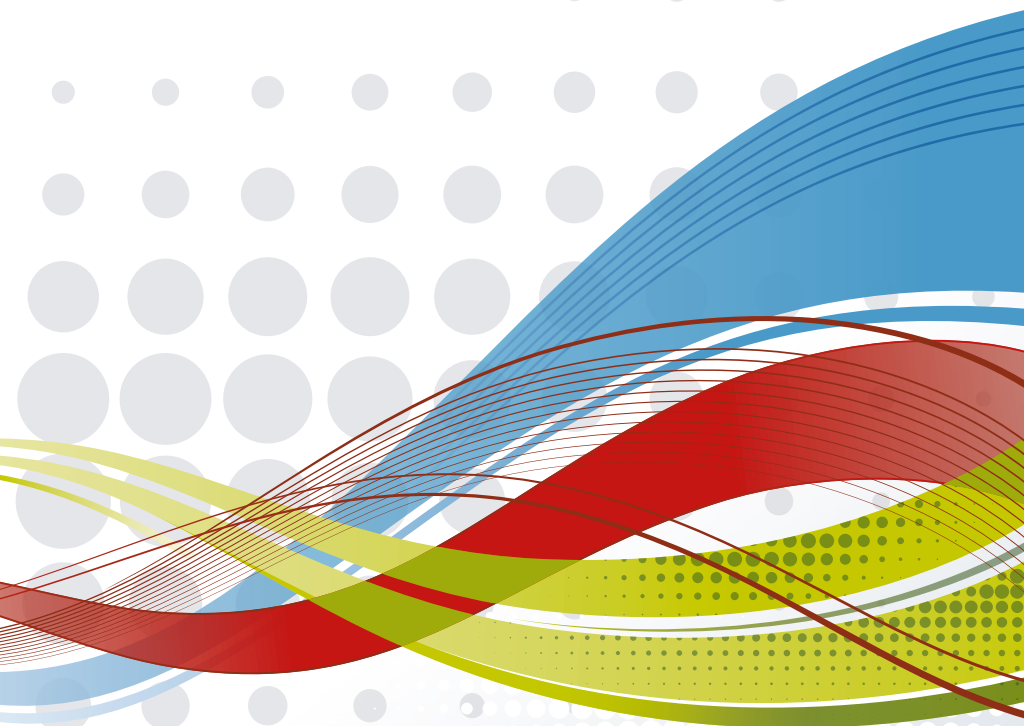


Fonds de recherche du Québec

Société et Culture
Santé
Nature et Technologies





MOVING FORWARD

In the coming year, one of my priorities will be to put together the 2018-2021 strategic plans for each of the three Fonds de recherche du Québec (FRQ). In doing so, we will be able to count on \$180 million of additional funding obtained under the new [Québec Research and Innovation Strategy](#) (SQRI). This amount includes \$20 million for the current year (2017-2018) and \$40 million per year up to 2021-2022.

The increased budget has allowed us to enhance certain programs for the fall 2017 competitions. For example, we were able to allocate more funds for training and career award programs for young researchers, and increase the grants awarded to strategic clusters and research centres and institutes. In addition, we announced the creation of Audace, a new funding program that aims to foster intersectoral, bold, innovative research projects.

Consultation on the new strategic plans is already well underway through consultations with the broader university and college research community, government departments and agencies, and members of civil society. This is the first time that the FRQ have consulted civil society in their planning work. This was done by means of a digital platform entitled "[Des idées pour la recherche](#)", from May 24 to June 23, 2017. To stimulate participation, an advertising campaign was carried out on social and digital media. Our initial objective was to collect at least thirty new ideas co-constructed by participants and to raise awareness among civil society of the importance of research to the social and economic development of Québec. In the end, more than 420 people took part in discussions on the digital platform. Some excellent suggestions were made, particularly in relation to our major societal challenges, be it demographic change and the aging of the population, sustainable development and climate change, or entrepreneurship and creativity. A number of propositions were also made with regard to the new generation of researchers and greater accessibility to scientific knowledge and research findings. This co-construction process concluded with a meeting with some of the platform participants that was broadcast in real time on Facebook Live. In the fall of 2017, we will communicate with participants to explain which ideas were chosen to be used in developing our new strategic plans.

Finally, I am excited to see that joining Twitter social media has allowed me to maintain closer ties with my fellow science advisors and other international partners, and that my Facebook page gives me the privilege of reaching Quebecers from a wide diversity of backgrounds, in addition to strengthening my connection with people outside the academic and research communities.



