

Fonds de recherche du Québec

Société et Culture
Santé
Nature et Technologies





DOING RESEARCH DIFFERENTLY...

For several decades, the Fonds de recherche du Québec (FRQ) I lead have supported research and the training of future generations of researchers, always adhering to the strictest standards of excellence. Today they are pursuing this mission with the desire to recognize those who venture off the beaten track, whether in terms of research or the dissemination of research findings.

Accordingly, the FRQ are seeking to encourage scientists from all disciplines to work together and adopt a bold approach. They want to motivate the scientific community and civil society to engage in joint projects, in addition to fostering dialogue between science and society, especially given today's context of social media and the proliferation of sources of information and disinformation. The FRQ aim to bring science closer to the people and the people closer to science, to make scientific knowledge a leading source of information. They also want to engage citizens in scientific activities in order to familiarize them with science. Continuous and sustained dialogue between the research community and civil society allows for the democratization of knowledge, enriches social and environmental awareness, and is essential for ensuring the development of a science culture and strengthening critical thinking.

With these aims in mind, the FRQ created the AUDACE, ENGAGE and DIALOGUE programs, three initiatives for conducting and communicating research differently. Launched in 2017, AUDACE has unveiled its second cohort of recipients and is now in its third competition; ENGAGE and DIALOGUE were launched in the summer of 2019.

By supporting high-risk research projects that break with established frameworks and patterns of thought, AUDACE enables the scientific community to pursue its wildest projects. Original research with high impact potential that explores new fields of knowledge and gives rise to unusual or unlikely collaborations, such as historians with mathematicians or neuroscientists with visual artists. DIALOGUE supports researchers with their public science communication activities, while ENGAGE promotes the active participation of citizens in research. Both programs fall under the Science and Society component of the FRQ's 2018-2022 Strategic Plan, which aims to intensify interactions between the research community and the civil society. I am hopeful that these three initiatives will transform the research landscape in Québec for the greater benefit of all.

In addition to these initiatives, we have taken a first step towards increasing the visibility of the FRQ within the research community, as well as among citizens and elected representatives. At the time of the funding announcements in April 2019, we launched a promotional campaign with the hashtag #communautéFRQ, inviting the scientific community to display their pride at being funded by the FRQ on their social media platforms. Many people have supported the campaign, including student researchers, and I thank them for that. We are counting on all those who receive FRQ funding to mention it in their communications, because it is important to remind our fellow citizens and our government representatives about the importance of public funding for research.



Rémi Quirion, OC, CQ, PhD, FRSC
Chief scientist of Québec

**Chief scientist
of Québec's Report**

2018-2019

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- **Scientific missions and agreements**
- **Conferences and public affairs**
- **Intersectoral project development**
- **Promoting research**

Québec 

CONTEXT

The third year of my second mandate was marked by the coming to power of the government of François Legault, following the elections of October 1, 2018. From the start, the new government affirmed its intention to pursue the implementation of the Québec Research and Innovation Strategy (SQRI, 2017-2022) and the Québec Life Sciences Strategy – both launched by the previous government –, even expressing a desire to do more, and better. This is a very positive development, since these strategies were well received by most stakeholders in Québec's research and innovation sector. The same is true for various other government strategies adopted over the past two years. We can therefore concentrate on the actions and objectives of these strategies, which involve the Ministry of Economy and Innovation, as well as many other departments.

I have met several times with Pierre Fitzgibbon, Minister of Economy and Innovation, to whom I report. A very pragmatic man, he has proved to be highly attentive and interested in our work. He has also taken part in several of our activities, including the three science breakfasts with members of the National Assembly. I have had the opportunity to speak with most of the current ministers, who are also very interested and open to our actions. With their support, the FRQ will certainly become more dynamic and engaged in the development of research and the research community in Québec, Canada and around the world.

