houlden, you're in Alberta. I know you hold many hats, but what have you seen from your perspective in that province, for example?

Mr. Gordon Houlden: Well, I can speak about the provinces more generally because I did a survey in the course of preparing my study for the Government of Alberta this year.

There are a couple of things. Number one I may have already mentioned, which is that the bulk of the research funding is not from the federal government. The federal government can come up with a whole set of criteria and be absolutely rigid, but the material may still be going out the door. What's needed.... The provinces, except for the largest provinces.... Quebec, Ontario and B.C.—perhaps Alberta—may have the resources to do analysis as to the security risks. However, this is being done to the tune of billions of dollars of taxpayers' money by the federal government, agencies such as CSIS, CSE and other agencies of government.

To me, the answer is not 13 security agencies doing analysis. The answer is close collaboration between provinces and the federal government, sharing knowledge and coming up with common approaches. That, to me, is the best. Otherwise, if one province is tough and another is lenient, for example, foreign governments or agencies or individuals will go to the place of least resistance and take advantage of that slacker attitude. It's only if you have a uni-

fied national view of universities that's adopted with the full support of the provinces, in my view, that there's—

• (1720)

Ms. Lena Metlege Diab: I can't agree with you more. Do you see that happening at any level?

Mr. Gordon Houlden: Everything in federal-provincial relations is difficult, and I accept that, but I would have given up decades ago if I thought that was the case. The provinces and the federal government can still collaborate, and it's in their interest to do so.

As for individual provinces, some will be more forward than others. I'm not saying it's a question of simply taking direction from Ottawa. It's a means of sitting down on organized committees that meet on a regular basis to come up with common approaches, to share those approaches, to frustrate our enemies and to promote our interests.

Ms. Lena Metlege Diab: That's terrific. Thank you.

The Chair: That's great. Thank you very much. That was a great discussion.

Now for two and a half minutes, go ahead, please, Mr. Blanchette-Joncas.

[*Translation*]

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

I'll continue with my questions for Professor Houlden.

You mentioned earlier that we should be concerned about Chinese interference in scientific research in Canada. I asked you how we compare with other countries. We know that the U.K., the U.S. and the Netherlands, in particular, have already taken steps to stop China's interference.

How do you think we compare to other OECD and G7 countries?

Could we adopt good practices here that are being done elsewhere?

[*English*]

Mr. Gordon Houlden: Are we talking about research security here or political interference?

[*Translation*]

Mr. Maxime Blanchette-Joncas: I'm talking about national security for research partnerships.

Mr. Gordon Houlden: Right. Thank you.

[*English*]

We can always learn from our counterparts. I was a Canadian official for many years, but I never thought that the things Canadians did were always necessarily the very best. I wanted to find the best from elsewhere.

Some of those countries you've mentioned are of a scale that is more applicable to us—be it the Netherlands or even France or the U.K. The U.S. is in many ways a special case. Australia is an interesting case. All of these countries, with the partial exception of the United States, are quite new to this game. If we go back a decade, we find that particularly vis-à-vis collaboration and co-operation with China, there were very few concerns. Yes, if something was on our export control list, then that's fine. If it was a weapons system, then fine, but apart from that... What's happening now, though, is that so much research is dual-use. That which can be put to civilian use may also have a military application in communications or a range of things.

I would say we should study carefully what the Netherlands has done. Germany is doing some very interesting things, actually starting even just this summer in terms of tightening the controls. The tightening, I'd emphasize, for each of those countries, as well as for the EU, does not mean no collaboration with China. It means having eyes wide open, doing careful collaboration and looking at where this Chinese researcher is working, at which agency and also at the subject matter. If in doubt, say no and perhaps go elsewhere.

Some of this would require legislation. If you're actually going to force academics not to collaborate with certain entities, you can use the carrot of money, even in federal-provincial things, but actually forbidding a professor from collaborating with a foreign entity would require a whole other degree of intervention that we don't have the tools for right now.

The Chair: Thank you very much.

You mentioned the universities. When Canada U15 and U15 Germany met this summer, I was able to take part in those discussions, and part of our discussion was around security.

I'll turn it over to Richard Cannings for the last two and half minutes on this panel.

Mr. Richard Cannings: Thank you.

I'll stay with Professor Houlden on that last topic about how we manage researchers and research.

If there is a researcher getting significant funding directly from a Chinese entity or any other country, is that where you find we would have to have some sort of legislation to regulate that? If so, where would that legislation live? Would it be federal or provincial?

I'm just curious. It seems a bit of a mess.

Mr. Gordon Houlden: Thank you very much, Mr. Cannings.

It would be a departure from our normal procedure. One of the great strengths, as in that MIT study, is the open nature of science in the United States and Canada. I think you have to tread carefully if you're going to come in with a legislative hammer on universities, which have lots of good reasons to want to be independent and autonomous.

I would rather argue that funding coming in really matters on the question of the subject matter. If the Chinese are helping the Canadian... I happen to know a couple of researchers at the University of Alberta who came up, sometimes with their Chinese collabora-

tors, with a vaccine for hepatitis C that will save, say, hundreds of thousands and perhaps millions of lives. I don't think I really care where that money came from.