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

Chief Scientist's Report

2016-2017

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- ❖ Scientific missions and agreements
- ❖ Conferences and public affairs
- ❖ Development of an intersectoral program
- ❖ Promoting research

Québec 

CONTEXT

The first year of my second mandate was marked by a string of good news for Québec's research community. It was also punctuated by a number of projects that had a significant impact both here in Québec and internationally.

First, thanks to the Government of Québec's 2017-2018 budget, researchers and students now benefit from an increase in Fonds de recherche du Québec (FRQ) budgets of more than 20%. They can also count on the measures provided by two new strategies: the [Québec Research and Innovation Strategy 2017-2022](#) and the [Québec Life Sciences Strategy 2017-2027](#). These will contribute an additional \$830 million or more by 2022 aimed at stimulating research and innovation and the training of a new generation of researchers, in order to position Québec among the top ten OECD countries for research and innovation.

The government also launched a new international policy entitled "[Québec on the World Stage: Involved, Engaged Thriving](#)", which reaffirms the essential role of science in better understanding and addressing major societal challenges, and describes the role of the chief scientist on the international stage. This policy emphasizes the importance of developing international research partnerships and promoting science in diplomatic relations.

2016-2017 was also marked by my participation in the expert panel charged with reviewing the federal government's support of fundamental science, chaired by David Naylor, former president of the University of Toronto. In recent years, federal government funding for fundamental research has decreased significantly, in favour of applied research. As a result, Canada is no longer among the top 30 nations in terms of investment in research and development. The most recent data show that R&D research in Canada represents just 1.69% of the country's gross national product, compared with an average of 2.37% in OECD countries. The [panel's report](#) recommends a reinvestment of \$1.3 billion in research. "The cumulative base increase would move annual spending in steady-state across the four agencies and closely related entities from approximately \$3.5 billion to \$4.8 billion," the report stated.

Finally, the Québec Superior Court decision handed down in June 2017 during the hearing on the Maillé case is excellent news for Québec's research community. This decision is of paramount importance, because it reaffirms the importance of protecting the confidentiality of research participant identities and data. This confidentiality is an essential condition for maintaining a relationship of trust between researchers and participants and the public in general.



KEY ACHIEVEMENTS

❖ Scientific missions and agreements

FRAMEWORK COOPERATION AGREEMENT WITH BIOCUBAFARMA

On the occasion of Québec premier Philippe Couillard's mission to Cuba, Québec's chief scientist signed a cooperation agreement between Québec and BioCubaFarma. This agreement will support the development of the Cuban Human Brain Mapping Project and encourage collaboration between Cuba, China and Québec. Signed on September 14, 2016, it is based on an arrangement between the McGill Centre for Integrative Neuroscience and the Centro de Neurociencias de Cuba. The agreement will provide unique collaboration opportunities, particularly in the context of new investment by the Canada First Research Excellence Fund in neurosciences at McGill University.

AGREEMENT TO CREATE A FRANCE-QUÉBEC INSTITUTE FOR SCIENTIFIC COOPERATION TO SUPPORT THE MARITIME SECTOR

On October 14, 2016, at the end of the 19th alternating meeting of the prime minister of France and the premier of Québec, Québec premier Philippe Couillard and French prime minister Manuel Valls signed an agreement leading to the creation of the France-Québec Institute for scientific cooperation to support the maritime sector. The Institute will operate under the dual auspices of Université du Québec à Rimouski and Université de Bretagne Occidentale in Brest. Its mission is to bring together and network key players in France and Québec in maritime research, innovation and higher education. The complementary nature of the scientific initiatives on maritime

development is an incentive for France and Québec to strengthen their capacities through innovative collaboration on six priority research themes and to give stakeholders a structured impetus for bilateral cooperation, but above all to create a synergy that will position them as leaders on both the Atlantic and international scene.

LAUNCH OF ONCOPOLE

On February 15, 2017, in the presence of Dominique Anglade, minister of economy, science and innovation; Adam H. Schechter, executive vice president and president, Global Human Health, Merck & Co. Inc.; and Chirfi Guindo, president and managing director of Merck Canada Inc.; the Fonds de recherche du Québec–Santé and Merck & Co. Inc. announced the creation of [Oncopole](#), a research, development and investment hub designed to accelerate the fight against cancer. Oncopole is a unique co-creation partnership whose inclusive idea development and implementation process works closely with the scientific community, with more than 50 experts

called on over the past year to help identify the hub's research priorities. Recognizing the range of resources and infrastructures currently available as well as the strategic positioning of many researchers here in Québec, this project will strengthen Québec's research and innovation ecosystem, to the patient's benefit. Following a thorough analysis of the various hosting possibilities identified across Québec, the Institute for Research in Immunology and Cancer (IRIC) of the Université de Montréal was selected to host Oncopole's coordinating offices.

