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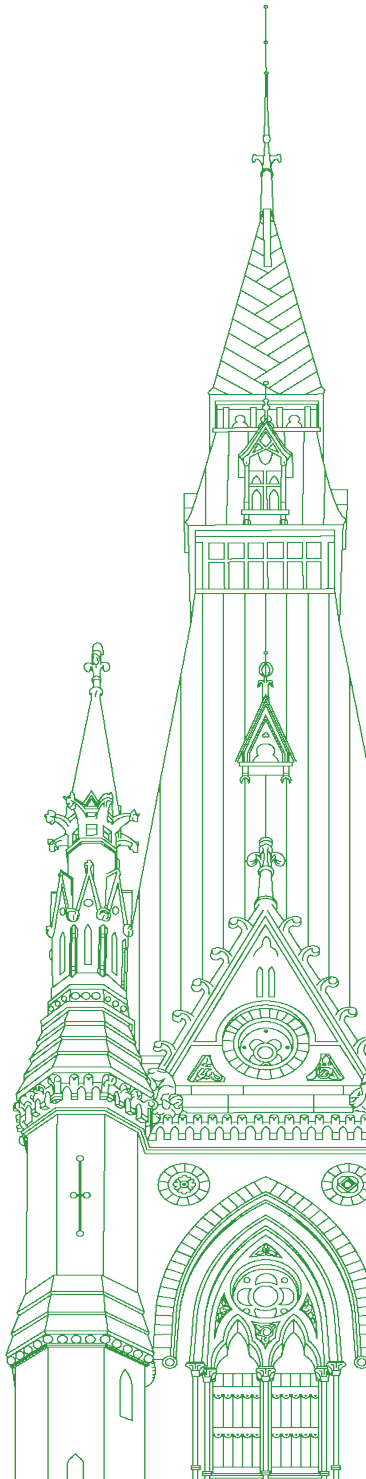

Chair: Mr. Lloyd Longfield

Standing Committee on Science and Research

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● (1100)

[*English*]

The Chair (Mr. Lloyd Longfield (Guelph, Lib.)): I call the meeting to order.

Welcome to meeting number 75 of the Standing Committee on Science and Research. Today's meeting is taking place in hybrid format, but everybody is here in person. It's great to see that.

You can choose the official language of your choice, of course, on the device in front of you. Do keep the earphone away from the microphone so that our interpreters don't receive the feedback that causes injuries to their hearing. As well, direct your comments through the chair.

It's now my pleasure to welcome, from the Office of the Chief Science Advisor, Dr. Mona Nemer, chief science advisor of Canada, as well as Dr. Geneviève Tanguay, vice-chief science advisor of Canada.

It's tremendous to have some time with you today to have a discussion on Canada's science. Within our committee, of course, that's where our focus is every week, so it will be great to hear from you.

Dr. Nemer, you have five minutes to get us started.

[*Translation*]

Dr. Mona Nemer (Chief Science Advisor, Office of the Chief Science Advisor): Good morning, Mr. Chair.

Good morning, everyone. Thank you again for giving me the opportunity to talk to the members of the committee about science and research in this country. I would also like to thank you for the important work you do.

[*English*]

I really want to say how much your reports are appreciated. They are thoughtful and are keeping science in the limelight and on the radar in the country.

Since my previous appearance before the committee, my office has been busy on a number of files, while continuing to provide independent advice to government on vital issues for Canadians.

With the support and participation of the science community, we have helped to define a vision for a new climate science strategy and have identified emerging challenges and opportunities in Arctic and subarctic scientific activity.

We have advised on, and will continue to inform, important decisions on the use of science in all aspects of emergency management, from preparedness to response to recovery.

As well, we are providing advice on the long-term health and socio-economic effects of the pandemic as well as the environmental impact of some major infrastructure projects.

[*Translation*]

Recognizing the growing need for science in government and the accelerating pace of technological change, we have launched a series of analyses for the federal science community. These studies aim to ensure that government decisions are based on the best science and scientific advice. In doing so, we are helping to maintain and even strengthen public confidence in science and democratic institutions.

That's why we remain committed to advancing scientific integrity policies, as well as open and safe science, which are core values for our international collaborations. Indeed, we have established fruitful research alliances with our international counterparts, as evidenced by the establishment of a France-Canada bilateral committee and Canada's access to the European Union's Horizon Europe program as an associate member.

[*English*]

All of these accomplishments are built on the contributions and excellence of our extraordinary science community, and I'm eternally thankful for their support and engagement. They have helped to grow Canada's scientific landscape and have made important contributions towards solving some of the most pressing global challenges. Canadians can be very proud of their country's well-recognized science strengths.

We have an outstanding research system that supports creative ideas, world-class infrastructure, multidisciplinary collaboration and an inclusive science culture. However, in order to fully utilize our assets and keep pace with our international peers, we need to be on top of the rapidly growing areas of science and technology that are advancing knowledge and attracting top talent from around the world.

The international landscape is diversifying, and there are more players than ever before vying for leadership. So many fields of research are advancing at an exponential rate—from quantum research and AI to biotechnology and gene therapy to the promise of fusion power and other clean technologies. At the same time, many of them are converging. The global science race is not just expanding; it is accelerating. It is also shaping tomorrow's economy and impacting communities.

Staying in the game is essential but will require focus and concerted efforts across sectors. We need to not only improve our support for Canadian research and researchers but also better utilize the resources we already have and ensure that our research and development ecosystem is fit for the reality and demands of the foreseeable future.

I trust we can all work together to safeguard our reputation of excellence in science and technology. It will directly impact our prosperity, national security and international relations.

Thank you again for the opportunity to exchange with you on the state of science and science advice in these important times.

● (1105)

The Chair: Thank you very much for your opening remarks.

We could dive into many of those, as I am sure we will. We have a study coming up on the Arctic, and you mentioned that. We're just about to undertake a study on research funding for universities. It's great to have the time to talk.

I want to thank Rosemarie Falk and Lori Idlout for coming to our committee as substitutes. It's great to have you here.

We'll now get started with our first round of six minutes each, starting with Corey Tochor for the Conservatives.

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

Dr. Nemer, when your office was set up in 2017, it was reported that it had budget of $2 million. What's your annual budget now?

Dr. Mona Nemer: I believe our budget has increased. I'm not certain exactly what it is. I believe it's more around $3 million or $3.5 million right now. I can certainly provide the exact budget figure.

Mr. Corey Tochor: If you could provide that in writing, please, it would be much appreciated.

May I ask your salary?

Dr. Mona Nemer: I regret that I'm unable to give you my salary, because I haven't looked at it recently. I can just say that I have an appropriate salary.

Mr. Corey Tochor: On your salary, is there a bonus component to your compensation?

Dr. Mona Nemer: There is no bonus compensation for my salary. I think it was set up this way to ensure my independence.

Mr. Corey Tochor: Was there any increase in salary from last year to this year, though?

Dr. Mona Nemer: I believe I received the cost of living increases that everyone else received.

Mr. Corey Tochor: Do you know the percentage or the dollar amount?

Dr. Mona Nemer: I'm very sorry, but I don't track this.

The Chair: Maybe we could get a financial report coming back to us. That would be helpful. Thank you.

Mr. Corey Tochor: It's just a little bit alarming with regard to this budget, but we'll find out what the actual dollar amount is.

I wanted to dive into a little bit of the good work that you do, and the only annual report that's available is 2021-22. The report for 2022-23 is not available, 2023-24 is not available, and then our current year of 2024-25, I'm assuming, is not available.

When do we expect these back annual reports to be filed?

● (1110)

Dr. Mona Nemer: I think the 2022-23 annual report is the latest report that was developed, as the calendar indicates. It is done. It's imminent. It's right now being translated.

Mr. Corey Tochor: Do you have a target of how long it takes to produce these annual reports? Should we be expecting future ones to be two to three years behind, or...?

Dr. Mona Nemer: I think we're producing the annual reports to the best of our ability. We are a small team. We actually do not have an office that is dedicated to producing the annual reports the way that other organizations, departments and agencies have in the government.

We appreciate that the annual reports are very important. We have promised to work in a transparent manner. Most of our activities are actually put up on our website on an ongoing basis. I'm not sure we have fallen that far behind in our annual reports, except during the pandemic. I hope it's understood that our most pressing issue was to provide the best advice to government and produce reports on the pandemic.

I appreciate the interest in our annual reports. I promise that you will not be disappointed with the latest one.

Mr. Corey Tochor: To go back to the organization, you said it doesn't have the people or capacity to do these annual reports on time or in a shorter period of time. In terms of full-time equivalents, how many people actually work in your office? Has the number increased since 2017?

