

CANADA FOUNDATION FOR INNOVATION

Corporate plan 2020–21

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THE ROLE OF THE CANADA FOUNDATION FOR INNOVATION

The Canada Foundation for Innovation (CFI) is a non-profit corporation created by the Government of Canada through the 1997 Budget Implementation Act. Our mandate is to benefit Canadians by strengthening the capability of Canadian universities, colleges, research hospitals and non-profit research institutions to carry out world-class research and develop cutting-edge technologies.

The CFI invests in the infrastructure that Canada's best researchers require to conduct leading-edge research. The CFI generally funds up to 40 percent of a project's cost. Institutions, in partnership with provincial and other governments, the private sector and other public and non-profit organizations, must secure the remaining 60 percent of the required funding.

Canada's prosperity depends on the ability to generate knowledge and ideas that result in new products and services, create wealth, enhance social foundations, sustain the environment and ultimately improve the health and quality of life for all Canadians. By supporting the country's capacity for world-class research, the CFI plays a vital role in producing social, economic, environmental and health benefits for Canadians.

The Government of Canada has charged the CFI to pursue the following objectives:

- Support economic growth and job creation, as well as health and environmental quality through innovation;
- Increase Canada's capability to carry out important world-class scientific research and technology development;
- Expand research and job opportunities by providing support through research infrastructure for the development of highly qualified personnel; and,
- Promote productive networks and collaboration among Canadian universities, colleges, research hospitals, non-profit research institutions and the private sector.

Through its various funding activities, the Government of Canada expects the CFI to enhance the capacity of universities, colleges, research hospitals and non-profit research institutions to:

- Attract and retain the world's top research talent;
- Train the next generation of researchers;
- Enable researchers to undertake world-class research and technology developments that lead to social, economic, environmental and health benefits for Canada; and,
- Support private-sector innovation and commercialization.

Funding and contribution agreements

The CFI currently operates under two funding agreements and three contribution agreements with the Government of Canada as represented by, and under the authority of, the Minister for Innovation, Science and Industry. All five agreements are currently active.

- The first funding agreement specified the conditions under which all funds allocated to the CFI between 1997 and 2009, totalling \$4.39 billion, were to be distributed by the CFI to eligible recipients. These sums generated an additional \$1.6 billion in interest income that the CFI directed to project funding and operational expenditures.
- The 2009 federal budget allocated \$150 million to the CFI under the first funding agreement and \$600 million was distributed under a second funding agreement. The CFI signed this agreement in July 2010.
- In March 2014, the CFI signed a contribution agreement with the Government of Canada for \$499.85 million allocated through Economic Action Plan 2012. We have now delivered funding competitions according to this contribution agreement.
- In September 2015, the CFI signed a contribution agreement with the Government of Canada for \$1.33 billion. We are now completing the funding competitions according to this contribution agreement.
- In January 2019, the CFI signed its most recent contribution agreement, one that represents a fundamental change in the way the Government of Canada will invest in research infrastructure. Following the announcement in the 2018 federal budget, the CFI will transition to permanent funding. Through the 2019 Contribution Agreement, the Government of Canada provided the CFI with \$763 million over five years commencing in 2018–19 and permanent funding at an ongoing level of up to \$462 million per year by 2023–24. The 2019 Contribution Agreement covers the first eight years of this transition period.

Please see [Appendix 1](#) for details on how we are implementing the financial aspects of these agreements.

Strategic directions

The CFI is a responsive organization that listens to Canada's research community and acts to increase research capacity across the country. To serve this community, we regularly convene discussions among stakeholders to advance our understanding of their evolving needs. Because of our unique position, which reaches across sectors, disciplines, agencies and research institutions, we will continue to engage a broad range of stakeholders on the most pressing challenges and most promising opportunities for Canadian research.

Through our interactions with the research community, we are focusing our attention on three major trends that will help inform the way the CFI provides research infrastructure support, as outlined in the [CFI's 2018–23 Strategic Roadmap](#).¹

¹ For the CFI 2018–23 Strategic Roadmap, please see <https://www.innovation.ca/about/governance/annual-corporate-reports>

Convergence

The first trend is convergence, where researchers identify a specific and compelling problem that requires the deep integration of disciplines, knowledge, theories, methods, data and communities. Convergence goes beyond interdisciplinarity by bringing many fields of research together, eliminating silos and creating systematic cohesion and thinking.

Institutions can also demonstrate convergence when universities and colleges build core facilities to better manage and maximize the shared use of their infrastructure, combine their strategic research priorities and research facilities to take on specific challenges and develop partnerships around the world.

We can also understand convergence as the deepening collaboration between researchers and research organizations in academia, the private sector, government and not-for-profit organizations. These groups share an interest in addressing social, economic, environmental and health challenges, fostering innovation and improving quality of life.

International collaboration

The second trend is a strong and growing emphasis on international collaboration and engagement. Across Canada, we see researchers and their institutions increasingly working with the best in the world and engaging in global research enterprises. This is bringing Canadian research expertise and strengths to the world stage and is attracting international researchers and research organizations to Canadian institutions.

Today, the research community sees research infrastructure as a key enabling factor in developing international collaborations. Sharing research tools and facilities draws researchers together to define and tackle a broad range of questions in areas such as astronomy, physics, environmental observation, human health and many others. The development of large-scale, multinational research facilities also drives international collaboration.

Diversity

The third trend is that the pool of talent within Canada's research community includes a greater diversity of people of varied ages, backgrounds, ethnicities and genders. This improves the quality of research by leveraging the talents of a broader range of qualified individuals and incorporating a greater variety of perspectives in the way research is conducted. We strive to ensure that all qualified Canadians have opportunities to build research careers, succeed in generating new knowledge and contribute to quality of life, so that Canadian research meets a high standard of excellence and has meaningful impact.

These trends represent the overall context in which the CFI established its specific strategic directions for 2018–23:

1. Support the full range of research infrastructures Canada's research institutions require to achieve excellence

The CFI's research infrastructure investments enable Canada's leading researchers to help build communities that are healthy, environmentally friendly, technologically savvy, safe, secure and culturally rich. In order to achieve these benefits, highly talented researchers must have the tools they need to create new knowledge and develop new technologies. In turn, these tools and facilities act as powerful

magnets that allow research institutions to attract, retain and develop the best researchers from around the world. In addition to offering environments conducive to engagement, collaboration and the convergence of disciplines, CFI-funded facilities allow Canadian researchers to build on each other's achievements and contribute to our global stock of knowledge.

From departmental laboratories used by individuals and small teams to core facilities that bundle together many types of equipment and serve multiple teams across an institution, research infrastructures come in a wide variety of types and scales and provide a broad range of research capabilities. At a larger scale, research infrastructures include unique national facilities, such as those supported through the CFI's Major Science Initiatives Fund. These unique facilities provide outstanding capabilities for researchers across the country and are increasingly instrumental in facilitating international collaborations.