On April 1, 2019, we launched the FRQ Open Access Policy for the Dissemination of Research, which embodies the FRQ's determination to contribute to making the research they fund more open, equitable and responsible, in a spirit of sustainable development. Discussions are also underway with Science Europe – a European association representing major public research and research funding organisations – and UNESCO, to promote open access to publicly funded research results.

The government approved the FRQ's 2018-2022 strategic plans in April 2019. They are now available for consultation on our respective websites. Once again, I thank the entire FRQ team and the members of the three boards of directors for the quality of their input on this important planning exercise.



Our leadership team is finally complete. On July 18, 2019, the Cabinet appointed Carole Jabet as scientific director of the Fonds de recherche du Québec – Santé (FRQS). The appointment came a few months after that of Janice Bailey as scientific director of the Fonds de recherche du Québec – Nature et technologies (FRQNT). With Louise Poissant, scientific director of the Fonds de recherche du Québec – Société et culture (FRQSC), I can now count on three exceptional women (a first!) to guide the next phase in the FRQ's development.

KEY ACHIEVEMENTS

◆ Scientific missions and agreements

MISSION TO JAPAN

The 15th Annual Meeting of the Science and Technology for Society Forum, which took place from October 6 to 8, 2018 in Kyoto, brought together more than 1,400 high-level participants, including several politicians, corporate executives and Nobel laureates. Rémi Quirion took the opportunity to meet with several leaders of Japanese and international organizations. He gave a talk on the impacts of the environment on health, and witnessed the signing of collaborative research agreements between McGill University and the prestigious Riken Institute, and between McGill and Kyoto University. His mission continued until October 11, when he took part in the Innovation for Cool Earth Forum and in discussions on the possibility of a Japan-France-Québec partnership in the fields of precision medicine and artificial intelligence.

PARTICIPATION IN THE G3 QUALITÉ SYMPOSIUM

Qualité, a symposium organized by the G3 group of French language universities, was held at Université de Montréal from October 24 to 26, 2018. During this event, whose theme was *Quality approaches in higher education: what is their impact?*, the Chief scientist of Québec outlined several challenges to be faced by universities, including bold research, open science and open access. He also stressed the importance of a university education that encompasses the principles of equity, diversity and inclusion.

MISSION TO BOSTON

The Chief scientist of Québec visited Boston on January 24 and 25, 2019 at the invitation of the Québec delegate in Boston. This brief mission was an opportunity for him to take part in a round table on the social, ethical and governance impacts of artificial intelligence and digital technologies – held

by the Delegation and the American Academy of Arts and Sciences – and a science evening during which Québec's research and innovation model was presented, eliciting many questions from young researchers interested in coming to Québec.

MISSION TO FOUR COUNTRIES

From February 4 to 17, 2019, Rémi Quirion took part in a mission that combined several science diplomacy activities associated with his role as vice chair of the International Network for Government Science Advice (INGSA). It was the perfect opportunity to introduce the FRQ and explore collaborations to be developed with the Netherlands and Oman and to be finalized with the European Commission and INGSA-North America.

MEETING WITH A DELEGATION FROM LUXEMBOURG

In February 2019, Rémi Quirion received a delegation from Luxembourg at the FRQ's Montréal office, made up of managers of the University of Luxembourg Incubator, as well as academics and government and private sector leaders, to explore the creation of joint research and development programs. Particular emphasis was placed on the digital technologies, life sciences, management, high finance, engineering, transport and sustainable development sectors.

MISSION TO FRANCE

Interested in learning more about France's Agence nationale de la recherche and comparing its research management practices with those of the FRQ, the Chief scientist of Québec led a mission to France from April 5 to 8, 2019. He took the opportunity to meet the new Chairman and CEO of the Institut national de la santé et de la recherche médicale, Gilles Bloch, and to give an interview to the *Science et Enseignement Supérieur* newsletter of the Québec Government Office in Paris.



Bernd Sibler and Rémi Quirion at the signing of the agreement between Bavaria and Québec.