Dr. Mona Nemer: When I arrived, there was space. There was no one in it. We had two individuals provided to us on an interim basis to support setting up the office, which we have done. I think we've done so in a reasonable and appropriate manner, to set up—

Mr. Corey Tochor: Could we get a report on the—

Dr. Mona Nemer: —and to provide our mandate. Right now—

Mr. Corey Tochor: We're going to run out of time here. I'm sorry.

Could you just—

Dr. Mona Nemer: Right now—

Mr. Corey Tochor: Chair...?

The Chair: I'm sorry; you're interrupting. Let her finish.

Mr. Corey Tochor: No, this is my time, actually.

I would request those answers in written form. I have a minute and 10 seconds left.

In 2023 you attended the Trudeau Foundation final meeting for the application of nominees. In 2020 you attended the Trudeau Foundation and deputy ministers science committee. Would you mind telling the committee more about your involvement in these organizations?

Dr. Mona Nemer: As the chief science advisor, like my homologues in the country and outside the country, including, for example, in Quebec, the U.K. and the U.S., we are expected to take part in the scientific life of the country. My involvement with the Trudeau Foundation has been to chair the scientific review committee, and I have no involvement other than ensuring the applications are reviewed properly on a meritorious basis and a list of nominations is submitted to the foundation.

The Chair: Now we're going to the next round. Go ahead, Dr. Jaczek, please, for six minutes.

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

Thank you, Dr. Nemer, for coming to visit with us this morning.

You may be aware that our committee recently concluded a study on how best to integrate—or I think we preferred the word "braiding"—traditional indigenous observational knowledge into what we consider more mainstream western science. I think we all found that extremely interesting.

Could you describe how your office liaises in terms of science and research in post-secondary institutions in order for our country, for Canada, to understand what our indigenous people know? Have you had a role in liaising between the various institutions, etc.?

● (1115)

Dr. Mona Nemer: Thank you for this question. This is a very important topic for the country and for my office.

We've been involved in facilitating the weaving of indigenous knowledge with western science and knowledge in many areas. To help us do this, we have a researcher in residence in my office who is an indigenous scholar from the University of Manitoba. This was following a request from the post-secondary institutions for help in terms of facilitating this, but also in the handling of indigenous knowledge in terms of, for example, open science. How can we manage this? How can we use it as evidence in impact assessments? We're involved in this.

We also have worked collaboratively with other departments to set up I-STEM, which is "Indigenous" and "STEM". It is a pan-government organization that aims to facilitate the recruitment of indigenous scientists and scholars but also to facilitate the understanding of culturally sensitive issues and how best to liaise with the community and so on.

We've had a number of round tables as well with indigenous leaders, but as part of the CRCC, the Canada Research Coordinating Committee, we have also done a number of things around indigenous research. We've set up an indigenous circle. Just last week, my colleague, together with the U.S. scientists at the American Association for the Advancement of Science, organized a workshop specifically on the use of indigenous knowledge and the cultural sensitivities around this.

We're very much conscious of the important role that indigenous knowledge can play, and we want to make sure that there are harmonious approaches to it across the country that are both culturally sensitive and respectful of the communities.

Hon. Helena Jaczek: Thank you so much for that.

As part of your experience to date as Canada's chief science advisor, do you have any recommendations on how to improve coordination of federal, post-secondary and industrial science and research? Are there lessons learned that we could use to make some recommendations as a committee to improve that type of coordination?

Dr. Mona Nemer: I think the coordination of research is critical for the country. With increasing pressure on precious resources, I think we really need to find ways to work together better. I'm not saying that this is not happening, but I think it could happen even more.

I think starting to develop a national science, technology and innovation strategy would be very helpful for the country. It will set our ambitions and our objectives, and then everybody can play their own part and role within this strategy so that there are no surprises and there's no fragmentation and we're not spreading the wealth thin, but at the end of the day, we'd actually have something to show for it.

That's one of the approaches I think would be quite beneficial.

Hon. Helena Jaczek: Would you be prepared, as the chief science advisor, to lead that movement towards a national strategy?

Dr. Mona Nemer: I would be honoured and proud to do so if asked.

My counterpart in Australia is in the midst of doing this, and it would actually be an appropriate role for the chief science advisor to lead it, but of course with great consultations and collaboration with everyone in the country.

● (1120)

The Chair: Thank you.

Now we go to Mr. Blanchette-Joncas.

[*Translation*]

Mr. Blanchette-Joncas, you have the floor for six minutes.

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.

Ms. Nemer, it's a pleasure to see you again today.

In 2015, Justin Trudeau's government promised to make Canada scientifically competitive once again on the international stage. Today, nine years later, what is your analysis of the concrete measures taken by this government to achieve this goal?

Dr. Mona Nemer: The question of Canada's leadership on the international stage is a very interesting one. As I said in my opening remarks, our future prosperity depends on it. So it's very important.

First of all, I'd like to remind you that I'm a scientific adviser and I don't audit government measures. I can, however, comment on the data and what has been done.

The government has continued to invest in science, research and innovation in various ways. The challenge is that other countries have made even greater investments. You can't ensure that you remain a leader by continuing to do the same thing. When you're one of the leaders, you can only go backwards. As such, you really have to avoid going backwards.

In my humble opinion, we haven't seen such an acceleration of change in science and technology since the end of the Second World War. Exceptional circumstances call for exceptional measures. It is clear that we need to double our investment in research if Canada is to maintain its position. It's important that we keep our place.

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

I'm going to rephrase my question.

What performance indicators tell us whether Canada is internationally competitive in the scientific field?

Dr. Mona Nemer: We can look at different indicators, such as the percentage of GDP devoted to research. The Organisation for Economic Co-operation and Development, the OECD, publishes this kind of analysis, which includes several variables. The first is GDP. If our GDP improves, we must also improve our investments. It's also important to know that these analyses are based on the sum of investments by the federal and provincial governments, universities, post-secondary institutions and industry.

These analyses exist, and they show that Canada has not even maintained a stable position in recent years. Everyone needs to increase their investment in this sector, particularly the—

Mr. Maxime Blanchette-Joncas: I'm going to continue with my questions, Ms. Nemer.

What advice would you give the government on the investments to be earmarked in the next budget to support Canada's scientific ecosystem?

Dr. Mona Nemer: Mr. Chair, I clearly stated that I cannot make recommendations to the government. However, I have made it very clear in my public appearances that we need to increase investment in research and improve our support for researchers and young researchers, for example through post-doctoral fellowships.

Since taking up this position, I have expressed my support for the recommendations of the Naylor report, and I haven't changed my mind since.

● (1125)

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

The Naylor report dates back to 2017. A few years later, the government mandated an advisory panel to take another look at the situation. This panel began its work in March. I'm an eternal optimist, but above all I'm a realist. I put some questions to Nipun Vats, the deputy minister responsible for science at Innovation, Science and Economic Development Canada. He told me that, at the moment, there is no real plan to implement the 21 recommendations of the Bouchard report.

I'd like to know your opinion. You say you support the Naylor report. Have you had any discussions with the government? What advice have you given them about implementing the recommendations of an independent panel mandated by the government?

[*English*]

The Chair: You have 20 seconds.

[*Translation*]

Dr. Mona Nemer: I support a number of the recommendations in the Bouchard report, which are compatible with those in the Naylor report.

There have been two reports in five years, and both recommend the same thing and come to the same conclusion. So it's important that we take them on board and act. As to whether I've been involved in discussions about what to do next, the answer is yes.

[*English*]

The Chair: Thank you.

As the testimony is coming forward, I'm thinking that a lot of this can be used in our future studies, including the study Mr. Blanchette-Joncas brought forward to the committee that we will be beginning shortly.

Ms. Idlout, welcome again. You have six minutes.

Ms. Lori Idlout (Nunavut, NDP): *Qujannamiik, Iksivautaq*.

Thank you, Chair.

Thank you, Mona, for sharing your expertise at this committee.

I'm going to ask you two easy questions first, and then I'll probably ask you more difficult questions.

This committee is currently conducting a study of how to integrate indigenous traditional knowledge and science into government policy development. Has your office considered how to do this?

Dr. Mona Nemer: My office has considered doing this. In fact, we are reviewing, right now, our science integrity policy, which we put forward back in 2018 and which has been adopted by all the science-based departments and the government. We're reviewing it precisely to incorporate two additional important items we didn't have answers for before. One is the use of indigenous knowledge in science advice. The other one is about the use of machine learning and artificial intelligence in research and reports.

Yes, we are doing this.

Ms. Lori Idlout: Thank you. I also appreciated the responses you had for another MP regarding the use of indigenous traditional knowledge.

What advice would you have for the government on how to combine or bring these two knowledge systems into government policy?

Dr. Mona Nemer: It's really important for the public—and, of course, the elected officials are part of the public—to appreciate what indigenous knowledge is. I'm not certain that it is well understood by many people. I think we need a lot of engagement and some sensitization or education, if I can say that.