PARTNERSHIP WITH OSEntreprendre

The Fonds de recherche du Québec (FRQ) and [OSEntreprendre](#) have decided to combine their efforts to promote college and university students who start their own business. Through a partnership signed on March 7, 2017, 17 regional prizes of \$500 each and one national prize of \$5,000 will be awarded to students who take part in the Business Creation division of the OSEntreprendre Challenge.

Launch of Oncopole with Jacques Simard, Rémi Quirion, Chirfi Guindo, Dominique Anglade and Adam H. Schechter.



MISSION IN ISRAEL AND THE WEST BANK WITH THE PREMIER OF QUÉBEC

On May 23, 2017, the Fonds de recherche du Québec (FRQ) and the Palestine Academy for Science and Technology signed an agreement aimed at encouraging collaboration between researchers in Québec and

their counterparts in the West Bank, East Jerusalem and Gaza, by increasing the international mobility of the latter, particularly young researchers. The agreement was concluded as part of an official mission made by the premier of Québec, Philippe Couillard, and the minister of the economy, science and innovation, Dominique Anglade, in

Israel and the West Bank. Under the agreement, the FRQ will invite 60 researchers from this region to carry out short research missions in Québec (three to six months), in the fields of health sciences, natural sciences and engineering, and social sciences and humanities, arts and literature.

❖❖❖ Conferences and public affairs

CONSULTATIONS ON HIGHER EDUCATION

In the fall of 2016, the college network and the university community were consulted on the environment and conditions conducive to the establishment of a Québec council of colleges, a Québec council of universities and a joint commission on higher education. It was an opportunity for Québec's chief scientist to submit a brief to the minister of higher education, Hélène David, as part of the Commission d'évaluation de l'enseignement collégial and the Commission de l'enseignement et de la recherche universitaires. It was also a chance to consider collaboration between the future council of universities and the Fonds de recherche du Québec. Possible courses of action include streamlining of programs, efforts to ensure consistency in program offerings between institutions, better alignment with the regions, modern pedagogical approaches that comply with international best practices, and the integration of digital technologies.

MASSACHUSETTS-QUÉBEC COLLABORATIVE RESEARCH COUNCIL

On December 6, 2016, Québec's chief scientist was named to the Québec section of the Massachusetts-Québec Collaborative Research Council, an organisation aimed at promoting networking opportunities between Québec and Massachusetts. The new research council's primary objective is to find solutions to collective issues

related to climate change, cybersecurity and genomics. The Council has 12 members—6 from each region—representing the higher education sector, the business community and the legislature.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE ANNUAL MEETING

Québec's chief scientist gave a talk as part of the *Evidence-Based Science Advice in the Age of Information: A Canadian Perspective* policy session of the American Association for the Advancement of Science Annual Meeting in Boston on February 17, 2017. During the event, he also led a workshop on open science entitled *Jump-starting Neurological Research Through Open Science*.

PRESENTATION TO THE CERCLE QUÉBÉCOIS DES AFFAIRES INTERNATIONALES – THE IMPORTANCE OF INTERNATIONAL RESEARCH COLLABORATION FOR QUÉBEC

On March 1, 2017, Québec's chief scientist made a presentation to the Cercle québécois des affaires internationales on the internationalization of research, the development of international partnerships by the Fonds de recherche du Québec, and the use of science diplomacy in Québec.

MONTREAL COUNCIL OF FOREIGN RELATIONS CONFERENCE – SHAPING THE FUTURE: THE KEY ROLE OF SCIENCE AND TECHNOLOGY

On March 22, 2017, Québec's chief scientist spoke at a conference organized by the Montreal Council of Foreign Relations, along with Koji Omi, chairman and founder of the Science and Technology in Society Forum (Tokyo) and former Japanese minister of finance, Andrée-Lise Méthot, founder and managing partner of Cycle Capital Management, and Paul Shrivastava, senior advisor to Future Earth. The conference was organized in conjunction with the Future Earth Science and Engagement Committees and Governing Council annual meetings in Montréal.

LECTURE AT THE INTERNATIONAL FINANCE CLUB OF MONTREAL – BUILDING A KNOWLEDGE ECONOMY BASED ON SCIENCE AND RESEARCH

On April 5, 2017, Québec's chief scientist gave a lecture at the International Finance Club of Montréal on the topic of public research in Québec and its scientific, social and economic impacts, and ways of stimulating collaboration and partnerships between the academic and business communities.