If the subject matter is a cutting-edge dual-use matter, that's another thing, and I think that's where it would probably have to be a mix of federal and provincial legislation. I know how sensitive the provinces are, quite legitimately, about education being in their domain. This would be a diplomatic and legislative nightmare, but don't let the perfect get in the way of the good. Sensitizing universities, sensitizing the researchers and sensitizing parliamentarians and the public has advantages and risks, and it is a mix of both—absolutely a mix of both.

One of the great strengths in the MIT study, if you choose to read it, is that it points out how few U.S. scientists have been graduated compared to China, but the secret sauce that the Americans have and that Canada has is all this great talent we harvest from overseas. Chinese, Indian, Iranian and even Russian researcher students come to us and bring their knowledge to us. That's one of the ways we make up for that lack of enough internal candidates for top research jobs.

• (1725)

The Chair: That's great. Thank you very much.

This has been a fascinating discussion this afternoon. I wish we could go on, but we are at time.

Thank you to our witnesses—Benjamin Fung, Cherie Wong, and Gordon Houlden, who is the director emeritus of the China Institute at the University of Alberta. I can see that your service is very valuable not only to them but to our country, so thank you for your service there.

You can submit any information that might have arisen from our discussion today to our clerk, and she'll get it to the analysts. The analysts have assured me that they can find the MIT report that's been referenced a few times here, but if there's any other information, please do send it on.

We'll be suspending briefly so our next panel can come together. We have three witnesses via video conference, who will have to be tested out.

I'll ask the witnesses here to sign out. Thank you for coming. Thank you for signing in and being part of this valuable discussion.

[*Translation*]

Mr. Gordon Houlden: Thank you, and goodbye.

• (1725)

(Pause)

• (1730)

[*English*]

The Chair: Welcome back.

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

We're having a bit of a technical start-up. I can see that one of our witnesses has just rejoined us. Hopefully, the reboot of the computer has worked.

We have two individuals who will be presenting together. It has been agreed to share the time over 10 minutes at the beginning. They are Tracy Smith-Carrier, Canada research chair, tier 2, in advancing the UN sustainable development goals, Royal Roads University, by video conference, and Marcie Penner, associate professor, department of psychology, King's University College, Western University, by video conference.

Also on video conference, we have Visions of Science, represented by Dina Al-khooly, senior director, impact and learning.

Each of you will have five minutes. As I said, the two people as individuals will be working together on sharing 10 minutes between them.

If you're ready to start, maybe I could turn it over to Ms. Al-khooly or Ms. Smith-Carrier, whoever is starting.

• (1735)

Dr. Tracy Smith-Carrier (Canada Research Chair (Tier 2) in Advancing the UN Sustainable Development Goals, Royal Roads University, As an Individual): Thank you very much.

Good afternoon. We are grateful to the House of Commons Standing Committee on Science and Research for inviting us to present today and for facilitating this important discussion.

My name is Tracy Smith-Carrier. I am an associate professor in the School of Humanitarian Studies at Royal Roads University in Victoria, B.C., and the Canada research chair in advancing the UN sustainable development goals. I am here with my colleague Dr. Marcie Penner, associate professor in the department of psychology at King's University College at Western University.

Dr. Penner and I have collaborated to conduct research on pay equity in academia, including publishing a paper on the long-term implications of the gender pay and pension gap on faculty at Canadian universities.

Ms. Marcie Penner (Associate Professor, Department of Psychology, King's University College, Western University, As an Individual): There is a substantial and persistent gender pay gap for faculty at Canadian universities. According to Statistics Canada, in 2023, full-time women faculty earned 7.4% less on average for the same work. The gender pay gap varied by institution, ranging from \$150 a year to almost \$25,000 a year, reflecting a gender pay gap of 0% to 15%.

Momani and colleagues demonstrated that pay gaps also vary by discipline—gender gaps are larger in STEM fields—and showed that the gender pay gap widens as women advance in academia and doubles for women who are deans.

The Canadian Association of University Teachers quantified diversity pay gaps for indigenous and racialized faculty, as well as looking at the intersection with gender. Using 2016 census data, they showed that indigenous university faculty, both men and women, earn 26% less than non-racialized men faculty. CAUT also found that racialized university faculty on average earned 12% less than faculty overall. There was a diversity pay gap for university faculty across all racialized groups, ranging from 3% to 28%. Moreover, the gender pay gap for racialized women faculty in Canada was double that for non-racialized women.

Many Canadian universities have used salary anomaly studies to investigate the gender pay gap at their institutions and have made positive salary adjustments either across the board to all women faculty or on an individual basis. These salary adjustments have not been retroactive at any university. Salary anomaly studies and salary corrections have been driven by collective bargaining between faculty associations and university employers rather than through legislation. Pay gaps still exist at universities, even after multiple rounds of adjustments, because without addressing a systemic bias that leads to pay differences, the gap is reintroduced in starting salaries and promotion and merit decisions.

Dr. Tracy Smith-Carrier: Four factors contribute to the gender wage gap in universities: disparities in starting salaries, differentials in performance and merit pay, differences in the rates of and times to promotion, and incongruities related to parental and other caregiving leaves. Although collective agreements identify salary floors for specific academic ranks, starting salaries largely continue to be negotiated, interpreted by university administrators who may or may not be cognizant of implicit gender bias. Women's experience and performance/merit are often undervalued in academic and other settings. Research has shown that in experiments where an identical resumé is presented, but either with a typical man's name or with a typical woman's name, the candidates with a man's name are judged as more competent and are offered a higher starting salary.