I will give the examples of the use of indigenous knowledge in the north to predict migration of animal species, weather events or production of food and other things. I think these are most definitely things that follow what we refer to as the scientific method, in the sense that they are observations that lead to conclusions and they are verifiable and have been repeated over and over. I think it is really important to do this. We need to engage in ongoing, continuous dialogue with different communities.

We're also doing this in our international engagement with other countries—sensitizing them to the fact that we do need to incorporate and be conscious of indigenous knowledge and indigenous community perspectives in much of our research. I think Canada can also be a leader internationally on this.

● (1130)

Ms. Lori Idlout: *Qujannamiik.*

I'll move on to a bit more difficult question. I do appreciate your responses very much. They show that you've learned, to some extent, what the realities are with respect to the experience of indigenous peoples and what Canada's genocidal policies continue to do to indigenous peoples.

A very specific example is that scientists and knowledge of science seem to be considered more highly than indigenous traditional knowledge. What kind of approach do you take when those two different forms of knowledge are in conflict with each other? How would you make sure there was appropriate reconciliation so that indigenous traditional knowledge would be the one used to help guide decision-making?

Dr. Mona Nemer: Thank you for this difficult and complex question.

I like to believe that the two knowledge systems can work hand in hand and that there is no contradiction between them once people have a better appreciation and understanding of what each brings to the equation. I prefer to think we can do it this way, but we have a long way to go.

I will be very honest with you on this: Difficult doesn't mean impossible. It just means that we have to work harder.

Ms. Lori Idlout: I think I'm running out of time.

I do hope that when you're doing your reports, you're continuing to support indigenous traditional knowledge and that some of that discussion revolves around how to make sure that indigenous traditional knowledge is considered on par with science so that decisions that impact indigenous peoples are based on both knowledge sets rather than on one over the other.

The Chair: You have 10 seconds.

Do you have a comment on that, Ms. Nemer?

Dr. Mona Nemer: Thank you.

We take this very seriously and we take it to heart. I can only commit to continuing to work. We're using every opportunity we have to do our bit. I sincerely believe in the place and role of science in reconciliation and I can only promise to continue working towards that.

The Chair: Thank you.

Now, for the second round, we have Ben Lobb for five minutes. Go ahead, please.

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

Thank you for being here today. It's Dr. Nemer. Is that correct?

Dr. Mona Nemer: Yes.

Mr. Ben Lobb: I want to make sure I address you correctly.

I'm not going to go on about the annual reports too much, but right in the mandate it says that you shall make an annual report to the Prime Minister and the Minister of Science every year. Has anybody ever asked you where the reports were for the last three years or two years? Has anybody contacted your office and asked you about those?

Dr. Mona Nemer: Well, we keep the Prime Minister and the Minister of Science informed of all our work.

For example, you mentioned the mandate requiring that we report on the state of the science workforce and the state of the science infrastructure, which we have done. We just put out an elaborate report, actually, in December on the science workforce. It's not as if they're waiting for this one report to find out what we're doing or what the recommendations are.

Mr. Ben Lobb: Is the document you presented to the Prime Minister and the Prime Minister's Office at the end of the year a public document, or is that a cabinet briefing note to the Prime Minister's Office?

Dr. Mona Nemer: We put together, actually, a substantive report on the science workforce. It's on our website and it was covered by the media as well. It is very much a public report.

Mr. Ben Lobb: One other question I want to ask you is on independence.

As the chief science advisor, do you get to pick what you want to investigate, or are you nudged and told you might want to consider a certain topic? I noticed you did an interview and the Minister of Health had asked you to conduct the long COVID study.

It's not criticizing you at all. I'm just asking this: Do you feel you have the independence to study what you want, or are you advised by a cabinet minister on what you should study?

● (1135)

Dr. Mona Nemer: Thank you for this question. I get asked this very often, so it's very pertinent. It's very important to understand the role.

We do both, anyway. The government can ask us for advice. Sometimes it requires a report, a small study or a round table, but we are absolutely free to decide on issues of importance that we want to investigate.

Long COVID is a good example, because we had been tracking the issue for a while and we'd had discussions with the Minister of Health about it, who then felt something substantive needed to happen that was beyond the Department of Health, because, of course, the Department of Health provides this.

There are a number of things we do. We provide science notes—

Mr. Ben Lobb: Can I interrupt you for one second?

When you're asked by the health department to do a study on long COVID, are you provided an additional budget, or is the expectation that you'll do it out of your own internal budget?

Dr. Mona Nemer: The expectation is that we do it from our own internal budget. We don't get any extra funding for any of the extra work.

Mr. Ben Lobb: Can I ask you one other question?

When you're putting together your plan to study long COVID on the recommendation of the health minister—and I know you are a well-respected molecular cardiovascular researcher—does the idea ever come up that if you're going to look at long COVID, you should also look at whether there are any potential harms the vaccine did to people? We see that in the news all the time.

Do you have the independence to say that you will study this, but if you're going to look at everything to do with COVID, you should look at all of it?

Dr. Mona Nemer: We absolutely have the ability to do this. This is exactly how it happens.

Even when the government asks us for advice on the use of science in a particular case, we assemble our own experts. We don't need any vetting from the government. We don't seek any vetting from the government. We do all the work independently and provide the report. Again, depending on how many of these we do, you can appreciate—

Mr. Ben Lobb: Can I ask one last quick question? Before you—

Am I at time?

The Chair: Yes. Perhaps you could share time within your group. They are very good questions, and it's a good discussion. We need to understand the governance, so thank you for that.

We'll go to Ms. Diab for five minutes.

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

Dr. Nemer, thank you very much. It's wonderful to see you again. Thank you for coming back to our committee. I know that you appeared once before as a witness. Let me thank you again for your contributions to our foundational first study and for the insight you shared with us at the time, when we studied graduate scholarships in June.

Personally, I think having a chief science advisor for our country is a big deal. Canadians should know more about the role and the work you've done and are doing and should be able to see and feel that scientific inquiry is valued and put to use in our country and in our policy-making.

For the benefit of those watching us at home throughout the country, your current post dates back to 2017, but you've come to this post with a long record of contributions to science in Canada. I know that you've trained more than 100 graduate and post-graduate students in your career, and have mentored and counselled many more. You're a leader in the field of molecular cardiology and have helped to make great strides in heart health with your research. You've also published over 200 academic publications and have made significant contributions to Canada's response to the pandemic.

This is work that not only keeps people safe and supports their health, but gives hope: hope that science can be put to use to better our world. In fact, I think where we met you in the last couple of years was at the Science Meets Parliament event. The number of students who have been coming here and have been introduced to the parliamentary work we do is so crucial in their fields, but also in our fields as parliamentarians, so that we can better connect.

I want to take this opportunity so that it does not go past me to say that it's very nice for me personally to see a fellow Lebanese Canadian woman in your position making a big difference in Canada. Thank you.

Your work as chief science advisor is broad. Your office provides advice to government on improving support for quality research and enhancing the science advisory function within government, including processes for science-informed decisions. I felt it was important to put that on the record, because it really makes a big difference.

In the age of disinformation, science has become political. Can you talk to the committee about the impact of disinformation on science? How can we combat it and what can your office do to safeguard science? What is the role that your office can play in protecting science in Canada? It's a pretty broad question, but I'm going to leave the opportunity for you to enlighten us on that.

● (1140)

The Chair: You have two minutes.

Dr. Mona Nemer: Thank you very much. I'm humbled by your generous comments. It's a privilege to serve the country and to continue to serve science.

Disinformation and misinformation are issues that we all take very seriously. I think they're not only a threat to science; they're also a threat to democracy. They're a threat to how people carry out their lives. One thing for sure is that we can't always be on the reactive side and trying to correct what's out there that's not exact. We need to be proactive. I think transparency is our best ally.

Personally, I think we need to enhance scientific knowledge in the country so that people can tell by themselves what are appropriate sources of evidence and so on, but I think we need to involve the public in our deliberations.

I salute the report you put out in terms of citizen science. It's really with this in mind that we work, that we engage continuously with the public, but it's also that we take on specific projects.

Your colleague asked me if we take on topics ourselves. One of the topics that we have decided to report on, to produce, is called “Sky Canada”. It's about unidentified aerial phenomena. The reason we have taken this on is not because we believe one way or the other about extraterrestrials or anything like that; it's because we believe it's important that we have a scientific approach and transparency in how we assemble the information—

The Chair: Thank you.

Dr. Mona Nemer: —precisely to avoid any conspiracy theories and so on and so forth. This is just one example that we can—

The Chair: I'm sorry to cut you off, but we're at time. I appreciate that.

Monsieur Blanchette-Joncas, you have two minutes, please.

[*Translation*]

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

Ms. Nemer, I have a brief but important question for you. What is the current priority in terms of organizational change to adequately support the scientific ecosystem in Canada?