❖ Development of an intersectoral program

AUDACE

On July 12, 2017, Québec's chief scientist announced the launch of a non theme-based intersectoral funding program to support bold, risky projects with high impact potential. As High Risk/High Reward funding becomes increasingly widespread in Europe and elsewhere, it is important for the Fonds de recherche du Québec (FRQ)

to provide a funding opportunity for unconventional and innovative projects: intersectoral initiatives of an exploratory nature that dare to break with established frameworks and patterns of thought and have the potential to transform research and creation. Designed with the help of the research community, AUDACE is open to teams that include researchers

from at least two of the three sectors covered by the FRQ (natural sciences and technology; health sciences; social sciences and humanities, arts and literature) and will support projects that do not readily fall within the scope of regular sector-based funding programs.

❖ Promoting research

INTERNATIONAL NETWORK FOR GOVERNMENT SCIENCE ADVICE CONFERENCE

Québec's chief scientist gave a lecture on the influence of beliefs and evidence in the health field at the 2016 International Network for Government Science Advice (INGSA) Conference, which took place in Brussels on September 29 and 30, 2016. While there, Québec's chief scientist also met with the cabinet of the European

Commissioner for Research, Innovation and Science, the administrators of the European Regions Research and Innovation Network (ERRIN), and the INGSA education and training committee. He also took part in the preparation of the 2nd International Conference on Science Advice to Government as a member of the organizing committee and the only member from the Americas.

INTERNATIONAL NETWORK FOR GOVERNMENT SCIENCE ADVICE: TRAINING WORKSHOP FOR FRENCH-SPEAKING AFRICA

Science advisors are increasingly called on by policy-makers seeking to develop and implement evidence-informed policies. To help meet this demand, the International Network for Government Science Advice (INGSA) is organizing a series of training workshops designed to strengthen capacities for providing science advice to governments, especially on the African continent. The first workshop was held in February 2016 in Hermanus, South Africa and was a great success across English-speaking African research communities, prompting Québec's chief scientist and the president of the Académie Nationale des Sciences et Techniques du Sénégal (ANSTS) to organize a similar training workshop for French-speaking Africa and the Maghreb. This [workshop](#) was held in Dakar, Senegal from March 5 to 7, 2017. It brought together some forty participants from 20 countries in French-speaking Africa and the Maghreb, including scientists from all levels and disciplines, as well as resource persons from the political arena.

International Network for Government Science Advice: training workshop for French-speaking Africa.



SCIENCE BREAKFASTS AT THE NATIONAL ASSEMBLY

In order to make informed, evidence-based decisions, policy makers need to have access to the scientific facts and findings that Québec researchers can provide. To facilitate this access, the chief scientist is organizing a series of meetings with MNAs, chiefs of staff and deputy ministers at the National Assembly of Québec, to show them the extent of the expertise available to them. A [science breakfast](#) was held on October 27, 2016 on the theme of big data, and another on March 16, 2017 on adaptation to climate change.

ACFAS CONFERENCE – REFLECTIONS ON THE USE OF SCIENCE DIPLOMACY IN QUÉBEC AND CANADA

On May 10, 2017, as part of the 85th Acfas Congress, Québec's chief scientist organized a [conference](#) on science diplomacy at McGill University.

More than 100 Québec and Canadian politicians, representatives of foreign embassies and consulates, and members of the research community attended discussions on the use of science diplomacy in Québec and Canada. The conference was an opportunity to explore the concept of science diplomacy, to describe the approaches used in Québec and Canada, and to present what has been done in other parts of the world. Panelists included Nick Baker (British consul general in Montréal), Nicolas Chapuis (French ambassador to Canada 2015-2017), Pierre Marc Johnson (former Québec premier), Michel Lafleur (associate deputy minister for bilateral affairs), Jean Lebel (president of the International Development Research Centre), Urs Obrist (senior science and technology counsellor, Embassy of Switzerland in Canada), Michel Robitaille (CEO of Les Offices jeunesse internationaux

du Québec and Québec's delegate general in Paris 2010-2016). A report of the conference, presenting a series of ensuing recommendations, can be found on the Québec chief scientist's website.

CONFERENCE OF MONTREAL – INFECTIOUS DISEASE EPIDEMICS: PUBLIC CONFIDENCE IN VACCINES

On June 14, 2017, as part of the Conference of Montreal, Québec's chief scientist and the FRQ organized a working breakfast on public confidence in vaccines. Québec's chief scientist moderated the discussion panel, made up of Barry R. Bloom, research professor of public health, Harvard University; Gary Kobinger, director, Centre for research in infectious diseases, Université Laval; and Amadou Sall, scientific director, Pasteur Institute in Dakar.

Rémi Quirion, Barry R. Bloom, Gary Kobinger and Amadou Sall at Conference of Montreal.



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