At a larger scale, major research facilities — particle accelerators, telescopes and icebreakers — act as magnets for large, often multinational teams of researchers, and are sites for extensive collaboration.

Researchers use many of these facilities, including synchrotrons and neutron sources, across a broad spectrum of disciplines to enable a high degree of convergence. A small number of these facilities are so large they can only be built through contributions from many countries and require long-term resource commitments.

The Government of Canada is currently considering the development of a framework and assessment process to make evidence-based decisions on these proposals when they do come forward. Given its expertise in funding large-scale research infrastructures, as well as adjudication, oversight and financial monitoring, the CFI is well-positioned to collaborate with the federal government and other key stakeholders on a Canadian-made approach to the funding of major research facilities. These contributions rest on the sound principles of due diligence, needs assessment, scientific excellence and benefits to Canada.

In certain instances, Canadian researchers require access to unique research facilities outside Canada. As the CFI transitions to a permanent funding model, it will be possible to investigate new ways of facilitating such access. This could include, for example, memberships in consortia that operate large-scale research facilities.

The CFI's mission is to ensure, as much as possible, that Canadian researchers have access to the full range of infrastructure, regardless of size, complexity, location or cost so that they may compete and lead research activities at the global level. In order to achieve this mission, the CFI will ensure that funding mechanisms are open, flexible and comprehensive, while providing the resources institutions need to develop and secure top research talent.

2. Spark innovation by strengthening linkages and encouraging collaboration among research institutions, the private sector and not-for-profit organizations

In today's globally competitive and interconnected world, increasing productivity through the creation of new products and services, improving public-sector performance and building an inclusive, compassionate society will be critical to Canada's success as a caring, innovative and prosperous nation.

Innovation and entrepreneurship are key drivers of prosperity and quality of life. They are fundamentally important for progress and can have transformative, positive impacts in all sectors of society. For its part, the CFI will continue to engage with early career researchers and entrepreneurs, as well as with the students that work with them, to help them realize their vision and enable them to succeed.

Canadian organizations in all sectors increasingly rely on collaborations with researchers working in CFI-funded facilities to develop value-added products, processes, services and technologies. Doing so allows them to innovate and provide Canadians with the foundation on which to build a stronger economy and a more vibrant and successful society.

To enable Canada's researchers and their institutions to imagine the future and contribute to innovation, the CFI will support the environments that allow them to lead. In doing so, the CFI will:

- Help researchers develop the most advanced technologies;
- Promote the convergence of disciplines to tackle specific and compelling problems facing society;
- Provide access to the tools researchers need to drive economic growth;
- Fuel the sustainability of communities; and,
- Improve the wellbeing of Canadians.

3. Support global research to find solutions to Canada's and the world's most pressing challenges

State-of-the-art research infrastructure is essential for world-leading research and technology development and to effectively engage in global research endeavours. The 2018 Council of Canadian Academies report on the state of R&D in Canada states that 60 percent of international researchers surveyed were of the opinion that Canada offers world-leading research infrastructure across a broad range of areas of inquiry. This is a strong basis on which to build international engagement and contribute to addressing global challenges, such as reducing greenhouse gas emissions, building sustainable cities, improving food security and water and sanitation systems, and addressing human health issues.

In many ways, and in many areas of inquiry, Canadian research is global in scope and impact. By funding internationally relevant research infrastructures, the CFI can reinforce this and continue to help Canadian researchers have a positive and meaningful impact on the world.

The search for solutions to global challenges often requires large, expensive infrastructure that is beyond the capacity of any single country to support or that, by its very nature, spans a number of national jurisdictions and requires international involvement. This is particularly the case for projects like large-scale observational systems for oceans and the Arctic, massive research facilities for clean energy such as fusion reactors or multinational collaborations in health genomics.

The CFI can play a central role supporting the participation of Canadian researchers in initiatives like these by assessing the excellence of the research enabled, the infrastructure needs of the Canadian research community and the benefits that will result from Canadian involvement.

4. Strengthen Canada's global competitive advantage by meeting the infrastructure needs of researchers throughout their careers

The CFI's investments create state-of-the-art research environments, where students find rich experiential learning opportunities, new researchers are able to launch successful careers and established researchers have access to the best technologies to advance their work. Infrastructure support at each stage of a successful research career creates a tremendous competitive advantage for Canada.

The Canadian research community is facing a period of renewal, creating opportunities for a new generation of students and researchers. At the same time, women and researchers from diverse backgrounds are playing a greater role in Canada's research enterprise. This broader range of perspectives, talents, experiences and insights that results from the mobilization of this talent will strengthen Canada's research enterprise.

These demographic changes are taking place in the context of rapid technological development, where new forms of research infrastructure, such as big data, artificial intelligence, robotics and quantum materials, are emerging. The CFI's challenge is to ensure that an increasingly diverse cadre of researchers have access to the infrastructure they need to launch and pursue successful careers.

In meeting this challenge, we must also ensure that Canada's research institutions take full advantage of the strength that diversity brings, and that all researchers have access to the most advanced technologies in order to help optimize the performance of Canada's research community.

Enabling the success of this diverse group of researchers also requires the support of the highly specialized technicians who operate and maintain research infrastructure across the country. They are crucial for the success of the Canadian research enterprise.

The CFI suite of funds

Innovation Fund: Flagship support mechanism that makes a broad range of awards available for leading-edge research infrastructure across all disciplines and areas of research

John R. Evans Leaders Fund: A responsive funding mechanism that supports institutions in securing the infrastructure resources necessary to attract and retain top research talent

Major Science Initiatives Fund: Provides unique, large-scale national research facilities with the operating support necessary to produce excellent research and technology development

College-Industry Innovation Fund: Supports emerging applied research capacity in Canada's colleges and polytechnics, with the goal of assisting business innovation

Exceptional Opportunities Fund: Gives institutions the opportunity to seek funding for exceptional and time-sensitive initiatives that would otherwise be missed within the regular competition cycles

Infrastructure Operating Fund: Offers a 30 percent supplement to CFI capital awards to cover a portion of the operating and maintenance costs of projects to help ensure their optimal use

SHORT- AND MEDIUM-TERM OUTPUTS AND OUTCOMES FROM 2019–20

Innovation Fund

We released the final call for proposals for the 2020 Innovation Fund competition on May 13, 2019. The CFI will invest up to \$520 million for this competition: \$400 million in capital funding for research infrastructure and \$120 million to contribute to operating costs through the Infrastructure Operating Fund. Projects funded through the Innovation Fund will help Canada remain at the forefront of exploration and knowledge generation while making meaningful contributions to generating social, health, environmental and economic benefits and addressing global challenges. As per the call for proposals, the 2020 Innovation Fund competition required that institutions submit notices of intent (NOI) in order to submit proposals by the deadline of January 20, 2020.