Dr. Mona Nemer: I'm not sure I understood the question correctly.

Mr. Maxime Blanchette-Joncas: May I rephrase it? In your opinion, what should be our priority if we are to be competitive internationally? What would you recommend?

Dr. Mona Nemer: In Quebec, the research funding system has just been overhauled. This will enable it to better support interdisciplinary research and to speak with a single voice on behalf of Quebec's research and science community.

As I may have already mentioned, at the federal level we need a science, technology and innovation strategy. We need to put in place the tools, the capabilities and the funding necessary to ensure its success. However, we also need to ensure that our system can support these ambitions through our organizations, our collaboration with the provinces, institutions, etc.

I think that's fundamental, and I hope that the scientific advice component will also be strengthened.

● (1145)

Mr. Maxime Blanchette-Joncas: What would be the consequences of not acting on the priorities you have just mentioned?

Dr. Mona Nemer: During the pandemic, we saw the consequences of not having the scientific, technological and innovation capacity to meet our needs. If we have to obtain technologies from elsewhere, we will be at the bottom of the waiting list. We won't be present to decide on the standards for these technologies or to share our values when they are deployed. This could have far-reaching consequences for us.

What's more, given the very serious competition from other countries that have put research and development at the heart of their economic development, we run the risk of falling even further behind.

[*English*]

The Chair: Thank you. You went a little over, but I thought that was a good point you were developing. Thank you for that.

Ms. Idlout, you have two and a half minutes, please.

Ms. Lori Idlout: *Qujannamiik.*

Just to very quickly follow up on my last line of questioning regarding indigenous traditional knowledge and how some of that knowledge conflicts with science, a specific example in Nunavut is around polar bears. Inuit had managed to conserve polar bears while hunting them and being sustained by them. The knowledge behind science I understand is increasing, but Inuit knowledge is still being ignored to a great extent, resulting in what Inuit are saying now: With the overpopulation of these predators, there has to be no choice but to kill them because of the quota system.

I just wanted to follow up to say how important your words were to say that indigenous traditional knowledge needs to be used, because it is science, and just to really push with this committee, when you're considering science, how traditional knowledge could be used to guide decision-making. There are very direct impacts when indigenous traditional knowledge is not being used.

To get to my conclusion, I want to ask you what your experience is with the Truth and Reconciliation calls to action and whether you know if there are any calls to action around science.

Dr. Mona Nemer: Yes, there are actions around research and the participation of indigenous people in research about them, and that affects them as well. That's something that I very much support. As I said, with the Canada Research Coordinating Committee, we do have an indigenous circle that is informing our directions in terms of research programs and working with indigenous leadership on this.

If I may, I would also like to take the opportunity to mention that the example that you've given about polar bears—predators—actually exists for other species as well. It's really very important. I think it's a perfect example of where western science can actually.... We need to incorporate climate change, right? I think that can be done in terms of the modelling using the tools of western science, but the elements that we put into those equations have to also come from traditional knowledge.

● (1150)

The Chair: Thank you.

Thank you for that line of questioning.

The committee is getting more and more into indigenous traditional knowledge. The study we just completed has been a real eye-opener for a lot of us, so it's very important.

Mr. Tochor, you have five minutes, please.

Mr. Corey Tochor: Thank you very much.

I'll just pick up on some of the studying you're doing that my colleague Ben Lobb was talking about. You've identified that the UFO study that you're doing right now is something that you initiated on your own. What are the other studies that you're conducting right now?

Dr. Mona Nemer: We have a number of studies that we are conducting right now. I'm happy to provide a list in case I forget some, but we are doing a study on the use of science and emergency preparedness, with recommendations based on what we've seen from the lessons learned from the pandemic.

Mr. Corey Tochor: Can I stop you right here? Please send that list.

However, on that study on COVID that you're doing, are you questioning some of the things that we did as a country—that there are some things we did well, some things that, given an opportunity, we would do again? Is that part of it?

Dr. Mona Nemer: The answer is yes, in the sense that we're not concerned with operations. We're really concerned with the science and the science advice, particularly for emergencies.

Yes, there are things that we did well and there are things that we can improve. Especially in emergencies that will last for a long time, we need to have sustainable systems. These are the kinds of things that we're looking at.

Mr. Corey Tochor: There were reports recently last month about the negative impacts of our policies around schools and the belief that locking down and limiting school use was negative to that generation. Will you be studying that?

Dr. Mona Nemer: This is really a very interesting question, because during the pandemic, we actually did a study on COVID and children. If I recall well, we made a number of recommendations, including keeping schools open for children, because we have to weigh health, the educational outcome, psychological and mental health, and the societal things. We have been wondering whether we should be revisiting some of the reports that we did that were using the knowledge that was up to date at that time, so it's an interesting question that you're asking me.

Mr. Corey Tochor: Can you forward that study to our committee afterwards, with the other questions?

Dr. Mona Nemer: I beg your pardon?

Mr. Corey Tochor: Could you forward me that study that you did, the one about COVID and—

Dr. Mona Nemer: I absolutely can, and with pleasure. It's on our website.

Mr. Corey Tochor: You spoke earlier about briefing different individuals. When was the last time you, in person, briefed the Minister of Science? What was the month?

Dr. Mona Nemer: I'll have to check my calendar, because I actually communicate with him very much by text and phone, so I will have to check when I last met with him in person.

Mr. Corey Tochor: Please do. It's good that you're texting with ministers. Hopefully, it's questions they have and answers that you might be providing.

I don't want the date—to make it as broad as possible—but when was the last time you were in the same room as the Prime Minister? I just want the month; it doesn't have to be the date. Was it this year, last year or the year before?

Dr. Mona Nemer: I mean, we're only two months into this year, so it's not this year. That much I can say.

Being in person, like now, is fantastic. Of course, during the pandemic, this was not possible. For a while after the pandemic, we continued to have virtual meetings and so on. I'd be happy to provide the exact date.

I just want to reassure the member of the committee that I am in touch with the Prime Minister's Office. It does respond to our inquiries. We provide it with recommendations, and it does acknowledge receiving them.

● (1155)

Mr. Corey Tochor: Did you provide any advice on the ArriveCAN app?

Dr. Mona Nemer: Mr. Chair, I'm a science advisor. I appreciate that science can be everywhere, but no, I don't provide advice on everything. In this particular instance, I had no role.

Mr. Corey Tochor: I just want to clarify.

There were no questions to your office about whether this was scientifically needed or about whether the research showed that something like this was needed. There was no communication from the government to you on anything to do with ArriveCAN.

The Chair: We're at time. Give a brief answer.

Dr. Mona Nemer: There were no communications on this.

Mr. Corey Tochor: Thank you.

The Chair: Thank you.

Now, to round up this second round, it's Ms. Bradford for five minutes, please.

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

Thank you to both of our witnesses for being with us here today.

Dr. Nemer, much of the last annual report centred around COVID-19. As you're presumably shifting your focus away from this and as we learn to live with COVID, what are the current future issues that preoccupy you in your office?

Dr. Mona Nemer: We've been quite preoccupied and active on several areas of climate science and biodiversity science. We've worked closely with Environment and Climate Change Canada and have supported them in the development of the climate science strategy that was released a week ago. We continue to work with them on the biodiversity science front.

I'd just like to say that science is not only about identifying the cause of the problem; it's also about proposing potential solutions, about monitoring progress and about implementation science as well. We do quite a bit there.

Right now, we're also updating the guide on science advice for the federal government, which dates back to 1999. We're continuing our work on open science. Specifically, right now we're looking at a framework for the research data. That's something that is very important, among other things.

Ms. Valerie Bradford: Thank you for that.

I understand that you have a youth council. Can you talk to us about your youth council? What are the issues that are top of mind for our young people? How are they contributing to the work done by your office?

Dr. Mona Nemer: We have the second cohort of the youth council. The first cohort, you may have noted, actually provided a substantive report on their vision for science in the country. I think it's really important to engage youth.

With regard to the new youth council, usually we involve them with the different reports that we're doing. They also carry out a project on their own. I believe the new cohort is actually interested in indigenous knowledge. I can't remember what other thing they have decided to do.

I would encourage you, actually, to have them here one day. They're really a great bunch of very enthusiastic, smart, caring individuals.

Ms. Valerie Bradford: What's the age range on your youth council?

Dr. Mona Nemer: When we recruit them, if I'm not mistaken, it's 18 to 30. It's not about what they're doing or whether they're students or not. It's the age range.

Ms. Valerie Bradford: How do you go about recruiting them? How is the outreach done?

Dr. Mona Nemer: It's an open call.

We get a lot of help from the youth organizations, universities and institutions. The institutions are very proud when one of their students is selected for the committee, so we get a lot of help. The first time, we had over a thousand applications. The second time, we decided to make it a bit harder.