When applying to a national research council for funding, women need more than twice the academic output of men to receive the same competency score. Moreover, men's earnings rise significantly with academic productivity, whereas women's do not. Men are also more likely to be promoted, and women who are promoted take longer, on average, to be promoted than men, despite research that confirms that women are just as likely as men to ask for promotions and raises.

The take-up of parental and caregiving leave has further punitive effects that impact when women start their careers, the breaks they accumulate over their careers, and the decisions they make about when and whether to seek promotion.

• (1740)

Ms. Marcie Penner: The gender pay gap clearly has long-term financial implications for women professors across their careers and retirements, but the cumulative impact has not previously been reported. In our research in collaboration with Dr. Aaron Cecala—now at Brescia University College—and Dr. Carol Agocs from Western University, we estimated the combined effects of the gender pay gap on salary and on employer pension plan earnings across a woman professor's career and retirement, using one Canadian institution as a case study. Taking the gender pay gap reported for that institution by Statistics Canada—approximately \$9,000 in 2020—as a difference between starting salaries, we simulated career trajectories for a woman faculty member and a man faculty member just beginning their careers at the institution, and we calculated the cumulative difference using the institution's salary and pension formulas. In our calculations, we made data-informed assumptions about the expected length of career, age of retirement, and lifespan. We also made a conservative estimate about salary increases: 1% per year, as per Bill 124 in Ontario.

We found that the difference in starting salaries alone, with no difference in time to promotion, led to a gender gap in pay and pension of \$454,000 across a career and retirement if both professors were promoted to associate professor, and \$468,000 if both professors were promoted to full professor. However, men are more likely to be full professors than women; only three in 10 full professors in Canada are women. With the same difference in starting salary, if the woman was not promoted to full professor but her male colleague was, it led to a gender gap in pay and pension of \$660,000 across a career and retirement. Our research shows that only looking at salary leads us to substantially underestimate the long-term effects of pay gaps. In retirement, the gender pension gap translated to a difference in employer pension of \$7,000 to \$12,250 per year—or \$580 to \$1,020 per month.

Our calculations are a conservative estimate of the impact of the gender pay gap at Canadian universities. Importantly, unlike many universities, the case study institution does not have performance or merit pay or make market-value adjustments, which eliminates multiple decision points where bias could be introduced.

Our own work focused solely on gender, because race was not a variable provided in the Statistics Canada data that we used. Our values were based on all women professors combined. We know from others' work that the pay gap for racialized women professors in Canada is double that for non-racialized women, so the long-term financial impact of the gender pay and pension gap for racial-

ized women professors will be larger than our calculations for women professors overall.

Dr. Tracy Smith-Carrier: Here are our recommendations for your consideration.

First, gender pay equity studies will continue to be needed to rectify ongoing wage disparities. These should look at not only differences in pay, but the longer-term impacts of these differentials, including implications for pensionable incomes, both occupational and policy-related. Examples are CPP or QPP.

Second, more research on ways to remedy systemic biases against equity-denied groups in universities and broadly in society will be valuable in helping to meaningfully close the gap permanently.

Third, as it is being recognized and introduced in pay transparency legislation across Canada—including Bill 13 in B.C.—the promotion of transparency in salary negotiations and pay structures is vital to curb opportunities for bias to creep into salary, performance and promotional decisions.

Fourth, seeking to extend pay and pension equity provisions to equity-denied groups is imperative. This requires greater data collection, research and pay equity studies on the short- and long-term consequences not only of wage and pension differentials, but also of characteristics of the job—examples are unionization or the ability to gain tenure—and the ways in which informal labour, for example parental and caregiving work, yields significant labour disadvantages for some faculty more so than for others.

Fifth, independent research is needed to determine whether institutional pay equity studies and the interventions to address pay equity described therein are in fact remedying pay inequities. We recommend that Statistics Canada publish gender and diversity pay gaps at appropriate aggregate levels and make this information publicly available.

Finally, we recommend that institutions be required to provide gender and diversity pay gap information when applying for federal funding.

In closing, we commend SRSR for supporting Standing Order 108(3)(i), which we think is vital in providing more equitable pay for women faculty and academics from equity-denied groups. Our research shows that looking only at salary leads to a substantial underestimate of the long-term effects of pay gaps. We estimate that the impact of the gender pay and pension gap is \$454,000 to \$660,000 over the course of an academic career and retirement.

Thank you.

• (1745)

The Chair: Thank you both for your testimony.

Ms. Penner, I'm sorry I missed you at the beginning. You're on a different part of the Zoom screen, so I put the wrong two people together.

Thank you, both, for your testimony.

Now we'll go over to Dina Alkhooly from Visions of Science for five minutes, please.

Ms. Dina Alkhooly (Senior Director, Impact and Learning, Visions of Science): Thanks so much for having me today.