John R. Evans Leaders Fund

The John R. Evans Leaders Fund (JELF) provides institutions with support for foundational research infrastructure that researchers require to be or become leaders in their field. In turn, this allows institutions to remain internationally competitive in areas of research and technology development aligned with their strategic priorities.

This fund also offers institutions the opportunity to create competitive research support packages that include infrastructure and a portion of the operating and maintenance costs, coupled with direct research costs from partner organizations. Individual and small teams of researchers use the research infrastructure to conduct research across a wide variety of disciplines and areas of inquiry. The CFI caps these awards at \$800,000, which, along with the 60 percent matching amounts, allows institutions to propose projects with a capital cost of up to \$2 million.

To ensure a rapid response to proposals and an equitable distribution of funds, the CFI nominally provides each eligible institution a specific allocation of funding, which they can draw down for infrastructure projects three times per year.

The most recent JELF allocation covered the period April 2017 to March 2020. The CFI provided a total of \$198 million to institutions, either as individual allocations to the 29 largest universities or in a pooled allocation to the smallest 45 universities (known as the Small Institution Fund). The CFI closely monitored the 2017–20 institutional allocations to ensure they were used in a strategic and optimal manner. After all nine JELF unaffiliated cycles and all six JELF–CRC cycles, 116 percent of available allocations had been committed. This indicated that institutions had made good use of the \$198 million allocation and had started to draw from their 2020–23 allocation. These commitments included all contributions awarded up to November 2019 and proposals submitted in October 2019.

Major Science Initiatives Fund

The Major Science Initiatives Fund supports national research facilities by providing operating and maintenance funding. These unique research facilities enable the work of a critical mass of researchers across the country.

The CFI intends support through this fund to:

- Secure and strengthen state-of-the-art national research facilities that enable Canadian researchers to undertake world-class research and technology development that leads to social, health, economic or environmental benefits to Canadians;
- Enable funded facilities to operate at an optimal level and to have their scientific and technical capabilities fully exploited; and,
- Promote the adoption of best practices in governance and management, including long-term strategic and operational planning in keeping with the scale and complexity of the facility.

Midterm review

Over the summer of 2019, the CFI undertook a midterm review of all MSI-funded facilities to assess the overall impact of funding on the scientific excellence of the enabled research, as well as the governance, management and operations of the facilities. The review focused on the facility's areas for improvement that the initial merit-review committees had identified. The CFI also assessed the facility's plans and need for funds for the 2020–23 period. Expert Committees were asked to rate the facilities in terms of their achievement of the three competition objectives.

Following this review, the CFI Board Directors approved an increase of \$103,204,031 for 12 facilities funded through the MSI Fund. This contribution included adjustments to the budgets of the 12 facilities for years four and five (2020–21 and 2021–22) and funding for the sixth year (2022–23) of the funding cycle. The Board also approved \$136,120,265 for the 2020–21 through 2022–23 period for the Canadian Light Source, Canada's National Design Network and SNOLAB.

College-Industry Innovation Fund

The College-Industry Innovation Fund (CIIF) supports substantial research infrastructure projects that will augment the existing applied research and technology development capacity of colleges, which will allow them to respond to important industry-sector needs.

There are two competition streams under the College-Industry Innovation Fund. The CFI expects proposals submitted to both streams to achieve the following objectives:

- Create and enhance college-industry partnerships leading to business innovation using industry-relevant, state-of-the-art research infrastructure;
- Build upon proven applied research capacity and a track record of partnerships with the private sector in an area of strategic priority to the institution; and,
- Generate socioeconomic benefits in the region and nationally including the development of highly skilled personnel.

The CFI allocated up to \$40 million for capital and operating funds between 2016 and 2019 for both streams of this fund. As usual, the CFI will fund up to 40 percent of a project's eligible infrastructure costs.

Under the CIIF, institutions apply directly to the CFI for Stream 1 awards. For Stream 2 awards, they submit applications jointly to the CFI and to the related Natural Sciences and Engineering Research Council (NSERC) college program. This approach provides both flexibility and streamlined convenience for applicants.

Over the summer of 2019, staff conducted the merit-review process for CIIF–Stream 1. The process comprises two stages: assessments by Expert Committees and a review by a Multidisciplinary Assessment Committee. Through this structured merit-review process, the CFI ensures that proposals are reviewed in a fair, transparent, competitive and rigorous manner. The excellence of the proposals is the determining factor in the evaluation process and guides the committee's final funding recommendations. For the 2019 round of funding, the CFI Board Directors made decisions at their November 2019 meeting.

We also participated in the 17th College and Community Innovation Program (CCI) – Build Innovation Enhancement Grants competition managed by NSERC. The CCI review committee met in mid-January 2020 to review and recommend joint CCI and CIIF proposals for funding. Projects recommended for funding were presented for approval to the Board in March 2020.

Infrastructure Operating Fund

The CFI continues to contribute to the operating and maintenance costs of research infrastructure through the Infrastructure Operating Fund. This fund helps cover a portion of operating and maintenance costs to ensure optimal use of CFI-funded infrastructure. The funds are committed at a rate of 30 percent of the CFI award under the John R. Evans Leaders Fund, the Innovation Fund and the College-Industry Innovation Fund.

Managing the financial aspects of the CFI's activities

All of the financial aspects of the organization's activities are under the responsibility of the CFI's finance team. This team is comprised of two groups:

- The corporate finance group is responsible for the general accounting functions of the CFI, including bookkeeping, payments, budgeting and cash-flow management, as well as award finalization processes and payments to institutions that receive awards.
- The financial monitoring group ensures that institutions spend funds appropriately and have appropriate processes and controls in place for the management of CFI funds.

During 2019–20, the CFI finance team undertook the following activities:

The CFI investment portfolio: Following standard practice, the senior management team and the Board of Directors Investment Committee reviewed the CFI's investment strategy and investment policy in early autumn 2019. Management presented the results of this review, and subsequent recommendations, to the Board of Directors in late autumn 2019.

Institutional monitoring visits: Over the course of fiscal year 2019–20, the finance team performed three monitoring visits. The purpose of these monitoring visits is to ensure that institutions receiving funding have proper practices and processes in place to manage awards, and to share good practices from the various institutions visited.

Contribution audits: The finance team coordinated nine contribution audits of CFI-funded projects during 2019–20. As usual, these audits included a mix of low to high-risk projects, including those where the CFI investment is \$10 million or more.

Financial reports: In addition to its other activities, the finance team reviewed approximately 950 financial reports in 2019–20. These included both interim and final financial reports, and annual reports on expenditures claimed under the Infrastructure Operating Fund.

Communicating the value of CFI funding for Canada

The CFI continued to focus its communications on how it supports a new generation of researchers — students, postdoctoral fellows and early career researchers — and how it remains essential to an evolving research community.