● (1200)

Ms. Valerie Bradford: Do you ensure there's a broad range from across Canada so that it's not just one region that participates?

Dr. Mona Nemer: Yes, absolutely. We ensure we have a gender balance and that it's representative of the entire country. We have indigenous people on the committee, and we have people from visible minority communities.

This is the approach we have for all of our committees, not just the youth committee. We strive to have as much diversity and inclusivity as possible.

Ms. Valerie Bradford: Thank you so much. It's interesting.

The Chair: Thank you.

We're now going into the second half of the meeting.

By the routine motions, we'll be following the same format as this last round, with five minutes, five minutes, two and a half minutes, two and a half minutes, then five and five.

We're starting off with Mr. Soroka for five minutes.

Mr. Gerald Soroka (Yellowhead, CPC): Can it be six minutes?

The Chair: The committee can decide to change that, but....

Mr. Gerald Soroka: That's fine.

Thank you, Dr. Nemer, for coming today.

Were you or your office asked for advice on policy about sensitive technology research and the related banned entities list?

Dr. Mona Nemer: We have been involved with the government in the general area of research security and the identification of sensitive technologies, but that's the extent of our involvement. We haven't gone any further.

Mr. Gerald Soroka: What was the nature of your advice to them?

Dr. Mona Nemer: Our advice was around the identification of sensitive technologies, engaging with post-secondary institutions and the importance of harmonizing our approach with our allies and similar-minded countries.

Mr. Gerald Soroka: Do you feel your advice was reflected in the policy and the banned entities list, as well?

Dr. Mona Nemer: As I said, we don't audit whether the government follows our advice or not, and there's a reason for that. We don't want this to influence our advice. We don't want to self-censor and only advise on what we think they will follow. I just want to make this clear.

The other thing is this: We're not involved in policy development, other than providing advice on the areas related to science.

Mr. Gerald Soroka: You haven't gone back and looked at the policy to decide whether they've taken your advice or not.

Dr. Mona Nemer: As I said, we don't audit what the government does.

If I may, I want to say that research security is a very important and serious issue that goes beyond lists and sensitive technologies. Of course, this is one component, but research security has to be something that happens every day for everything.

It's also the way we conduct research and safeguard data in our labs and research institutions. It's about the support we provide to researchers to help them make sure their data is not being manipulated and so on.

Mr. Gerald Soroka: Thank you for that.

Dr. Mona Nemer: We have provided advice on that aspect as well.

Mr. Gerald Soroka: Considering Huawei's collaborations with Canadian universities and its ties to the Beijing government, what's your view on its absence from the banned entities list?

Dr. Mona Nemer: Mr. Chair, I honestly think this is a question that should be directed to others, including institutions and governments.

The Chair: That is a policy question, possibly more than—

Dr. Mona Nemer: I'm here to provide you with the work we do, not my opinions.

Mr. Gerald Soroka: If you don't want to answer, I understand.

If you have time, your 2021-22 annual report states that "Security should not serve as an excuse for turning inward" and that the "collaboration...has [often] supported peace".

Is that something you stand by, even though Canadian research collaboration has been used by foreign regimes to enhance their military capabilities?

● (1205)

Dr. Mona Nemer: I believe that science can be a force for good. I believe in science diplomacy. It doesn't mean that you have to be naive and enter into any collaboration at any price.

I can give a number of examples of fruitful collaborations between adversaries. I believe that as we speak and despite the conflict in the Middle East, the SESAME particle accelerator, for which people from different groups in the Middle East are involved, is still working.

Mr. Gerald Soroka: Okay. Can I just interrupt for a second?

Would you be able to provide the committee, in writing, with the number of times members of the government cabinet have asked your office for advice from the start of 2022 up until now, and the description of the advice they were seeking? Could you provide that to us in written form, please?

Dr. Mona Nemer: I believe we can do this, to the best of our knowledge, Mr. Chair.

The Chair: Thank you very much for that.

Now we'll go to Mr. Turnbull for five minutes. Go ahead, please.

Mr. Ryan Turnbull (Whitby, Lib.): Thanks, Chair.

Maybe just before I begin with questions for you, Doctor, I will say that the banned entities list that Mr. Soroka was asking about includes post-secondary institutions. Our government has made it very clear that the ban doesn't apply to companies, but we have given guidance on companies as well and how certain companies should not be funding research.

I will get back to the topic at hand here. Thank you so much for being here. Thank you for the work you do. We greatly appreciate it.

I want to ask you a little bit about disinformation.

Recently I read an article, I believe in the Toronto Star, entitled "Study confirms vaccine safety". I understand that the study was the largest, most comprehensive study on COVID–19 vaccines. We know that 99 million people were vaccinated as part of this study, and that 34 researchers, including Canadian scientists, participated in the study and collaborated on it. Dr. Jeff Kwong was recently quoted in this article saying, "The bottom line message is that COVID vaccines are very safe." There's a Canada research chair who said, later on in the article, "You don't live your life worrying about being killed by lightning—and you're more likely to be struck by lightning than to have an adverse event."

I'm very concerned about the resurgence of polio due to vaccine hesitancy and I feel as though the disinformation in this country that's being disseminated, mostly online, is having an impact on people's health and safety. I know this is something you've done a lot of work on, so with your knowledge, could you speak about how we combat that disinformation when the health and safety of Canadians are at stake?

Dr. Mona Nemer: This is clearly a very important question. I do share the preoccupation about the resurgence of some preventable diseases—not only polio, but chicken pox and others. I think science can help us in understanding vaccine hesitancy, because I don't think you can lump it all.... Not everyone who is hesitant towards vaccines can be lumped into the same bucket.

Of course, the absence of proactive engagement to present the data, to inform the public and to understand their preoccupation leaves a lot of room for disinformation and misinformation. That's something that is very serious, actually. Earlier there was a question about vaccine safety and the vaccine-induced myocarditis, for example. I just want to say that my expert committee during the pandemic actually looked into this. I had a whole bunch of experts—from cardiologists to infectious disease experts—and the data was clear that the chances, the risks, of having myocarditis following infection were 10 to 20 times higher than the ones from vaccination.

It's this kind of information that I think we need to maybe package better for the public, and we need to find ways to inform the public about it in culturally sensitive ways—especially vulnerable populations.

● (1210)

Mr. Ryan Turnbull: Thank you for that answer. I agree with you that it is about engaging the public and providing information in a way that's consumable by the public and, hopefully, consumable more easily.

I wanted to ask you one other question. Our government, I think, wants to put science and evidence-based research at the heart of the policy-making process. Obviously, you have a key role to play in ensuring that this happens or in helping to advise on that. Can you tell us how we can better work with you and ensure that this idea gets embedded in policy?

My concern is that sometimes science becomes politicized. I think you're doing your best to make sure it doesn't. I want the longevity to be the case—

The Chair: I'm sorry, but we're over the time. Possibly we could have something in writing—

Mr. Ryan Turnbull: Chair, you've been lenient with other people. Can I just ask—

The Chair: No. You're 17 seconds over the time.

Some hon. members: Oh, oh!

The Chair: I'm sorry.

Mr. Ryan Turnbull: Seventeen whole seconds....

The Chair: Sorry.

We will go to Mr. Blanchette-Joncas for two and a half minutes, please.

[*Translation*]

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

Ms. Nemer, has your office been consulted on the implementation of the recommendations made by the advisory panel on the federal research support system in its report, commonly known as the Bouchard report?

Dr. Mona Nemer: Yes, we were consulted on this. We had discussions on the subject with the office of the Minister of Innovation, Science and Industry, with the department and with other government officials.

Mr. Maxime Blanchette-Joncas: Thank you.

Can you give us your analysis of the world rankings? How does Canada compare with other countries?

Dr. Mona Nemer: Earlier, you asked me a question about performance indicators, and I didn't get a chance to give you a full answer.

In addition to the rankings drawn up by the Organisation for Economic Co-operation and Development, or OECD, and the rankings of our institutions and universities, rankings can also be drawn up on the basis of patents granted in certain sectors.

Australia recently carried out a similar analysis, if I remember correctly. I can send you the study, which is quite interesting. According to this study, there are six areas in which Canada still ranks among the top five.

Let me ask my colleague how many technologies had been evaluated—

Mr. Maxime Blanchette-Joncas: You can send it to me in writing, Ms. Nemer.

Dr. Mona Nemer: Okay.

Mr. Maxime Blanchette-Joncas: I want to come back to what I think is the crux of the problem. It's also mentioned in the report by the advisory panel on the federal research support system. I'm talking about investment in terms of gross domestic product, or GDP. You can guess that Canada is not at the top of the ranking; it is right at the bottom. Canada is the only G7 country to have reduced its investment in research and development over the last 20 years.