Hello, everyone. My name is Dina Alkhooly. I'm here representing Visions of Science, where I am the director of impact of learning. I'm providing testimony from the perspective of an organization working with youth from low-income and racialized communities, with a focus on Black youth. We work to encourage our youth's participation and career pursuit in science, technology, engineering and math.

While we have substantial evidence that illustrates and quantifies gender pay inequity, we have little data around other dimensions of marginalization, as the other witnesses have shared. A study by the Canadian Association of University Teachers found that racialized university educators are paid almost 15% less than their white counterparts. Another peer-reviewed study also found that racialized and indigenous professors earn lower wages, even after controlling for such variables as years of service and academic level. The Canadian Journal of Higher Education published a study that examined differences in tenure and promotion among faculty across eight Canadian universities. It found that racialized faculty had 54% lower odds of being tenured and 50% lower odds of being promoted to associate professor than non-racialized faculty.

This also impacts the next generation of scientists coming into the field. One way is through a lack of representation. As faculty are paid inequitably and pushed out in a variety of ways, few remain who can serve as inspiration, belonging and support for future faculty from their communities. Another is access to high pay. Youth from our communities are motivated by earning potential as a means of pulling themselves and their families out of poverty. Inadequate pay is an important deterrent for our youth wanting to pursue a career path.

This is not only a matter of equity. Lived experience is both relevant and critical for expanding our knowledge economy. Studies have shown that under-represented groups produce higher rates of scientific novelty, and yet their novel contributions are taken up by other scholars at lower rates than their peers. Equally impactful contributions of gender and racial minorities are less likely to result

in successful scientific careers. Canada ultimately pays for this in more narrow research and underutilized expertise, stifling divergent ways of thinking that are critical for innovation.

These gaps are caused by both education and employment barriers. Education barriers push students, especially Black and indigenous students, out of school at every level and prevent them from having the prerequisites required for university STEM education. Workplace barriers are through both outward and unconscious discrimination, nepotism, workplace culture that alienates marginalized faculty, and structural barriers that punish the essential work of teaching, mentoring, outreach and service that is disproportionately taken on by marginalized faculty.

At the workplace level, there is a lot that universities can do. They can designate faculty positions for those from marginalized communities. They can be intentional about elevating their work and providing opportunities for their promotion and uptake. They can reflect lived experience and responsibilities, such as teaching, outreach, mentoring, and committee and equity work—which ultimately benefits the university as well as the country as a whole—in their pay structure, workload and role expectations. They can increase transparency around compensation, promotion and tenure decisions. They can invest in the professional development of under-represented faculty to diversify their leadership.

We have such limited data that it enables people to continue to deny that these problems exist and keeps the issues under-researched. Universities should be required to publish data about their student body and their faculty by gender, race, indigeneity, disability, sexual orientation and gender identity.

Lastly, we cannot narrow our focus to just the tip of the iceberg. Early and ongoing investment is key. That means investing in education through financial support for both post-secondary and out-of-school-time learning that specifically serves those from marginalized communities. This we have found to be absolutely critical for building their capacity and belonging in STEM outside of the often alienating context of the classroom.

Thanks so much for your time.

• (1750)

The Chair: Thank you for your presentation.

We'll start off with Mr. Soroka for six minutes, please.

Mr. Gerald Soroka (Yellowhead, CPC): Thank you, Mr. Chair, and thank you to the witnesses for coming today.

I will start my first question with Dr. Penner and Ms. Smith-CARRIER.

There are a lot of statistics out there and sometimes.... I hate to use the term “manipulate”, but I've looked online and there are a few universities that are saying, “Once you start comparing apples to apples, actually our pay equity is very close, so it's not changing that much.” But given the information you've provided, I think you've delved into it a lot better. There's a lot more information and it's a lot more accurate.

Did you find that there were differences between the provinces? Were certain provinces more equitably representative, meaning that they pay equally, or were they all just about the same?

Dr. Tracy Smith-CARRIER: I'm not sure if Dr. Penner wants to weigh in, but the case study that we used was of one specific institution in Ontario, Canada. We didn't do our modelling across universities. We took that data from other sources.

Ms. Marcie Penner: I will add to Dr. Smith-CARRIER's remarks that data does exist by institution. The range I gave was based on Canadian institutions. I haven't seen that broken down by province, but it's certainly something that could be done with the existing data.

Mr. Gerald Soroka: If you have that information or if you could find that, we'd very much appreciate if you could supply it for us later.

Each university or institution is supposed to have guidelines to make sure that it isn't being discriminatory or to make sure that it is paying equally and fairly right across the board. Did you find with your study that the guidelines are there? If the guidelines are there, are they being followed or not?

Dr. Tracy Smith-CARRIER: The guidelines, I think, are there, but it's the interpretation of those. When an administrator sits down to look at somebody's CV and determine how many years of experience they are coming in with, that is where that sort of subjective bias comes in. It's not that the salary floors don't exist or that the guidelines don't exist; it's the interpretation as to when that bias gets introduced in terms of those salary negotiations.

Ms. Marcie Penner: Also, for the Pay Equity Act in Ontario, because “professor” is termed a male profession, there is no obligation for universities to ensure that female faculty are paid the same as male instructors.