In 2019–20, the CFI ran a campaign that highlighted how investments in facilities are putting people to work, forming productive collaborations, creating jobs and building skills that support a prosperous Canadian economy. The campaign, which launched in January 2020, focused on how Canadian entrepreneurs and innovators are getting a leg up and contributing to Canada's economy by collaborating with researchers and students in state-of-the-art labs across the country.

We also continued to grow awareness among new audiences. We continued to engage students and early career researchers through our social media channels and highlight them in our promotional campaigns and in the success stories we tell. We held our third annual #IAmInnovation Twitter contest, which encourages students and postdoctoral fellows to showcase their work in CFI-funded labs and facilities.

We continued to grow the Navigator into a more comprehensive database of publicly funded facilities in Canada by continuing to onboard federal labs open to working with all sectors. Sixty of the Navigator's 675 labs are federal listings.

To help increase awareness of the Navigator as a key tool among research, government and industry stakeholders, we launched a Twitter account (@InnovationNAV) which features news about the researchers and facilities listed in the Navigator and stories about their collaborations.

We boosted the Navigator profile at a number of events this year, ranging from the Canadian Science Policy Conference to the Prix d'Innovation de l'ADRIQ, providing an opportunity for the CFI to meet with key stakeholders from postsecondary institutions, government and industry, receive feedback on our initiatives and provide information about our latest activities.

International Conference on Research Infrastructures 2020

Working with partners in the European Commission and Government of Canada, we began planning for the biannual International Conference on Research Infrastructures that is scheduled to be held in Ottawa in the fall of 2020 (ICRI 2020). The CFI is leading the organization of this unique, large-scale international gathering. Canadian partners include the three federal granting agencies (NSERC, SSHRC and CIHR), and the National Research Council. We solidified logistics around the event, established branding, launched the ICRI2020.ca website and Twitter feed (@ICRI2020), sent invitations and shaped the overall program.

Analyzing corporate performance, outcomes and impacts

In order to further our commitment to the principle of public accountability, in 2019–20 we reviewed the 2015 Performance evaluation, risk and audit framework. We made some minor revisions that improve alignment with our 2019 Contribution Agreement with the Government of Canada and capture some new ideas identified through three “measures of success” blue-sky workshops held in 2019. Our fifth annual performance report prepared for management and Board of Directors included the new indicators specified in our 2019 Contribution Agreement.

Early in 2019–20, Innovation, Science and Economic Development Canada (ISED) confirmed that its Audit and Evaluation Branch would lead the scheduled five-year evaluation of the CFI.

In the spring, we undertook our third survey of CFI stakeholders. Stakeholders surveyed included administrators and researchers at eligible institutions, federal and provincial governments and other funders and partners in the Canadian science and technology ecosystem. The survey included questions about the effectiveness and efficiency of our activities as well as eliciting views on progress toward our mandate. We launch a similar survey every other year.

We finalized several reports describing the outcomes and impacts emanating from CFI investments in research infrastructure including our annual Report on results and a “focusing on results” report on advances in knowledge.

We also continued our efforts to refine and improve our data, data quality and data management practices through our various information management initiatives. This included working with Statistics Canada and the three federal research councils to develop a new research and development classification system. This new classification system will improve consistency of reporting across the federal funders.

SUCCESSES AND REMAINING CHALLENGES FROM 2019–20

The Government of Canada’s sustained commitment to funding research infrastructure in Budget 2018 will allow the CFI to better and more systematically support institutions in acquiring, operating and maintaining research tools and equipment, as well as developing nationally important research facilities. It will also allow institutions and their funding partners to plan their infrastructure requirements more efficiently. Over the next five years, the CFI will transition toward our new funding model, allowing us to capitalize on the predictability and long-term horizon this brings.

These changes in the way the Government of Canada invests in research infrastructure through the CFI, as well as increased investment in fundamental research, will provide a significant boost to Canada’s research capacity and allow Canada to confirm its standing as a leading research and technology development nation.

To help us meet the challenge of effectively delivering the CFI's mandate, we will continue to convene broad stakeholder discussions to better understand the evolving needs, most pressing challenges and most promising opportunities facing Canada's research institutions. These discussions inform our program design and delivery, and help identify emerging opportunities and challenges that may guide future directions for the CFI. These national conversations help us to determine:

- How the CFI's existing suite of funds can be tailored to best meet the needs of the full spectrum of institutions across the country;
- The extent to which our funding and funding mechanisms allow institutions to capitalize on emerging trends and future opportunities; and,
- Which key strategic issues of importance to the research community and other CFI stakeholders may require new or revised policies and practices.

The CFI continues to participate in the activities of the Canada Research Coordinating Committee (CRCC). More specifically, the CFI is currently involved in the following priority areas:

- Strengthening Canada's capacity to engage in a rapidly evolving global research landscape;
- Identifying and advancing efforts in key emerging research areas;
- Enhancing equity and diversity in research;
- Supporting the full participation of First Nations, Inuit and Métis communities; and,
- Improving support for the next generation of researchers.

Given the diverse mandates and legislated authorities of the various agencies involved, the CFI will continue to identify common ground and program mechanisms that would benefit from greater coordination among the agencies and to harmonize various policies and procedures where possible.

For example, in 2019, the CRCC asked the CFI to lead a multiagency working group charged with developing an international framework to help guide the member agencies' international engagement activities. The CRCC has now adopted this framework, composed of a set of common objectives and operating principles for international engagement.

This will help to increase the coherence and transparency of international funding opportunities for Canadian researchers. The framework also serves to enhance the impact of research and development programs and policies that support international collaborations, and to assist in selecting new international partnerships and opportunities that strengthen the Canadian research enterprise.

To this end, the CRCC intends the international framework to help the agencies:

- Engage proactively with international partners in areas of Canadian research strength and leadership by determining the most effective ways to support international research collaborations;
- Better understand the breadth and depth of Canadian international research collaborations in order to identify strengths, priorities, gaps and opportunities by improving mechanisms to collect and report information on international research activities of Canadian researchers; and,

- Coordinate and harmonize, where appropriate, approaches to international engagement across agencies.

The CFI increasingly supports a considerable number of research infrastructure projects that have international dimensions, including funding partnerships, research collaborations and involvement in global research undertakings such as the Large Hadron Collider at CERN. Given this well-established trend toward internationalization, the CFI will elaborate further an international strategy based on the current Strategic Roadmap. Using the CRCC International Framework and the CFI Strategic Roadmap for guidance, this strategy will stimulate and support Canadian involvement in important international research projects, help guide our numerous engagements with international organizations and support Canadian institutions in their efforts to work with the best researchers across the globe.

As a first step in strengthening our international relations, the CFI has now completed an agreement with the United Kingdom's Science and Technology Facilities Council (STFC). Operating under the auspices of the CRCC/UK Research and Innovation (UKRI) Letter of Understanding, this agreement will facilitate the exchange of funding program information between the CFI and STFC. It will also allow the two agencies to explore linking the CFI Research Facilities Navigator to the UKRI Research Infrastructure Inventory. The goal is to create a trans-Atlantic database of research laboratories and facilities that are open to collaborating with researchers, businesses and all types of organizations in both countries.