BAVARIA-QUÉBEC SCIENTIFIC COOPERATION AGREEMENT

On the occasion of the 30th anniversary of cooperation between Bavaria and Québec, on April 15, 2019 the FRQ renewed a scientific cooperation agreement with the Bavarian State Ministry for Science and the Arts. Accompanied by a delegation of 20 university presidents and two members of the Bavarian Parliament, Bernd Sibler, Bavaria's Minister for Science and the Arts, strengthened academic and scientific ties between Bavaria and Québec. For his part, Rémi Quirion noted that scientific collaboration between Québec and Bavaria is very fruitful and deserves support.

MISSION TO LONDON

From April 25 to 29, 2019, the Chief scientist of Québec led a mission in London, which was much needed in the context of upcoming major changes in the organization of research in Britain, Brexit and the European Community elections. British colleagues were highly interested in developing various collaborative programs with the FRQ, particularly in the areas of northern and polar research, artificial intelligence, biotechnology and life sciences, as well as the humanities and social sciences.

◆◆◆ Conferences and public affairs

BRENDA MILNER CENTENNIAL SYMPOSIUM

A symposium in honour of the 100th birthday of professor and researcher Brenda Milner was held on September 6 and 7, 2018. On this occasion, Rémi Quirion did not fail to highlight Milner's accomplishments and reflect on all that has been learned in 100 years of neuropsychology and cognitive neuroscience.

THIRD INTERNATIONAL INGSA CONFERENCE

As a founding member – and the only francophone –, the Chief scientist of Québec took part in the third INGSA conference, held in Tokyo on November

6 and 7, 2018. In addition to leading one of the four plenary sessions and taking part in a round table, he was appointed vice-chair of the organization. He took the opportunity to announce that the fourth INGSA conference will take place in Montréal in September 2020.

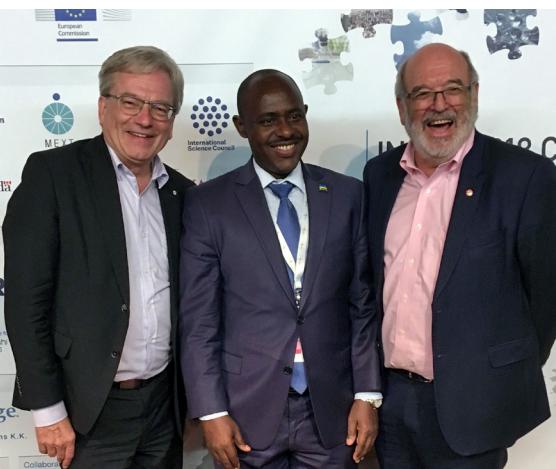
AAAS ANNUAL MEETING

On February 17, 2019, Rémi Quirion's office, in partnership with the office of the chair of INGSA, organized a breakfast in Washington as part of the 185th annual meeting of the American Association for the Advancement of Science (AAAS). In the presence of leading experts from Canada, the United States and Mexico,

he took part in discussions on the creation of a North American chapter of INGSA.

INDUCTION INTO THE CANADIAN MEDICAL HALL OF FAME

On May 2, 2019, Rémi Quirion was inducted into the Canadian Medical Hall of Fame at an induction ceremony organized in association with the McGill University Faculty of Medicine. The ceremony was an opportunity to honour his contribution to the advancement of knowledge in neuroscience and mental health, and the work he has accomplished as the first chief scientist of Québec.



↑ Rémi Quirion, Dr. Eugene Mutimura, Minister of Education of the Republic of Rwanda, and Peter Gluckman, Chair of INGSA.



↑ High-level leaders surround Rémi Quirion at the AAAS congress.