Mr. Gerald Soroka: I find it quite surprising that universities are saying that they're here to treat everyone equally and fairly and that there shouldn't be any differences, while you have proven exactly the opposite. Do you have any reason or rationale as to why they would be doing this? As you say, they interpret the information however they want to.

• (1755)

Dr. Tracy Smith-CARRIER: It stems from that implicit or unconscious bias that people have against women. That's pervasive across society and is certainly witnessed in academia. When we look at the

data, when someone looks at the name on somebody's CV, a woman's experience is automatically undervalued compared to a man's.

Mr. Gerald Soroka: I find that quite shocking, because I've always treated everyone the same, and to me it didn't matter if you were a man or a woman. In whatever role I was or whatever job I was doing, I tried to pay both exactly the same so there weren't any issues for me. That's why I find it quite appalling that a university promotes that and yet doesn't stand behind what it's saying. Anyway, I'll leave my little rant.

I'll go to Ms. Alkholooy. You mentioned that even after correcting for other factors, it still seems that racialized professors seem to be paid substantially less than white professors. Do you believe this to be purely discriminatory, or are there other factors that are causing this pay gap?

Ms. Dina Alkholooy: Thank you for the question.

As the other witnesses have mentioned, there are outward ways in which people can be discriminated against and implicit ways that are a part of how we move in our everyday lives and we don't even appreciate the ways in which we're marginalizing folks. For example, if in the conversations we have with a peer they have more similar lived experience to ours, then we might have a higher affinity with that person. We're more cordial with that person. When a promotional opportunity comes up, we're more likely to think of that person because we have that relationship with them.

It all comes down to discrimination, whether that's coming from bad intent or whether that is just kind of the natural way in which we move through the world. There are instances of both, of course. Part of this is not coming from a place of “Oh, I want to make sure that women and racialized professors are not advancing”, but if I'm more comfortable around certain people and those are the types of people I've been around my whole life, I'm going to, just given the nature of how I move in the world, alienate folks who are dissimilar to me.

It comes a lot from the leadership of the organization and how often those marginalized voices are actually given the power to make these decisions. If they're not, the people with the power are going to continue to reproduce these inequities just by the nature of how they move in the world.

The Chair: Thank you for the questions. The time goes quickly.

We'll go over to Ms. Bradford for six minutes.

Thank you for suggesting this study. I look forward to your questions.

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

Thank you to all three of our witnesses for joining us today. You are our first witnesses in this very important study.

While pay equity falls mostly under provincial jurisdiction, the federal government has a number of programs that address pay equity. Can you tell the committee more about how these programs support provincial laws?

I think we'll start with Professors Smith-Carrier and Penner on this.

Dr. Tracy Smith-Carrier: There is the federal equity legislation. However, that pertains to federally regulated employees, so it's only to a set group of employees and not broadly across the board. If that legislation was expanded to include employees of other sectors and jurisdictions, including academia, that would be helpful.

As Dr. Penner noted earlier, the division of jobs based on classes that are male-oriented or female-oriented, in my mind, actually perpetuates some of this issue. "Which ones are the male-dominated fields and which are the female ones?" assumes that males should be in those fields and women should be in other fields.

While there are some provisions there, I think they're somewhat limited and could certainly be either expanded or reconceptualized to better address equity needs.

• (1800)

Ms. Valerie Bradford: I want to turn now to the impacts, the short- and long-term consequences of this wage gap for research in Canada. We know it exists and we know it's unfair, but what is the impact that it's having on our research capability?

Dr. Tracy Smith-Carrier: First of all, women are less likely to get funding. That's an issue, as we noted earlier. They have to produce two and a half times as much output in the number of publications relative to men to be considered as competent. That is obviously affecting their ability to get funding.

Dr. Penner, would you like to weigh in on that?

Ms. Marcie Penner: Yes. The amount of funding and the duration of the funding.... They're less likely to have papers published or accepted for conferences.

Women bring a different perspective, as do indigenous faculty and racialized faculty. They bring a different perspective and address research questions using different methodologies, as well, that are lost. If we are in search of the truth, we're missing some of that answer.

Ms. Valerie Bradford: Thank you.

Ms. Alkhooly, diversity within the Canadian research community is of great benefit to the research coming out of Canada. What impact does the discrepancy in pay have, not just on the ability to have a diverse research community, but also taking into consideration access to research positions and the quality and quantity of research being produced in Canada?

What are your thoughts on that?

Ms. Dina Alkhooly: Thank you for the question.

Adding on to where they started, Black women, specifically, have the worst maternal health outcomes out of all women across Canada. We know there are many issues with AI that have specific racial biases. We know that climate impacts are impacting

marginalized communities at a disproportionate rate to other communities.

All of these are implicit results of the fact that we don't have researchers who reflect the diversity of our Canadian population. They're unable to inform this research. They're unable to inform the innovations that are coming out to address our specific community problems, so that has an impact not just on folks within the research community, but across our society.

Ms. Valerie Bradford: Thank you.

Again, to you, Ms. Alkhooly, this question builds on a previous study that we've completed in this committee.

How would low stipends for graduate students and post-doctoral fellows impact equity, diversity and inclusion within the research community?

Ms. Dina Alkhooly: Thank you.