On the domestic front, the CFI is now engaging with the Government of Canada's Federal Science and Technology Infrastructure Initiative, now known as Labs Canada. The objective is to assist various federal departments and agencies in their efforts to transform the way government science is conducted through systematic and close partnerships with Canada's academic research community.

We have identified a number of areas for collaboration, including listing federal laboratories on the Navigator, facilitating opportunities for federal departments and agencies to collaborate with researchers in universities and research hospitals, encouraging federal departments to contribute matching funds for CFI awards and involving key partners in the CFI's various international engagement activities.

Expanding on this approach to organizational collaboration, the CFI is also developing various joint initiatives with MITACS to facilitate the training of highly qualified persons at the national facilities supported by the CFI's MSI Fund, with the Royal Society of Canada to promote the value of research and with the federal granting agencies to streamline research support programs.

Finally, the CFI continues to work with ISED to support the transition of Compute Canada to a new organization that will be funded directly by the Government of Canada. This transition is expected to continue into 2020–21.

PLANNED ACTIVITIES AND IMPLEMENTATION

SCHEDULE FOR 2020–21

During 2020–21, the CFI will examine its suite of programs to ensure that they are allowing us to effectively meet our legislated mandate. This examination will be done in the context of:

- The transition to the permanent funding model that will take effect in 2023–24;
- The impact of the CFI's funding on our research community's ability to conduct excellent, world-class research;
- New and emerging research technologies; and,
- The evolving nature of Canada's research institutions.

To support this examination, CFI staff will gather information on the trends identified in the 2018–23 Strategic Roadmap: the convergence of disciplines to address broad research challenges, the importance of collaboration and partnerships, the growing internationalization of Canadian research, and the increasing diversity of Canada's research community.

Innovation Fund

Between mid February and late June 2020, 70 Expert Committees will review all Innovation Fund proposals. Approximately 350 experts will participate in this review process. For the second stage of review, 10 Multidisciplinary Assessment Committees (MAC) will convene concurrently for a two-day meeting in Ottawa in September 2020. The reports for those projects recommended by the MAC will be provided to the Special Multidisciplinary Assessment Committee (S-MAC), the third and final stage of our merit-review process. This committee will meet in October 2020 and make the final funding recommendations for consideration and decision by the CFI Board of Directors at its November 2020 meeting.

John R. Evans Leaders Fund

The CFI has allocated \$210 million to the John R. Evans Leaders Fund (JELF) for the period April 2020 to March 2023. As usual, the CFI has distributed this amount as individual allocations to the largest universities and in the pooled allocation for the smallest universities. The CFI has also allocated an additional \$49.875 million over the period April 2018 to March 2021 to support 285 additional Canada Research Chairs. Overall, this represents an increase of 30 percent compared to the funding initially available in the 2017–20 allocation period. Institutions are making good and strategic use of their JELF allocations. This has contributed to institutions' ability to attract excellent researchers to Canada to fill these Chairs.

Major Science Initiatives Fund

Based on the Expert Committee assessments related to the 2019 midterm review, the MSI Fund is achieving its objectives. Support from the MSI Fund is enabling leading-edge research and technology development that has already demonstrated positive impacts on the social, health and economic wellbeing of Canadians that would not have been otherwise possible.

The national research facilities supported through this fund offer unique capabilities to Canadian researchers and are increasingly recognized at the international level for the science they enable. They act as magnets for attracting international talent to Canada. The MSI Fund, both through the conditions imposed during the review processes and the CFI's oversight mechanisms, has driven the maturation of these facilities and professionalization of the governance and management structures.

CFI staff will use the knowledge gained through these Expert Committees to evolve the existing funding mechanism for future competitions for this fund to ensure that it remains effective. Staff will also conduct a post-mortem exercise to identify areas for improvement in our processes for the next competition. We will also organize the sixth annual workshop for facilities supported through the MSI Fund in 2021 and a webinar series to share experiences and best practices in the operations and governance of major science facilities.

College-Industry Innovation Fund

Proposals for the next College-Industry Innovation Fund Stream 1 competition are expected in May 2020. The Board of Directors will make final funding decisions on this stream in November 2020. We will also participate in the 18th College and Community Innovation Program – Build Innovation Enhancement Grants competition managed by NSERC. For this competition, the deadline to submit Letters of Intent to NSERC is in May 2020. The CFI Board of Directors will make funding decisions in March 2021.

Northern Research Infrastructure Fund

In August 2019, the CFI received authorization from the Minister of Science and Sport to expend \$25 million in accrued interest income on a new funding initiative. Tentatively named the Northern Research Infrastructure Fund, it will support the building of capability to conduct high-quality research in Canada's northern regions, as defined in the Government of Canada's Arctic Policy Framework.

During 2020–21, CFI staff will be consulting with a wide range of stakeholders to determine the most appropriate design for the new fund. This consultation will focus on how it can best meet the needs of northern institutions as they develop their research capabilities. No timetable has yet been set for the delivery of this fund. This, along with many other aspects, will be determined following the consultation process.

Managing the financial aspects of the CFI's activities

During 2020–21, the CFI finance team will undertake the following activities:

The CFI investment portfolio: Following standard practice, senior management and the Board of Directors Investment Committee will review the CFI's investment strategy and investment policy in mid-2020. Management will present the results of this review and any subsequent recommendations, to the Board of Directors in autumn 2020.

Institutional monitoring visits: Over the course of fiscal year 2020–21, the finance team is planning to perform between three and five monitoring visits. The purpose of these monitoring visits is to ensure that institutions receiving funding have proper practices and processes in place to manage awards and to share good practices noted at the various institutions visited.

Contribution audits: The finance team is planning to conduct between six and 10 contribution audits of CFI-funded projects during 2020–21. As usual, these audits will include a mix of low- to high-risk projects, including those where the CFI investment is \$10 million or more.

Financial reports: In addition to its other activities, the finance team expects to review approximately 950 financial reports in 2020–21. These include both interim and final financial reports, and annual reports on expenditures claimed under the Infrastructure Operating Fund.

Communicating the value of the CFI's funding for Canada

In 2020–21, the CFI plans to communicate the value and impact of its funding to a range of audiences, including the international research community, Canadian businesses and entrepreneurs, governments and stakeholders, as well as the Canadian public.