◆◆◆ Intersectoral project development

ADOpte INC. ACTIVITY AT THE MONTREAL MUSEUM OF FINE ARTS

On November 29, 2018, the Chief scientist of Québec, in collaboration with the director of the Montreal Museum of Fine Arts, Nathalie Bondil, gave young entrepreneurs taking part in the Adopte inc. program the chance to meet artists and members of the research community. The adoptees were able to discuss artistic expression in an entrepreneurial context, a great opportunity to promote the decompartmentalization of expertise.

LAUNCH OF AN INTERSECTORAL NETWORK ON FLOOD MANAGEMENT

On December 11, 2018, the Chief scientist of Québec announced the launch of the Réseau inondations intersectoriel du Québec, an intersectoral flood research network led by Professor Philippe Gachon from Université du Québec à Montréal which includes 120 researchers. Rémi Quirion was delighted to see the culmination of an initiative set in motion a year earlier to find sustainable solutions for managing flood risk in a changing climate.

AUDACE PROGRAM: ANNOUNCEMENT OF THE SECOND COMPETITION AWARDS AND LAUNCH OF THE THIRD COMPETITION

On April 30, 2019, the list of research grant recipients for the year 2018-2019 under the intersectoral AUDACE program was unveiled. A few months later, on July 19, a new call for proposals was launched.

ACFAS SYMPOSIUM ON THE UNIVERSITY OF THE 21ST CENTURY

On May 29 and 30, 2019, Université du Québec en Outaouais hosted the 88th Acfas Congress, which included a symposium entitled *The University of the 21st century: issues, challenges and prospects*. As opening speaker, Rémi Quirion stressed the importance of practicing innovative intersectoral research without

affecting the university's teaching mission or its disciplinary foundations. The points raised fuelled reflection, that we hope will be ongoing, on how to adapt universities to our evolving society.

LAUNCH OF A FUNDING PLATFORM FOR INTERSECTORAL RESEARCH ON AGING

Early 2019 was marked by the launch of another intersectoral initiative: the

funding platform for intersectoral research on aging, which has three components: AUDACE, Living Lab and Cohort. Five months later, the list of research grant recipients under this first call for proposals was unveiled.

❖ Promoting research

SPECIAL AUDACE EVENT: SPOTLIGHT ON BOLD PROJECTS!

On September 13, 2018, one year after the program's launch, the Chief scientist of Québec and the FRQ invited the 22 funded research teams to a special AUDACE event in Montréal to present their projects, enjoy improbable encounters and discuss the program's future with the FRQ and their partners.

AWARENESS TOOL FOR THE RESPONSIBLE CONDUCT OF RESEARCH

On November 1, 2018, a tool to educate students and researchers about best practices for the responsible conduct of research was launched. Available online, the tool offers activities focusing on decision-making in a real-world research context. The first module focuses on the responsible dissemination of research results. Once completed, the tool will contain three independent modules on different topics.

EXCHANGE FORUM ON EQUITY, DIVERSITY AND INCLUSION

For its fourth edition held on November 20, 2018, the annual FRQ / Palais des congrès de Montréal Exchange Forum brought together nearly 70 participants to explore issues of equity, diversity and inclusion in the organization of large-scale international scientific conferences, as well as finding ways to achieve this. The Chief scientist of Québec and the president of the Palais des congrès de Montréal Ambassadors Club, Hany Moustapha, recognized three researchers

for their involvement in the organization of major international conferences in Montréal, generating significant economic and intellectual benefits for the city.

BRAINSTORMING MEETING ON CITIZEN ENGAGEMENT IN RESEARCH

With the clear intention of launching a new program to involve citizens in scientific research, the office of the Chief scientist of Québec organized a day in November 2018 to identify needs and possible solutions for citizen science in Québec. Participatory research projects were presented to participants from a variety of backgrounds. The discussions helped fuel reflection on the development of the new program.