One thing that we've found really pervasive with our youth is a need to make money right away. That's a really big challenge in academia, because you need many years of being paid low wages, surviving on stipends and surviving on very small grants in order to get to the next career level.

They're very turned off by the thought that they have to be in their academic position for 10 years before they start to make a real career that can actually pay them to survive. Many of them are looking for faster ways to enter the workforce so that they can make money to support both themselves and their families.

Ms. Valerie Bradford: Professor Penner, now that we know these pay discrepancies exist, can you explain why and what the post-secondary institutions are doing to address it?

The Chair: You have about 10 seconds.

Ms. Marcie Penner: Yes. We've talked about the systematic bias that goes into that decision-making. I do think that most of it is implicit. The salary anomaly studies and those salary corrections are the work that's primarily being done, in addition to reviewing policies and practices around hiring—

The Chair: Thank you. You did well. I'm sorry to cut you off, but we have to keep moving.

It's over to Maxime Blanchette-Joncas.

[Translation]

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

I'd like to thank the witnesses who are with us today.

My questions are for Ms. Penner and Ms. Smith-Carrier.

I find the study that was done very interesting, but I think there's still a long way to go. There's been an improvement, but there's still a lot to do.

I want to find out exactly who is responsible for the current pay gap between men and women on university teaching staff.

• (1805)

[English]

Dr. Tracy Smith-Carrier: I think a lot of universities have been addressing this. This is something that's gone back for quite some time now. Universities started on this road 50 years ago. It's been a long road, and, as you mention, there has been significant progress in closing the gap. It's persistent, though.

As Dr. Penner noted, universities are basically doing this out of goodwill. There isn't legislation suggesting that they must address it, although I think a lot of them would be under a lot of fire now, with equity, diversity, inclusion and decolonization plans in place, to address these issues. I think it's a combination of both faculty associations and administrators who are working on this.

Also, I think it's something that affects sessional faculty as well. That's something we haven't talked about yet. The gap there is even more significant. We know that the non-unionized members or members who are not part of an association have an even harder time. It needs to be even broader to consider those members as well and not just the faculty association members.

[Translation]

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

Earlier, you mentioned a possible solution, which would be to broaden the scope of the Pay Equity Act, which currently applies only to public servants, that is to federal government employees.

I want to understand your point of view. Personally, this is the first time I've heard of such a solution. I know that various pay equity policies already exist, particularly in Quebec and in other provinces.

Is there a movement or mobilization? Has this recommendation been supported by various provincial government representatives, in particular?

[English]

Dr. Tracy Smith-Carrier: Well, there are a lot of differences in what's going on with pay equity legislation and pay transparency. Some are having pay transparency commissions now and pay equity boards.

I think that, ideally, it would be nice to have it captured across the country. Maybe these things would need to be negotiated. The federal, provincial and territorial governments would need to negotiate these things together. Moving away from some of our job classes might be something that they would want to consider as part of the negotiations.

[Translation]

Mr. Maxime Blanchette-Joncas: Okay.

Thank you for that.

I want to understand the other angle of intervention that can also be presented in this regard. As I mentioned, pay equity policies already exist, particularly in universities and government institutions.

The way you see it, these policies aren't perfect right now, and that's what is leading to these inequalities, these gender pay gaps.

I'm trying to see what a provincial government or the Government of Quebec couldn't do that the federal government could do.

[English]

The Chair: Who is that question for?

[Translation]

Mr. Maxime Blanchette-Joncas: My question is for Prof. Penner and Prof. Smith-Carrier.

[English]

Ms. Marcie Penner: I think there's a role for the provinces to play and a potential role for the federal government, as well. There are a number of programs through which universities receive federal funds. As part of the application for those federal funds, asking institutions to provide information about their gender and other diversity pay gaps could be part of that process, in the same way that the federal government has played a role in rectifying what was a human rights complaint around Canada research chairs and gender and other diversity imbalances in those positions. I believe there's a role for both to play.

In some provinces, you can only go through a human rights complaint to address these issues because there is no pay equity legislation.

• (1810)

[Translation]

Mr. Maxime Blanchette-Joncas: Okay, thank you.

The federal government currently provides funding to universities, including research chairs and grant programs. Are there any concrete mechanisms to avoid pay inequities between genders?

[English]

Dr. Tracy Smith-Carrier: Absolutely. I think the Canada research chair funding stream is a great example of what can be done. It requires that equity be addressed. It has to be done through a survey of every applicant, and that is the means to determine whether or not it's meeting the benchmarks according to that human rights court case.

We could extend that to all federal funding agencies to ensure that equity is represented through that, and use—

The Chair: Okay, thank you.

I'm cutting you off, but you can always send in comments in writing to expand on anything at the end of the questions. However, we are pretty tight on time this afternoon.

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

Mr. Richard Cannings: Thank you.

Thank you to all the witnesses for being here.

I'm going to start with Ms. Alkhoody. Thank you, especially, for being here. I know I've talked to your group before, Visions of Science. It's a group or organization that attempts to encourage people of colour—women of colour, especially—to get involved in STEM research positions and education.

I'm wondering if we can back up from the pay gap and go to the gap in terms of getting these racialized women into this field. In one of our last studies, we had testimony from Dr. Andrade from the University of Toronto, and she said:

Our current system is a massive filter. It's a filter that is filtering out people as a function of their finances, not as a function of their excellence and not as a function of the likelihood that they might be the next...Nobel Prize laureate. We are filtering out people who can't take the mental load of living in poverty....