We will do this by:

- **Increasing users on the Research Facilities Navigator:** We will continue to grow and enhance the value of the Navigator, our online directory of Canadian research facilities where researchers and innovators connect, by onboarding additional Government of Canada facilities and by reaching out to institutions to highlight the benefits of listing their labs. We will also strive to expand the users of the Navigator by connecting with like-minded organizations and business groups in promoting it as a key resource in driving Canadian research partnerships and innovation.
- **Demonstrating return on investment:** We will continue to raise awareness with Parliamentarians and key decision makers about the value the CFI brings to Canadians — from increasing the capacity for bright minds to conduct research to providing spaces where the next generation of researchers can grow their careers. Through all of our communications activities, we will highlight the return on government investments in the CFI.
- **Promoting the societal impacts of the CFI's funding:** We will launch a promotional campaign in the fall that showcases stories about projects that have contributed strong social or cultural benefits for Canadians and for the world. From helping lift people out of poverty and enriching social networks for the elderly to contributing to international development efforts, integrating newcomers into our communities and establishing healthy habits for our children, these stories will look at partnerships that are helping improve the social fabric of Canada.
- **Measuring our success:** We will continue to integrate key metrics in all of our activities to ensure we can gauge the impact our communications are having on our key audiences — and that the messages we disseminate about the value of Government of Canada funding in research successfully reach and engage them.

International Conference on Research Infrastructures 2020

In September 2020, the CFI will host the International Conference on Research Infrastructures (ICRI 2020) in Ottawa.

ICRI 2020 will bring together approximately 500 policy experts, facility managers, leading researchers and a wide variety of stakeholders to discuss challenges and emerging trends for research infrastructures around the world.

The specific objectives of ICRI 2020 are to:

- Provide an international forum for discussion on the development of global research infrastructures as well as on issues of common interest such as the internationalization of research infrastructures and assessing their impact on society and the economy;
- Facilitate and promote international cooperation between research infrastructures and their counterparts in all regions of the world; and,
- Identify best practices and effective approaches to determine how research infrastructures can best enable research excellence.

The CFI is collaborating with NSERC, SSHRC, and CIHR along with the National Research Council of Canada, the Labs Canada division of Public Works and Government Services Canada, and ISED to help organize and fund ICRI 2020.

The context for ICRI 2020 is the globalization of research and technology development in addition to the increasing need for new knowledge, technologies and innovations to address global challenges and social, economic, health and environmental problems. As researchers continue to address these challenges and problems, using both existing and new types of tools, a number of common issues related to the development and exploitation of research infrastructures have emerged. These include such matters as the financing and organizing of international research infrastructures; the development of governance structures required for operating and effectively using increasingly complex infrastructures; research data management and regulation; and the necessity to assess the impact that research infrastructures have on the advancement of knowledge.

These issues, among many others, are confronting researchers, research institutions and funding organizations around the world. Various jurisdictions address these issues in a variety of ways, and as a result, there is much to learn from each other in determining what measure and actions work best, in what domestic context and through what particular means.

The overall impacts of ICRI 2020 are expected to be:

- Identification of common interests and challenges in relation to the design, development and use of research infrastructures across a range of scales and across a range of disciplines;
- Improved methods for both assessing and communicating the societal value of research infrastructures;
- Identification of opportunities for increased international collaboration among participating nations;
- Identification and refinement of best practices in a number of areas related to the management and operations of research infrastructures; and,
- Increased understanding of the specific challenges of data management and regulation in relation to internationalization of research infrastructures, the training of highly skilled researchers and technicians and the evaluation of research impacts and cross-sectoral collaboration.

Additional Canadian contributions to the conference proceedings include a focus on academic-government research collaborations, emerging issues such as citizen science, equity and diversity of the research workforce, and the public's reactions to the advancement of research knowledge.

One of the most important overall impacts of ICRI 2020 is expected to be significantly increased understanding and knowledge of the differences between nations in how research infrastructures are selected, developed, regulated and used to generate knowledge and foster research excellence. As previous ICRI conferences have shown, it is valuable to learn both how researchers, funding organizations, research institutions and elected officials regard research infrastructures, and how they are used, in terms of access regimes, governance systems, funding mechanisms, evaluation methodologies, etc.

The ICRI conferences are a unique opportunity for the global community to learn about new approaches to all of these matters, share successes and failures with individuals facing similar challenges, and build collaborations that would not occur otherwise.

Analyzing corporate performance, outcomes and impacts

In 2020–21, we will continue to track performance data as outlined in our 2020 Performance evaluation, risk and audit framework. In keeping with established practices, we will prepare our annual performance report to provide the CFI management team with evidence to explore areas for improvement and efficiency.

We will be exploring new data visualization options with the goal of developing an interactive version of our annual Report on results for 2020. This will allow users of our popular report to visualize some data subsets and undertake subgroup analyses.

External contractors will examine the relevance and efficacy of the College-Industry Innovation Fund (CIIF). The evaluation will be completed in time for the results to inform any design and delivery changes to be announced in December 2020.

The CFI's performance, analytics and evaluation team will begin projects related to organizational objectives and expected results, including the role the CFI plays in:

- Supporting the establishment of productive teams, networks and collaborations; and,
- Enhancing Canada's capacity to conduct world-class research and technology development.

Work will also continue on a collaborative regional impact assessment project with the Fonds de recherche du Québec and the Ministère de l'Économie et de l'Innovation.

APPENDIX 1: FINANCIAL CHARTS

Table 1: Investment Plan (Commitments) for the Contributions under each Agreement

First Funding Agreement (\$4,390M)*							
	Cumulative March 31, 2019 (\$M)	2019–20 (\$M)	2020–21 (\$M)	2021–22 (\$M)	2022 and later (\$M)	To be determined (\$M)	Total (\$M)
Fund	Commitments** (Actual)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	
Automotive Partnerships Canada	9						9
Canada Research Chairs	194						194
Career Awards	6						6
College Research Development	16						16
Cyberinfrastructure Initiative	70						70
Digging into Data / Discovery Frontiers	1						1
Exceptional Opportunities and other	23					26	49
Infrastructure Operating	1,036		3				1,039
Innovation (1998–2005)	1,758						1,758
Innovation Fund 2015	54						54
Innovation Fund 2017	2						2
International	202						202
John R. Evans Leaders (and Leaders Opportunity/New Opportunity)	878		9				887
Leading Edge/New Initiatives	832						832
Major Science Initiatives 2014 Special Competition	24						24
National Platforms	84						84
Northern Research Infrastructure						25	25
Research Development	35						35
Research Hospital	488						488
Thirty Meter Telescope	25						25
High-Luminosity Large Hadron Collider		10					10
Total	5,737	10	12	0	0	51	5,810