You will also be aware that in the last two federal government budgets, not a penny has been allocated to the three granting agencies, and not a penny more is expected to be granted in the next budget either. I'd like to know what you think. If we don't invest, we're not competitive and we're also slowing down our capacity for innovation.

You gave a very good example earlier about vaccines. Canada was the only G7 country unable to produce its own COVID-19 vaccine. Once again, between you and me, that's—

[*English*]

The Chair: Unfortunately, we are over time again. I'm sorry.

The time is going quickly, but we're 17 seconds over time, so I'm trying to keep things rolling. Maybe we can pick it up in your next round. We should have another three opportunities for you.

Mr. Davies, welcome to our committee. It's great to see you here.

Mr. Don Davies (Vancouver Kingsway, NDP): Thank you, Mr. Chair.

The Chair: You have two and a half minutes.

Mr. Don Davies: Thank you.

The annual report of the chief science advisor in 2021-22 identified one of your priorities as "augmenting the role of science in Canada's emergency preparedness". We're advised that your office has done a great deal of work on assisting the federal government with pandemic responses.

I'm wondering if you could share what some of the key lessons are on pandemic responses since the emergence of COVID-19.

● (1215)

Dr. Mona Nemer: I think there are many lessons learned in terms of science and science advice. I would say that on the positive side, science did inform the decisions. Scientists stepped up to the plate. You know they were part of many expert committees. At the same time, there were too many expert committees. It's unsustainable. It might be okay if the emergency lasts for a few months, but if it lasts for a few years, it's another story. We need to have a better way of doing this.

If we look at other countries, we see that they have better frameworks for the provision of science advice to government in cases of emergencies. I would suggest that we look at embedding the role of the chief science advisor and their responsibility in emergency preparedness and in the connectivity with the rest of the government.

One other thing I will say is that over the past few years, we have put science advisers in several departments. We're very pleased that the Department of Public Safety has come to the conclusion that having a science adviser in its department will be helpful to it. I think that's a very good development.

Mr. Don Davies: Thank you.

Speaking about other countries, the British Medical Journal has recommended that Canada conduct a public inquiry into all aspects of the way the federal government handled the COVID-19 pandemic, as the U.K. has done.

As Canada's chief science officer, do you agree that this would be a helpful step?

Dr. Mona Nemer: In all truthfulness, I haven't considered a public inquiry. I think that's way beyond my responsibilities.

However, I agree with conducting a review of how well we did in terms of the coordination and prioritization of science, research and science advice. It's why we have asked Sir Mark Walport to chair a committee that is looking into precisely this question.

The Chair: Thank you. I wish I could turn back the clock, but we are at the time again.

Mr. Maguire, welcome to our committee. It's great to see you. You have five minutes.

Mr. Larry Maguire (Brandon—Souris, CPC): Thank you, Dr. Nemer, for your presentation today as well.

I had the opportunity of sitting on the natural resources committee a little over a year ago. I think it was the first time my office contacted you in this regard, on the topic of UAP, or unidentified anomalous phenomena. A lot has been been written and presented to the U.S. Congress on this topic. Scientists and experts in that field have briefed Congress on it. I know that our Canadian minister has been briefed. Some of our people here have been as well.

Is this a topic you would be interested in studying?

Dr. Mona Nemer: Mr. Chair, we have actually initiated a study on this subject, and we made it public that we are carrying out the study. I must say that it has generated a lot of public interest.

Mr. Larry Maguire: The Department of Natural Resources was looking at why these particular objects, or whatever they are, hover around nuclear facilities. I would think that this is of special interest. I've also seen that in some of the documents from France as well.

Can you comment on any connection you may have seen in that area, particularly in the study you're doing? What sorts of things are you studying?

Dr. Mona Nemer: Perhaps I can briefly summarize what our study is about.

What we're doing is looking at the process by which public reporting of unidentified aerial phenomena happens in the country and looking at making recommendations, if need be, on whether we need to improve on the system to help us align our efforts with those of our allies.

● (1220)

Mr. Larry Maguire: Have you asked any witnesses to come before your committee? Have you met with people from the U.S. who have been public at Congress on this?

Dr. Mona Nemer: Yes. Right now we're wrapping up, but we're continuing our contact and exchanges to gather information, both in Canada and outside of Canada. We have spoken with experts and self-identified experts who are working in this area.

Mr. Larry Maguire: I have a couple of quick questions.

Have the departments and agencies been forthcoming with the information you requested from them? When will the Sky Canada project be completed and publicly released?

Dr. Mona Nemer: We sent questionnaires and requests for information to several departments that we think have been involved over the years or that may be involved right now. I will say that at the working level, we have received information from some.

The enthusiasm and responses have been uneven. We haven't taken it a step further, but we'll make sure we get the information that we need.

Mr. Larry Maguire: Yes. As we've seen in Congress, they've started to legislate that the information should be released.

Will any of your recommendations be about government transparency and the importance of releasing raw data and information to scientists and researchers here as well?

Dr. Mona Nemer: We're not at the stage of recommendations yet, but I could perhaps offer the following.

Based on what we have gathered in terms of information so far, I think there is room for improvement around gathering and reporting on the information, and also in making it available to researchers and the public. I think these are the kinds of things that, if the information.... Of course, I can appreciate some information may be a national security concern, but I believe that, by and large, you can make the information public.

I think that's the best way to mitigate conspiracy theories and disinformation.

Mr. Larry Maguire: Exactly, yes. Thank you.

Do you believe it would be prudent, then, for parliamentarians to study your recommendations once they're released?

Dr. Mona Nemer: Well, of course—

Mr. Larry Maguire: We could have a committee like this.

Dr. Mona Nemer: —you're free to study it. I would certainly feel honoured that you've taken one of my studies and given it further study.

Mr. Larry Maguire: Thank you very much.

The Chair: Thank you, Mr. Maguire.

Ms. Kayabaga, you have five minutes to finish this round.

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

[*Translation*]

Ms. Nemer, I would like to welcome you to the committee. Thank you for all the work you do and the value you bring to your role.

[*English*]

Dr. Mona Nemer: Thank you so much for your interest and for the support of the committee for the role.

In one of your earliest reports, I believe you recommended that the role of the chief science advisor be enshrined in legislation. It's something that I very much agree with. I think this would safeguard the objectivity and the independence of the role. Another aspect, of course, is that as I mentioned, we're developing science advisers in various departments, and I very much believe that this network of science advisers will also be a value added for the country, for the government and for Canadians.

I think there also needs to be connectivity between the science advice, perhaps, and the federal science prioritization—the strategic thinking around science in the country. For example, having a national advisory council, I would say, on science and technology, in which the science adviser would play a role, would also be very significant for the country. I believe this is something that has been recommended in two reports now. My view is that these are appropriate observations and will be positive developments for the country when they happen.

● (1225)

Ms. Arielle Kayabaga: I appreciate that. I think that's a really good answer, and it connects to my next question.

What are the lessons that you think we've learned through COVID, and how do we responsibly get into innovative AI? AI is taking over right now. There are a lot of conversations around COVID and AI.

In terms of countering misinformation or disinformation—I think earlier someone talked about the lack of information around vaccines and the hesitancy around vaccines—what kinds of recommendations would you make to make sure that when we're doing our work and as we advance technology, we're being responsible and implementing policies that directly respond to the lessons we learned through COVID?

Dr. Mona Nemer: It will really be a missed opportunity, I think, if we don't take the lessons learned from the pandemic—constructively, that is.

In terms of the science and science advice, the federal government provided significant investment into research during the pandemic. I think that investment could have been better used if our system were not fragmented. We're still going along the lines of disciplines. Here, we actually had a problem to deal with that required all the disciplines.

Really, it required a different kind of approach and a different kind of prioritization as to what needed to be done between the extramural community and the government scientists—for example, the National Microbiology Lab, and others as well. I think we need to look into how we make these connectivities and this fast decision-making better and make sure that we have the tools and the capacity—the human capacity and the physical capacity—to respond to emergencies in the country.

We talk a lot about the pandemic, but we have climate emergencies over and over, and of course they will have an effect in terms of health, in terms of displacement of the population—you name it.

Ms. Arielle Kayabaga: Yes.

Dr. Mona Nemer: It's going to touch on so many different areas. You need to have an integrated approach, with science converging to solve the problem in all its dimensions.

Ms. Arielle Kayabaga: When we—

The Chair: Thank you.

I'm sorry, but we are out of time again. That finishes the third round.

We should have time for a complete fourth round if we can keep our time within the limits.

We will start with Mr. Tochor for five minutes, please.

Mr. Corey Tochor: Thank you very much.

Do you think we should question science?

Dr. Mona Nemer: Science questions itself. The way we improve our knowledge is by questioning what we know and what we don't know and designing ways to enhance this knowledge and, through that, gathering knowledge through an objective means.

Mr. Corey Tochor: Thank you, Dr. Nemer.