She went on very eloquently about those challenges that people have.

I'm wondering if you could maybe take a couple of minutes to talk about what Visions of Science does to encourage people who have those challenges ahead of them to get involved in research.

Ms. Dina Alkhoody: Thank you so much.

One thing that we try to do with our youth as soon as they hit high school—because as soon as they're of working age, it's an opportunity to lose them from the path of STEM—is to work with our partners to try to bridge internships from as early as grade 10 so that youth don't have to work at a grocery store, for example, as opposed to being part of our STEM program in the summer.

I think there's a really big role to play for work-integrated learning, because these youth have to be paid in order to stay on the trajectory of STEM. As soon as they're of working age, we need to find ways to ensure that they can learn STEM while also being paid. Otherwise, we are going to lose them to entry-level jobs, and regardless of their interest in STEM, by the time they get to post-secondary, other influences will have pushed them out.

Mr. Richard Cannings: Thank you.

I'd like to turn quickly to Dr. Smith-Carrier to talk about some of these biases.

I think this is the toughest part. One of the astounding things you mentioned is that a woman has to do two times or two and a half times the amount of research and published work to get the same salary results as a man. That's astounding. We obviously can't do blind...you know, take the name off the top of their CV, because most of the CV is a list of publications with their name.

How do we get around that? Is there a way of doing that with structuring the panels or committees that make these decisions?

Dr. Tracy Smith-Carrier: Yes, that is one thing that could be done. Certainly you could have a faculty association representative at the negotiations so you would have somebody who is independent and who can also help contribute to the discussion. I think these are things that could be arranged.

In terms of the names on the CVs and whatnot, as you said, it's not an easy thing to consider, but perhaps you could have a resumé or a CV that was wiped clean in terms of names and had just the number of publications or the experience of that person, to de-identify them in a way. That is a possibility, I think.

• (1815)

Ms. Marcie Penner: In follow-up research, Dr. Smith-Carrier and I...because this question arose for us as well: We've quantified a problem, so how do we resolve it? There's not a lot of good evidence about evidence-based programs and policies to deal with EDI issues. We're currently conducting a systematic review of the existing body of evidence and would be happy to report back our findings, because I think you raise a very important question.

Dr. Tracy Smith-Carrier: Yes, absolutely.

In fact, some of the diversity training that is offered at the moment, the Harvard Review has come out as saying, is actually not effective, so having evidence-informed policies as well as the terms of our programs and how we go about this, I think, is really important moving forward.

Mr. Richard Cannings: Thank you.

I'll leave it there. I'll pick it up on my next round.

Thank you.

The Chair: Thank you very much.

For the next round, we're going to have to do a little trimming and have four minutes, four minutes, two minutes and two minutes, to try to land us on time.

We can now go to Corey Tochor for four minutes.

Go ahead, please.

Mr. Corey Tochor: Thank you, Chair.

Thank you to our witnesses here today.

Regarding the study that was, I believe, co-written by Professors Penner and Smith-Carrier, I was shocked to hear that there was an almost half-a-million-dollar difference when we added it all up. It is mentioned in that study, though, that Statistics Canada has still not been asking for all of the different kinds of information that you need.

What do you need that Stats Canada has not been asking for?

Dr. Tracy Smith-Carrier: Well, if we want to expand it beyond just gender, there is also the diversity piece involving equity-denied groups. No institution yet has been doing pay equity for equity-denied groups outside of gender, so having mandatory data collection on that would certainly be a start.

Mr. Corey Tochor: At some time in the history of our country, did we record that information?

Dr. Tracy Smith-Carrier: I think Stats Canada does capture some of it in census data, but you have to pay for all of that. It's not publicly available. One of our recommendations is to collect the data and make it publicly available so that we have it, so that institutions have it, people have it, and we don't have to pay large sums of money to get access to that information.

Mr. Corey Tochor: Thank you so much.

I know we're under a bit of a time crunch, so we'll move on to the next member.

The Chair: Thank you, Mr. Tochor.

Sometimes it's quality over quantity in questions, so thank you.

Now we'll go over to Mr. Turnbull for four minutes.

Mr. Ryan Turnbull (Whitby, Lib.): Thanks to the witnesses for being here. Thanks for your presentations. This is a really important study.

Thanks to my colleague Ms. Bradford for bringing this motion forward to do this important work. It's certainly shocking to hear that in 2023 we still see such a pay equity gap based on gender and racialization.

You started to answer a question previously about what post-secondary institutions are doing to address this. I wonder if Professor Smith-Carrier or Professor Penner could speak to that in a little more detail, because my understanding is.... You mentioned before that post-secondary institutions are studying this and that they're reviewing policies. I think you mentioned only hiring processes, but I think there are probably numerous other points in post-secondary institutions where we could be making a difference, so I'm just wondering if there's additional clarity that you can provide on that.