2010 Funding Agreement (\$600M)*							
	Cumulative March 31, 2019 (\$M)	2019–20 (\$M)	2020–21 (\$M)	2021–22 (\$M)	2022 and later (\$M)	To be determined (\$M)	Total (\$M)
Fund	Commitments** (Actual)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	
College-Industry Innovation	25						25
Infrastructure Operating	97						97
John R. Evans Leaders	140						140
Leading Edge/New Initiatives	158						158
Major Science Initiatives	183						183
Total	603	0	0	0	0	0	603
2014 Contribution Agreement (\$499.85M)*							
College-Industry Innovation	39						39
Infrastructure Operating	115						115
Innovation Fund 2015	207						207
John R. Evans Leaders	140						140
Total	501	0	0	0	0	0	501
2015 Contribution Agreement (\$1,330M)*							
College-Industry Innovation		10	15	10			35
Available for reallocation (previously Cyberinfrastructure Initiative)						10	10
Infrastructure Operating	158	35	11	3			207
Innovation Fund 2017	426						426
John R. Evans Leaders	118	109	22				249
Major Science Initiatives	329	71					400
Available for reallocation (from Infrastructure Operating)						4	4
Total	955	225	48	13	0	14	1,331

2019 Contribution Agreement (\$1,970M)*							
	Cumulative March 31, 2019 (\$M)	2019-20 (\$M)	2020-21 (\$M)	2021-22 (\$M)	2022 and later (\$M)	To be determined (\$M)	Total (\$M)
Fund	Commitments** (Actual)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	
College-Industry Innovation				5	15		20
Infrastructure Operating			141	23	145		309
Innovation			400		400		800
John R. Evans Leaders			70	70	70		210
Major Science Initiatives (top-up)	40	120					160
Major Science Initiatives		50			350		400
Operating Expenditures			9	16	47		72
Total	40	170	620	114	1,027	0	1,971

* Each of the funding and contribution agreements has generated interest income which is directed to project funding: \$1.410 billion from the first Funding Agreement; \$3 million from the 2010 Funding Agreement; \$1.4 million from the 2014 Contribution Agreement; \$1.5 million from the 2015 Contribution Agreement and \$0.5 million from the 2019 Contribution Agreement. There are no anticipated revenues from other sources expected in future years other than interest income.

** Actual committed amounts are net of amounts that will be unused by eligible recipients, as confirmed through final financial reports for infrastructure projects submitted as of September 30, 2019.

Table 2: Planned expenditures (disbursements) detailed by fund

First Funding Agreement (\$4,390M)*							
	Cumulative March 31, 2019 (\$M)	2019–20 (\$M)	2020–21 (\$M)	2021–22 (\$M)	2022 and later (\$M)	To be determined (\$M)	Total (\$M)
Fund	Commitments** (Actual)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	
Automotive Partnerships Canada	9						9
Canada Research Chairs	194						194
Career Awards	6						6
College Research Development	16						16
Cyberinfrastructure Initiative	55	6	7	2			70
Digging into Data / Discovery Frontiers	1						1
Exceptional Opportunities and other	23					26	49
Infrastructure Operating	967	26	20	11	15		1,039
Innovation Fund (1998–2005)	1,758						1,758
Innovation Fund 2015	37	6	5	4	2		54
Innovation Fund 2017	1	1					2
International	202						202
John R. Evans Leaders (and Leaders Opportunity/New Opportunity)	872	2	8	4	1		887
Leading Edge/New Initiatives	825	5	2				832
Major Science Initiatives 2014 Special Competition	24						24
National Platforms	84						84
Northern Research Infrastructure						25	25
Research Development	35						35
Research Hospital	488						488
Thirty Meter Telescope	25						25
High-Luminosity Large Hadron Collider				2	8		10
Total	5,622	46	42	23	26	51	5,810

2010 Funding Agreement (\$600M)							
	Cumulative March 31, 2019 (\$M)	2019–20 (\$M)	2020–21 (\$M)	2021–22 (\$M)	2022 and later (\$M)	To be determined (\$M)	Total (\$M)
Fund	Commitments** (Actual)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	
College-Industry Innovation	24	1					25
Infrastructure Operating	85	12					97
John R. Evans Leaders	139	1					140
Leading Edge/New Initiatives	156	2					158
Major Science Initiatives	182	1					183
Total	586	17	0	0	0	0	603
2014 Contribution Agreement (\$499.85M)							
College-Industry Innovation	23	9	4	1	2		39
Infrastructure Operating	35	22	28	23	7		115
Innovation Fund 2015	179	13	9	4	2		207
John R. Evans Leaders	134	2	1	2	1		140
Total	371	46	42	30	12		501
2015 Contribution Agreement (\$1,330M)							
College-Industry Innovation		1	10	12	12		35
Available for reallocation (previously Cyberinfrastructure Initiative)						10	10
Infrastructure Operating		9	22	34	142		207
Innovation Fund 2017	163	80	83	44	56		426
John R. Evans Leaders	66	56	85	19	23		249
Major Science Initiatives	147	77	86	90			400
Available for reallocation (from Infrastructure Operating)						4	4
Total	376	223	286	199	233	14	1,331

2019 Contribution Agreement (\$1,970M)							
	Cumulative March 31, 2019 (\$M)	2019–20 (\$M)	2020–21 (\$M)	2021–22 (\$M)	2022 and later (\$M)	To be determined (\$M)	Total (\$M)
Fund	Commitments** (Actual)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	Commitments (Projected)	
College-Industry Innovation					20		20
Infrastructure Operating					309		309
Innovation			5	97	698		800
John R. Evans Leaders			21	61	128		210
Major Science Initiatives (top-up)	8	32	32	32	56		160
Major Science Initiatives					400		400
Operating expenditures			9	16	47		72
Total	8	32	67	206	1,658	0	1,971

* In addition to disbursements to eligible recipients, a total of \$230.7 million had been disbursed as of March 31, 2019 for operating expenses of the Foundation. These expenses are forecasted to be approximately \$16 million per year in the next two years.

Table 3: Annual cash flow requirements

Cash Flow Requirements*							
	Cumulative March 31, 2019 (\$M)	2019–20 (\$M)	2020–21 (\$M)	2021–22 (\$M)	2022 and later (\$M)	To be determined (\$M)	Total (\$M)
Disbursements	Actual	Projected	Projected	Projected	Projected	Projected	
2010 Funding Agreement	586	17					603
2014 Contribution Agreement	371	46	42	30	12		501
2015 Contribution Agreement	376	223	286	199	233	14	1,331
2019 Contribution Agreement	8	32	67	206	1,658		1,971
Total disbursements	1,341	318	395	435	1,903	14	4,406
Received from the Government	1,365	359					1,724
Generated interest income	6						6
Expected Government payments as per cash flow requirements**			324	435	1,903	14	2,676
Total funding available***	1,371	359	324	435	1,903	14	4,406
Difference for the period	30	41	-71	0	0	0	0
Cumulative difference	30	71	0	0	0	0	0

* Funds for the first Funding Agreement have all been received from the Government of Canada. Therefore, there are no future cash flow requirements for this agreement.

** This reflects the cash flow requirements.

*** Of the amount of \$324 million for 2020–21, \$162 million is needed in early April 2020 to cover expenses of April 2020 to September 2020. The balance of \$162 million can be paid during summer 2020. Of the amount of \$434.6 million for 2021–22, \$208.7 million is needed in early April 2021 to cover expenses of April 2021 to September 2021. The balance of \$225.9 million can be paid during summer 2021.