ANNOUNCEMENT AND DISCUSSION FORUM ON ARTIFICIAL INTELLIGENCE

As part of the Facing Artificial Intelligence forum, which brought together almost 200 people at the Sheraton Centre Montréal on December 3, 2018, Rémi Quirion announced the new International Observatory on the Societal Impacts of Artificial Intelligence and Digital Technologies (OBVIA). "The Observatory will serve as a vital hub to exchange ideas, generate knowledge and inform public policy on artificial intelligence and digital technologies", stated Quirion during the event.

SCIENCE BREAKFASTS AT THE QUÉBEC NATIONAL ASSEMBLY

The Chief scientist of Québec held three science breakfasts at the Québec National Assembly in 2019 for MNAs, chiefs of staff and deputy ministers, aiming to show them the extent of the scientific expertise available to them through research. On February 27, 2019, professor emeritus and economist Pierre Fortin was invited to speak about full employment and the issues and challenges this represents for Québec. A month later, the focus was Québec in the face of artificial intelligence, with the participation of Lyse Langlois, director of the OBVIA, and Nathalie de Marcellis-Warin, general director of the Centre for Interuniversity Research and Analysis of Organizations. These two events were followed, on June 5, 2019, by a meeting with Yoshua Bengio, internationally renowned artificial intelligence researcher and co-recipient of the Turing Prize, the "Nobel prize of computing".



Yoshua Bengio at the 10th scientific breakfast.

INGSA WORKSHOP ON SCIENCE ADVICE FOR GOVERNMENTS

The Chief scientist of Québec held a workshop in Québec City on March 28, 2019 with the intention of initiating reflection on the use of scientific facts and evidence to inform decision-making. Organized in collaboration with the Ministry of Economy and Innovation, the event followed the formula adopted by INGSA: the first part was spent analyzing and discussing a fictitious case study designed to help participants better understand the realities of government and research settings.

MONTRÉAL SUMMIT ON INNOVATION

On May 24, 2019, during the 8th edition of the Montréal Summit on Innovation, the Quartier de l'innovation, Aligo Innovation and the FRQ invited experts, university researchers, entrepreneurs and donors to reflect on and discuss key drivers of innovation and competition stemming from research. The event began with a breakfast seminar on innovative research practices and public and institutional policies that bring about change, led by Rémi Quirion, Magda Fusaro, rector of UQAM, and François William Croteau, borough mayor of Rosemont-La Petite-Patrie and Ville de Montréal's executive committee member responsible for the Smart City initiative, information technology and innovation.

CONFERENCE OF MONTRÉAL

On June 11, 2019, during the 25th edition of the Conference of Montréal, Rémi Quirion gave a talk on making innovation and artificial intelligence beneficial to society at large. He stressed the importance of establishing a dialogue with citizens and of including them in the conversation about the transforma-

tions resulting from artificial intelligence technologies, and took the opportunity to present the key mandates of the OBVIA.

LAUNCH OF DIALOGUE AND ENGAGE

On July 10, 2019, the Chief scientist of Québec was pleased to announce the launch of DIALOGUE, a new program to support scientific communication to the general public. Through this pilot program, the FRQ are encouraging the scientific community to interact with the public by discussing its work, findings and scientific processes to spark interest and foster a better understanding of science. The following day saw the launch of ENGAGE, an innovative participatory science program that seeks to explore more collaborative forms of research with citizens, thus allowing them to be

involved in various steps in the research process.

SCIENCE ADVICE WORKSHOP IN CAMEROON

As part of the activities of INGSA, the office of the Chief scientist of Québec led a mission in Yaoundé, Cameroon from August 24 to 30, 2019. Activities included a government science advice workshop chaired by the Minister of State and Minister of Higher Education, Jacques Fame Ndongo, who highlighted the structuring role of science advice for Africa. Meetings were also held with the Ministry of Higher Education, the Ministry of External Relations and the Ministry of Scientific Research and Innovation, where there was talk of strengthening collaboration between Québec and Cameroon on research and innovation.



Discussion on innovative research practices at the Montréal Summit on innovation.

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