• (1820)

Dr. Tracy Smith-Carrier: Yes. In terms of the pay equity studies that a number of institutions have taken on, several have made the salary adjustments that Dr. Penner mentioned earlier. Some of them have actually done it by giving a flat rate increase of a certain amount to all women faculty, and others have done some sort of a percentage increase. The issue, of course, is that some of them haven't embedded them within the pay structure. It's like a one-off payment, but that doesn't get it embedded into your regular salary moving forward. You're going to have to keep adjusting over time because you haven't embedded it into the pay structure.

None of those interventions thus far, or very few, have been so meaningful as to actually close the gap. They're usually just a portion of what would be necessary, so you have to keep adjusting over time and, of course, as time goes on, the gap keeps widening and it gets more expensive to keep trying to address it. If they actually were meaningfully addressing it and permanently trying to close it.... Obviously, that's not to say that we wouldn't need to keep addressing it. As long as this sexism is pervasive in society, we'll have to keep addressing it, but taking meaningful steps to close the gap is what we're suggesting is necessary.

Mr. Ryan Turnbull: Could I just ask for a little more clarity? I think what we're talking about here is a systemic bias. Very clearly, there is systemic racism in the institutions, and we see this present in many institutions. It's built right in.

How do we address that from a behavioural standpoint when there are so many decisions that are being made? There are upward mobility decisions or promotional decisions that are being made. There are obviously hiring decisions. I was involved in post-secondary institutions, quite a number of them, and often you progress from being a student to being a researcher. You go through different degrees and you eventually get hired on as faculty. Then, of course,

you're moving through a whole system thereafter of promotional opportunities as you earn them.

What you're saying, or what you've said today, is that there are forces that are working against women, racialized women in particular, and that those biases are there. How do we change the behaviour in those organizations?

The Chair: I'm sorry, but we're going to have to leave it there because we've used up the time on the question. However, if there is an answer that you can provide to the clerk, that would be helpful.

For two minutes now, we have Mr. Blanchette-Joncas.

[Translation]

Mr. Blanchette-Joncas, the floor is yours.

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

I'll get right to it. I want to be in solution mode. I'd like the witnesses to tell us about other possible solutions.

What tools could the federal government use to address the pay inequity that currently exists in university institutions?

[English]

Ms. Marcie Penner: I think one of the things, as a first step, is providing information about the problem. The more we understand the problem, the more we can address it. By providing that information out of the census data.... There's also UCASS data that could provide that information. Asking institutions to provide that information and make it public would be a good first step. It's unclear which programs and policies will meaningfully tackle this issue, so that's where research is currently under way to try to answer that question.

[Translation]

Mr. Maxime Blanchette-Joncas: Thank you very much.

Would other witnesses like to talk to us about their potential solutions and some real tools the federal government could use to intervene in this matter?

[English]

Ms. Dina Alkhoody: I will just add to my point about work-integrated learning. It sounds like it is something that other studies have discussed. The impacts of exploring academia on folks who are experiencing poverty cannot be overstated; it's an impossible trajectory for someone who is coming from a place of economic insecurity. It's about increasing those stipends for graduate students and funding work-integrated learning programs for people from low-income communities, particularly for racialized communities and women who are coming from racialized communities.

• (1825)

The Chair: These are great answers. Congratulations on the short time in getting those out.

Now, for the final two minutes, we'll go to Mr. Cannings.

Mr. Richard Cannings: Thank you.

I'll just quickly ask Dr. Smith-Carrier and Dr. Penner if there is anything in their research about some hopeful trend. I think the extent to which this is going on now is surprising to all of us, but is there a trend as we are getting more women at higher levels? You talked about pay gaps with deans, but I have women friends who are deans and women friends who are presidents of universities. Is there any trend that this process will result in a lessening pay gap when we have those hiring panels, perhaps with more women?

Ms. Marcie Penner: I would say that one area in which we see hope is that the representation—predominately at the lower ranks, but also rising—of women, indigenous faculty and racialized faculty has grown, so that's one area in which we see improvements. The Momani et al. study showed that the gaps are actually widening instead of narrowing, so that's an area that's of more concern. In terms of representation, which is part of the solution but not sufficient, we do see some improvement.

Mr. Richard Cannings: Thanks. I'll leave it there.

I'm a bit disappointed to hear that, but hopefully things will change.

The Chair: Thank you. The truth hurts sometimes, but thank you to Dr. Penner, Dr. Smith-Carrier and Dina Alkhooly for joining us and for providing excellent testimony.

Thank you to the members for their questions. It's a really good study to be rolling up our sleeves on.

There are a couple of housekeeping items before we leave. Should the committee wish to travel during the winter 2024 period, we have a deadline of November 10. If that's desired, think about that and we can discuss further to ensure that we get a detailed budget put together for travel. Maybe we can pick that up next week.

Also, the clerk will provide a deadline in the coming weeks for the witness list for the study on indigenous knowledge, so that will be moving forward. Think about whom you can bring to the table on that.

On Monday, September 25, 2023, we're going to be resuming our studies on both topics we had today. On Monday as well, there's a Support Our Science event in room 306 of the Valour Building from 5:30 to 7 p.m. It starts at 5 p.m., but we'll be in committee until 5:30, so consider that in your planning as well.

Thank you again to everybody for being part of this.

Is it the will of the committee to adjourn? Okay. Thank you.

Safe travels. We'll see you next week.

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