There are currently no amounts owing by the CFI to the Government of Canada.

APPENDIX 2: KEY RISKS AND MITIGATION MEASURES

In 2019, the CFI engaged KPMG LLP to assist with the update of key risks facing the organization. As a result of this exercise, we identified ten primary risks and related mitigation measures. These are summarized in the table below. Information on secondary risks is available upon request

STRATEGIC RISKS
1. Alignment with needs of funder: Risk that the CFI’s activities do not continue to align with the needs and expectations of the federal government Mitigation measures: • The CFI undertakes regular, ongoing discussions with Government of Canada (Innovation, Science and Economic Development Canada (ISED)) officials on the requirements for research infrastructure, the leveraging of benefits, the multidisciplinary reach and impacts of investments and ideas for the future of the CFI and the research and innovation ecosystem. • The CFI regularly provides parliamentarians with evidence on the ways infrastructure assists in attracting and retaining top research talent, enables world-class research and supports innovation. • The CFI leads and participates in outreach and communications activities specifically targeted to parliamentarians. • The CFI issues material to demonstrate how infrastructure funding has been and continues to be responsive to government priorities and research community requirements. • The CFI disseminates success stories and results of performance and evaluation assessments to demonstrate the results of investments. • Responsibilities for conducting engagement activities have been defined within the management team. • Funders are given opportunities to provide input on activities, processes and funding mechanisms. • The CFI periodically assesses whether funding mechanisms are addressing stakeholder needs and, when necessary, makes appropriate adjustments in the program architecture and fund delivery mechanisms.

- 2. Understanding:** Risk that key stakeholders, including federal and provincial funders do not understand the activities, outcomes and impacts (i.e. benefits) associated with funding and the CFI's progress against its strategic priorities

Mitigation measures:

- The CFI reports on and communicates to federal and provincial funders on the outputs, outcomes and impacts of the research they have enabled.
- The CFI maintains a dialogue with the Government of Canada and with other funding agencies on its role and programs and on the level of funding provided.
- The CFI Research Facilities Navigator fosters and enables communication and linkages between CFI-funded institutions and external stakeholders in the private and public sectors.
- The CFI encourages the research community to communicate with government about the value of CFI funding.
- Funders are given opportunities to provide input on activities, processes and funding mechanisms.

- 3. Inability to measure and promote value:** Risk that the CFI is unable to effectively measure, demonstrate and promote the value of its funding and related return on investment (end results, economic and social impacts, institutional success rates and value proposition)

Mitigation measures:

- The Performance, Evaluation, Risk and Audit Framework (PERAF) exercise periodically reviews and updates information requirements needed to inform strategic business decisions and directions.
- The CFI consistently reviews and updates the information captured for both structured data and unstructured data to support impact analysis.
- The CFI identifies information to measure and demonstrate the value of its funding.
- To articulate its value, the CFI develops reports on the outputs, outcomes and impacts of the research enabled by infrastructure.

- 4. Reputation:** Risk that the CFI's reputation is adversely affected by an incident, event or decision associated with CFI-funded infrastructure or with decisions by governing bodies with which they are associated

Mitigation measures:

- A crisis communication plan is in place.
- A daily scan of media and social media outlets is done to identify emerging issues and potential threats.
- The CFI conducts risk-based monitoring of projects in accordance with the Tool for Risk Assessment and Management (TRAAM).
- The CFI uses their seat at the table of the Canada Research Coordinating Committee (CRCC) meetings to influence the direction of the committee and accompanying government influencers who sit at the table.

GOVERNANCE RISKS

- 5. Turnover at Board of Directors:** Risk of excessive turnover of Board Directors in any one year, resulting in a number of new Directors and having an impact on the ability of the Board to provide quality oversight

Mitigation measures:

- The CFI promotes Governor in Council (GIC) appointment openings through its network.
- The CFI has an established onboarding process and orientation materials for new Board Directors.
- The CFI has created candidate profiles to support the replacement process.
- The CFI has developed comprehensive Board materials.

INSTITUTIONAL/OPERATIONAL RISKS

- 6. Sufficient capacity at institutions:** Risk that institutions do not have sufficient capacity to support major and unique initiatives (such as those funded through the Major Science Initiatives (MSI) Fund and multijurisdictional or other large initiatives)

Mitigation measures:

- Institutional capacity is assessed by both the CFI and matching funders at the application phase.
- The CFI conducts risk-based monitoring of projects in accordance with the Tool for Risk Assessment and Management (TRAAM), and conducts midterm reviews for facilities funded through the Major Science Initiatives (MSI) Fund.
- The CFI conducts consultations with the research community to determine programming needs.
- The CFI implemented an increase of funding from the MSI Fund from 40 percent to 60 percent of a facility's funding needs, as supported in Canada's Fundamental Science Review (2017).
- The CFI provides funding competitions at recurring intervals through the Innovation Fund.

- 7. Matching funding:** Risk that partner and matching funding are not secured or sustained in a timely manner due to changes in partners' needs, provincial government mandates, priorities, economic downturn, and/or limited uptake

Mitigation measures:

- The CFI provides provincial partners with opportunities to provide input on activities, processes and funding mechanisms.
- The priorities of provincial partners are taken into consideration in the application review process.
- The CFI communicates the value of the 40 percent funding it provides.
- The CFI communicates with provinces on funding parameters and competition schedules to assist them in their planning.
- CFI funding is provided only when partner funding has been secured. There is flexibility on timelines when needed.

OPERATIONAL RISKS

- 8. Business continuity:** Risk that the CFI is not able to recover/continue key systems (i.e. the CFI Awards Management System (CAMS)) and critical operations in a timely manner in the event of an incident

Mitigation measures:

- Regular data backup plans (e.g. for delays or new releases) and maintenance operations are in place.
- Manual processes exist that can be relied on in the event of business interruption.
- Key systems and documents are stored in a cloud storage and there are mirror backups that are available on different servers.
- Management has identified the organization's key business continuity time as before applications are due and before a Multidisciplinary Assessment Committee (MAC) meeting.
- A key priority for the information technology group is to look at continued system availability.

INFORMATION TECHNOLOGY/INFORMATION MANAGEMENT RISKS

- 9. Security:** Risk of security breach and loss of, or inappropriate access to, personal or confidential data (e.g. researcher data, banking, human resources or travel information)

Mitigation measures:

- The CFI has conducted two security reviews on the CFI Awards Management System (CAMS).
- A spam filter is in place to screen email communications received by the CFI.
- Management indicates that staff has a high-level of security awareness.

- 10. Information management:** Risk that information is not managed and/or accessible in a manner that supports and enables effective and timely decision-making

Mitigation measures:

- A Data Governance Committee has been established.
- The Information Management (IM) Project is ongoing and IM is a regular agenda item at Steering Committee meetings, led by two champions.

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