On the questioning of science, you talked about your study on UFOs right now. In the 1960s, people would say they were conspiracists, that it was misinformation and that there were no other vehicles. Now we have the chief science officer of Canada saying that she's studying them.

What would you say to anyone back in the 1960s who had concerns about UFOs?

Dr. Mona Nemer: I think we need to be careful about revisiting the past, especially when it comes to science. We're just not going to start questioning Galileo, right? Actually, there is a Galileo project at Harvard to scientifically examine unidentified aerial phenomena.

Mr. Corey Tochor: Yes, Dr. Nemer, there are people who questioned whether we have a flat earth, and they were stoned to death if they challenged the belief that we're the centre of the universe. That's no longer the case; thankfully, we do question what we believe to be true. That's how we either prove what our current belief is or what our new belief would be, based on what the science has shown.

Just to switch gears a little bit—I only have a few minutes left—in your office, how many consultants do you typically hire in a year?

● (1230)

Dr. Mona Nemer: Actually, I don't think we hire consultants. Our expert panel members work pro bono. That's the scientific culture.

Mr. Corey Tochor: There are no consultants.

Of your staff, are they all back in the office now?

Dr. Mona Nemer: Do you mean physically?

Mr. Corey Tochor: Yes.

Dr. Mona Nemer: Well, we're following the recommendations of the Treasury Board and the Government of Canada, and they're in the office at least three days a week.

Mr. Corey Tochor: Everyone is in your office three days a week where you're located.

Switching gears just a little bit, back to what you study and the order, you said that there's a list that you can compile of the current studies. In any of the work you've done, have you admitted to coming to a false conclusion? After you review something, have you ever come to the realization that your belief before was wrong, and now you have a different take on things?

Everyone makes mistakes. When was the last time you can say you made a mistake?

Dr. Mona Nemer: I think this is a difficult question. Perhaps I can help clarify.

When we do a report, for example, we always mention that this is based on the evidence available as of that date. If the information changes, then we'll take another look at it.

That's precisely what we're doing, actually, just this afternoon, with the long COVID. We've reconvened the expert committee one year after we put out the report because it was based on data up until December of 2022. Now there have been developments, and we're reconvening. We will put out—I don't know if it's going to be a correction, but it will be an update, for sure, on where the science is, and any further or newer recommendations that we will be providing will be based on that.

Mr. Corey Tochor: Have you considered studying anything to do with mental health limitations in Canada, and how science could relate to new treatments and analyzing what we're doing now?

Seemingly, a lot of Canadians are worried about addictions. What we are told by science and academia is that what they're doing in British Columbia should be utilized within the Liberal drug policy across Canada. I think there are many Canadians who are questioning whether academic analysis is the smart way to have a drug policy in Canada.

Dr. Mona Nemer: We recognize that this is a very important topic. Mental health and substance abuse are very important. Many years ago, we considered doing a study on that, but at the time Health Canada and the Public Health Agency were doing a study. We try not to duplicate studies. We take on things we believe require more than one department and so on. I cannot tell you whether we will revisit this or not, but, you know—

Mr. Corey Tochor: Did Health Canada shut you down, then?

Dr. Mona Nemer: No, they didn't shut me down.

The Chair: Okay, thank you.

Now we go to Dr. Jaczek for five minutes.

I understand you're splitting your time with—

Hon. Helena Jaczek: Yes. Ms. Kayabaga will take the first minute or so.

Ms. Arielle Kayabaga: Thank you so much.

I want to quickly ask this question.

We're talking about science integrity and transparency. Given that COVID-19 disproportionately impacted racialized communities, what lessons and infrastructure does your office think should be in place for the government to better respond to other pandemics and climate change impacts, as you mentioned?

Dr. Mona Nemer: Thank you very much. This is a very important question, and one for which we had several expert committees that included sociologists, psychologists, communication experts and people from the community.

I think we need to be engaging with communities not only in a crisis but also on an ongoing basis. There's a lot to gain for everyone in doing so. It's one of the recommendations we already put out, and probably one you'll see again in our recommendations in terms of the use of science for emergencies.

● (1235)

Hon. Helena Jaczek: Thank you so much for that, and thanks for that important question, Arielle.

I'll go back to funding for research activities in Canada.

Back in 2017—the year, in fact, you were appointed—Canada's fundamental science review made a number of recommendations. The one I'm particularly interested in is a formal coordinating board for Canada's research granting agencies. We've heard that overall, Canada is not spending as much as other OECD countries in terms of research and development. We have, of course, as you know, the granting agencies federally.

Would it be useful to have such a formal coordinating board to create some efficiencies if we are not going to increase the actual budget? Would there be some value in having this recommended coordinating board?

Dr. Mona Nemer: I think this is a very important question.

I would say that we need to look at what others have done or are doing. I mentioned Quebec. Recently, they brought together their different granting bodies under one umbrella, which provides efficiencies and, above all, coordination—no gaps for certain fields.

I believe such an approach is also particularly important for what I would call mission-focused research and development activities. Other countries, such as Germany, Australia, the Netherlands and the U.K., have a single agency. I think that's definitely something that can and should be considered in the context of better alignment and to minimize duplications of programs for researchers. Every time you have a program, you have people applying, but you also have people reviewing. It's a lot for a small country like ours.

Hon. Helena Jaczek: I want to elaborate a bit on the role of scientific advisers within some departments. Those individuals report, presumably, up through the department. How do they relate to you? Could you elaborate a little?

Dr. Mona Nemer: Yes, I can, with pleasure.

Actually, there was a recommendation to the government to enhance science advice in government, and it was based on the U.K. and New Zealand models.

Yes, these science advisers are usually seconded from outside of government for a specific period of time on a part-time or full-time basis. It depends. They report to the deputy minister of the department, but they also work with me and my office as part of a network. What we do together is look at horizontal issues. For example, they were involved in the science workforce and science integrity policy. We're developing some online learning modules together for science integrity and science advice.

Essentially, this approach provides departments and the government in general with increased deep expertise in different areas, and the department—

The Chair: Thank you. I think we got the thought.

We now go over to Monsieur Blanchette-Joncas for two and a half minutes.

[*Translation*]

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

Ms. Nemer, I'd now like to turn to our next topic, the concentration of research funding in higher education in Canada.

I'd like to hear what you have to say about this.

Dr. Mona Nemer: That's a very [Inaudible—Editor] question.

If I understand correctly, you want to know whether it is a good idea for universities or post-secondary institutions in different parts of the country, which may have different—

● (1240)

Mr. Maxime Blanchette-Joncas: I'll be more specific, Ms. Nemer.

During our last studies, some researchers mentioned that a small number of researchers had access to the majority of funding. There is therefore a concentration of research funding in certain organizations, but also among certain researchers. As a result, fewer researchers are able to meet the conditions for obtaining funding.

As chief scientific adviser, do you think this is a problem for Canada?

Dr. Mona Nemer: This probably affects Canada and all scientific circles, because sometimes success breeds success. We need to ensure that openness, inclusion and diversity are kept in mind when evaluating research projects and invitations to tender. If we don't do this, a small number of researchers will be working on a small number of subjects and there will be huge gaps in several areas. What's more, it's never good to always have the same bosses, the same thinkers, the same ideas.

In my career, I've often been a bit of an outsider. My research focused on the heart, even though I had never studied that organ. I didn't come with any background, which was very good, I think. That's important.

Mr. Maxime Blanchette-Joncas: Okay.

When you talk about diversity, are you also referring to distributing funding more equitably in the smaller universities—that is, the small and medium-sized universities—rather than in the large universities, which claim a large proportion of research funding?

Dr. Mona Nemer: Don't get me wrong: Everyone needs more investment in research, small and large universities alike.

It's important for small universities to thrive and for researchers to give young people a taste for research, to give them training and practical experience.

Moreover, these institutions are always—

[*English*]

The Chair: Thank you. That's what you were looking for.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Ms. Nemer, can you send a written response to the committee?

Dr. Mona Nemer: Yes, it would be a pleasure.

[*English*]

The Chair: We're 30-plus seconds over.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Mr. Chair, I would like to receive a written response.

[*English*]

The Chair: I know. That was good.

I also want to ask about the polytechnic mix, but maybe I can squeeze that in at the end.

Mr. Davies, go ahead, please, for two and a half minutes.

Mr. Don Davies: Thank you.

Support Our Science has evidence that 62% of Canadian-trained Ph.D. graduates leave the country. What recommendations do you have to stop that brain drain?

Dr. Mona Nemer: We definitely don't want to have a brain drain. I'm not aware of the study you are referencing. I'm not questioning it, but I just want to qualify that by saying that sometimes that includes people who are leaving the country to train and then come back or who are going for post-doctoral studies, for example, and coming back. I think a longitudinal analysis of where our trained people go and how many of them come back is very important.

Mr. Don Davies: Do you know, Dr. Nemer, what percentage of Canadian-trained Ph.D. graduates leave the country for good?

Dr. Mona Nemer: I don't know this offhand. I hope it's not as high as what we had in the1990s. We need to keep all the talent we can in this country.

Mr. Don Davies: Of course.

The values of the Canada graduate scholarship—$17,500 for master's students and $21,000 for post-doctoral—have not changed since 2003. That's over 20 years. As well, the federally funded post-doctoral fellowship stipend of $45,000 has been constant since 2015.

Speaking before this committee, Dr. Shaun Khoo, a post-doctoral fellow at the Université de Montréal, said “Canada's academic institutions are not just competing with other countries for talent.”

What have you done or what recommendations have you made, if any, to get the government to increase these amounts?

Dr. Mona Nemer: I fully support funding graduate and postdoc students at the appropriate level and a competitive level. I don't think it's good for the country that we have some of our best minds living under the poverty line.

Yes, they will go to other places that will benefit from them, so I have very much been a supporter of increasing the value of the scholarships—

● (1245)

Mr. Don Davies: Have you made a formal recommendation to the government to that effect?

Dr. Mona Nemer: I have.

Mr. Don Davies: If I can, I'll squeeze in a quick one.

The Canadian Task Force on Preventive Health Care is funded by PHAC. There have been criticisms that it does not include members with subject matter expertise and it doesn't rely on current scientific data.

Are you aware of that issue, and have you looked into that at all?

The Chair: Answer very briefly. We're over time now.

Mr. Don Davies: Thank you, Mr. Chair.

Dr. Mona Nemer: Very briefly, there is a chief scientist at PHAC who's a member of my network of science advisers, and she has taken the lessons learned from the pandemic. She's set up an expert committee, for example, on avian flu, so I'm very encouraged by this.

The Chair: Thank you.

We have, according to our routine motions, space at the end for another Conservative round and another Liberal round of up to five minutes. Who's going to take the Conservative round?

Okay. It's Mr. Maguire.

Looking at the clock, I'm going to need a few minutes myself, so let's make it four and four.

Mr. Larry Maguire: Sure.

I have a couple of things with regard to what I was saying about UAPs earlier, Dr. Nemer.

Do you know when the Sky Canada project will be completed and publicly released?

Dr. Mona Nemer: Yes. We have provided timelines for this. We're about to start drafting the report, while continuing to gather information. We should be on track to release the report at the end of summer or in the early fall.

Mr. Larry Maguire: Has your office reviewed the Government of Canada's historical documentation, including previous efforts such as Project Magnet?

Dr. Mona Nemer: We have gathered a lot of historical information. I think our report is going to be quite fascinating on the historic front, so stay tuned.

Mr. Larry Maguire: I'm wondering as well about Nav Canada, which is a receiver of many UAP reports but isn't very transparent. Has the Sky Canada project team sat down with it about how it can release more information for scientific investigations?

Dr. Mona Nemer: I'll have to ask my team if they have sat down specifically with NavCan. I cannot answer this, but we have reached out and sat down with many of the folks who collect the information right now.

Mr. Larry Maguire: Have any of the departments or agencies flat out rejected giving you information, based on national security or classification concerns?

Dr. Mona Nemer: I don't believe they have rejected giving us information. Sometimes the information is more complete or more cryptic than we'd like it to be, which is why in some cases I will be engaging directly with the deputy ministers to make sure that we have the information we need.

Mr. Larry Maguire: Has the Sky Canada project spoken with the American UAP office about how it scientifically investigates evidence, such as through using video and radar? If so, what has it learned?

Dr. Mona Nemer: We have spoken with several American counterparts, including at the Galileo Project that I mentioned earlier. They're looking at this scientifically with some of the NASA people. I've spoken with the chief scientist at NASA and with many other individuals who are part of the very active work on UAP in the U.S.

I think we've been quite well connected, but we're also connected with the Europeans—the French agencies—as well.

Mr. Larry Maguire: Have you yourself had any discussions with the government UAP office in the United States?

Dr. Mona Nemer: I have not, myself.

Mr. Larry Maguire: Has your department had discussions with them?

Dr. Mona Nemer: They have, with different folks. I'm sorry. I don't remember their names, but we can certainly forward them.

I can tell you we're taking this seriously and speaking with.... I'm sorry.

The Chair: Go ahead.

Dr. Mona Nemer: I just want to say that we're taking a very thorough approach to this and making sure our recommendations will be based on the best evidence and interactions we've had.

Mr. Larry Maguire: Thanks so much.

● (1250)

Mr. Corey Tochor: We're going to give the last minute to Maxime for his question.

The Chair: There are about 20 seconds left.

[*Translation*]

Mr. Maxime Blanchette-Joncas: Thank you.

Ms. Nemer, you have drawn up a roadmap for open science. Have you ever recommended that the government set up a national archive bank, a national archive platform like the one that exists in France?

Dr. Mona Nemer: We have just launched the open science platform for publications that, for the time being, come from federal government researchers. I hope that it will eventually include researchers outside the government who benefit from federal government grants.

[*English*]

The Chair: Thank you.

Mr. Turnbull, bring us home in four minutes, please.

Mr. Ryan Turnbull: Thanks, Chair. It's great to have a bit more time.

Dr. Nemer, thank you again for all your testimony today.

I want to go back to misinformation or disinformation, because it's something that I know you've said is a threat to science and our democracy.

Where do you think disinformation and misinformation are having the biggest impact on Canadians' confidence in science?

Dr. Mona Nemer: This is a good question.

I don't believe we have the kind of data that will allow us to answer your question appropriately. However, the Council of Canadian Academies put out a study that suggests that disinformation during the pandemic actually cost Canadians their lives, and a lot of funding and resources as well.

Mr. Ryan Turnbull: I mentioned vaccine hesitancy as one of the impacts it's probably having. Are there other areas where you can see impacts—where disinformation is acute, in the sense that the impact is noticeable and concerning to you?

Dr. Mona Nemer: Any societal question can become a target for disinformation.

Personally, I worry about, for example, disinformation when it comes to climate change adaptation and mitigation. We just can't afford to have ongoing disinformation in that area.

Mr. Ryan Turnbull: Is there any question in your mind about the reality of climate change, given the scientific evidence?

Dr. Mona Nemer: Do you mean whether it's happening?

Mr. Ryan Turnbull: Yes.

Dr. Mona Nemer: I have none whatsoever. The data is clear.

Mr. Ryan Turnbull: It's 100% clear, from your perspective. It's clear that science says climate change is real.

Dr. Mona Nemer: Yes.

Mr. Ryan Turnbull: Great. I agree with you. I just wanted to get that on the record.

How much more time do I have?

The Chair: You have one and a half minutes.

Mr. Ryan Turnbull: You're so generous.

The Chair: Yes.

Mr. Ryan Turnbull: You also mentioned being proactive and how transparency is probably our greatest principle to help us address disinformation. You mentioned involving the public, I think, in response to my earlier question about vaccine hesitancy.

How do we be proactive in encouraging the uptake of critical thinking skills? It seems like we need a national campaign of some sort to combat disinformation. Would you agree with that, and what would that look like if you do agree?

Dr. Mona Nemer: I very much agree.

Earlier, I wanted to mention science literacy. I didn't get a chance to do that. I think that's something that we, collectively, can do. It's something that is in the best interest of the country and the population. It empowers them to make decisions for themselves and to be able to tell what is real and what is not. That, of course, impacts so many decisions in their lives.

I think citizen science is also a very good way of encouraging understanding of what science is and is not, and also of instilling confidence in the public in terms of data collection and the data that is being used to justify certain actions.

I think we can work on many fronts on this.

Mr. Ryan Turnbull: Thank you very much.

The Chair: Thank you. You're right at time.

I want to sneak in a question on polytechnics in applied science, if you might comment.

We've talked a lot about universities. Do polytechnics play a role in your office?

● (1255)

Dr. Mona Nemer: Anyone doing research and science is more than welcome. We've engaged with polytechnics and with the colleges and universities.

I would just like to say that sometimes we have too much focus on fundamental research versus applied research. I think that we need to remember what the definition of applied research is: Applied research is research aimed at a question. In this sense, any engineering question, any sociology question, any health science question also fits under applied research.

The Chair: Thank you.

Dr. Mona Nemer: I think in this country we need to be supportive of all kinds of research.

The Chair: Thank you very much, and thank you for being with us. The time went really quickly.

Thanks to the members for your excellent participation and questions and thoughtfulness.

We will be meeting again on Thursday to look at version two of the report on impacts of pay gaps at Canadian universities. There's been a little bit of a delay on getting that report to you. I apologize. We should have it back from translation in a PDF format to get to you early this afternoon.

Shall we adjourn?

Thank you. The meeting is adjourned.