



# Corporate Plan 2018–19

## Table of contents

<b>The role of the Canada Foundation for Innovation</b>	<b>3</b>
<b>Short and medium term outputs and outcomes from 2017–18</b>	<b>8</b>
2017 Innovation Fund	8
John R. Evans Leaders Fund	8
2017–22 Major Science Initiatives Fund competition	9
Cyberinfrastructure Initiative	10
College-Industry Innovation Fund	10
Infrastructure Operating Fund	11
Governor General’s Innovation Awards	11
Managing the financial aspects of the CFI’s activities	11
Assessing the impacts of CFI funding	13
Creating a strong voice and telling our stories to Canadians	13
<b>Successes and remaining challenges from 2017–18</b>	<b>16</b>
<b>Planned activities and implementation schedule for 2018–19</b>	<b>17</b>
Innovation Fund	17
John R. Evans Leaders Fund	17
Major Science Initiatives Fund	17
Cyberinfrastructure Initiative	18
College-Industry Innovation Fund	18
Governor General’s Innovation Awards	18
Communicating the value of CFI funding for Canada	18
Managing the financial aspects of CFI’s activities	19
Improving CFI’s information management capabilities	20
Analyzing corporate performance, outcomes and impacts	20
<b>Appendix 1: Financial charts</b>	<b>21</b>
<b>Appendix 2: CFI’s key risks and mitigation measures</b>	<b>25</b>

## 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 mission 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 technology.

The CFI invests in the infrastructure that Canada's best researchers require to conduct leading-edge research. It funds up to 40 percent of a project's cost. Institutions, in partnership with provincial 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 quality of life for all Canadians. By supporting the country's capacity for world-class research, we play a vital role in producing social, economic, environment 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 CFI is expected to enhance the capacity of universities, colleges and research hospitals to:

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

## **Organizational context**

In the summer of 2017, Dr. Gilles Patry completed his term as President and CEO of the CFI, and we welcomed the arrival of Dr. Roseann O'Reilly Runte, formerly the President of Carleton University, as CFI's new President and CEO. Dr. O'Reilly Runte brings a wealth of experience, knowledge and fresh ideas to the position.

The CFI Board of Directors is also undergoing a renewal process, with a minimum of five and up to seven new directors expected to be in place by the end of 2018–19. Between four and six of these new directors will be appointed by the Government of Canada through Orders in Council. Among these will be a new Chair of the Board to replace our long-standing chairperson, Dr. Kevin Smith. One director will be appointed by the CFI Members in June 2018. The Government of Canada has introduced a new process for selecting Governor-in-Council appointments and we do not yet know when these will be completed.

After 17 years at our current location, in the summer of 2018, the CFI will be moving into new premises at 55 Metcalfe Street, Ottawa. With a smaller footprint on a single floor, the new offices are expected to result in savings in leasing expenditures, improved teamwork and a more cohesive, technology-ready work environment. The associated one-time moving costs have been fully budgeted and the actual move is expected to result in minimal disruption of activities.

The way that the CFI receives funds allocated by the Government of Canada has changed significantly over the past few years. Currently, funds are transferred from the Treasury Board to the CFI based on the maximum annual amounts specified in the contribution agreements and on a biannual basis based on disbursement projections provided by the CFI to the Department of Innovation, Science and Economic Development. As a result of this just-in-time approach, the rate of disbursements to eligible recipients is drawing down investment balances. It is anticipated that the CFI investment portfolio will be nearly depleted by the end of the 2018–19 fiscal year. At that point, the CFI will no longer be in a position to contribute earned investment income to eligible research infrastructure projects. After 2020–21, once funds set aside in 2012 have been depleted, the CFI will no longer have an identified, sustainable source of funds to cover operating expenses.

Finally, Dr. O'Reilly Runte, as the representative of the CFI, has begun to participate in the deliberations of the new Canada Research Coordinating Committee. Composed of the tri-agency presidents, the Chief Science Advisor, and the Deputy Ministers of Health Canada and Innovation, Science and Economic Development Canada, this committee has been mandated by the Minister of Science to identify actions that will improve coordination in the delivery of federal research support. The committee is expected to ramp up its work in early 2018.

## **The CFI's funding and contribution agreements**

The CFI currently operates under two funding agreements and two contribution agreements with the Government of Canada as represented by, and under the authority of, the Minister of Industry (now the Minister for Innovation, Science and Economic Development). All four agreements are currently active.

- The first funding agreement specifies the conditions under which all funds allocated to the CFI between 1997 and 2009, totaling \$4.39 billion, were distributed to eligible recipients. In addition, these sums generated \$1.6 billion in interest income that has been 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 to be distributed under a second funding agreement, which was signed in July 2010.
- In March 2014, the CFI signed a contribution agreement with the Government of Canada for \$499.85 million allocated through the Economic Action Plan 2012. We are now delivering funding competitions according to this contribution agreement.
- In September 2015, the CFI signed our most recent contribution agreement with the Government of Canada for \$1.33 billion. We are now completing the funding competitions according to this contribution agreement.

In 2014–15, as announced in the Government of Canada's Economic Action Plan 2013, the CFI also launched competitions in connection with the \$225 million of interest income accrued under the first funding agreement. These funds were used to augment both the 2015 Innovation Fund and the Major Science Initiatives Fund competitions, to sustain our operations and to support the Cyberinfrastructure Initiative.

Between 2012 and 2015, the CFI generated an additional \$35 million in interest income. As set out in section 9.01 of the 1997 Funding Agreement between the Government of Canada and the CFI, we have written to the Minister of Science and the Minister of Innovation, Science and Economic Development on the use of the uncommitted funds. The Minister of Science has recommended that the funds be set aside, the use of which will be determined by the Minister no later than March 31, 2018.

## **The CFI's strategic directions**

The CFI's senior management team and Board of Directors have begun to revise and refresh the organization's 2012–17 strategic directions. To start the process, a preliminary discussion took place at the November 2017 Board of Directors meeting. While the Government of Canada considers the recommendations from the Fundamental Science Review Panel, and ongoing spending authority for the CFI, we continue to consult with the research community, institutions and funding partners and will submit a discussion paper to the Board in the spring of 2018.

In the meantime, the CFI senior management team has begun to consider the following questions to frame the development of the next strategic plan:

- **Strengthening strategic investments:** Initiatives such as the federal supercluster program seek to build on past investments while reshaping the economy. In conjunction, how can we best continue to build an environment that fosters growth in the knowledge economy?
- **Building capacity across the system:** Are there ways the CFI can help enable regional clusters and small institutions to mirror the successes of the superclusters?
- **Investing in data and connectivity:** Given the ongoing digitization of research and technology development, should the CFI place greater focus on more high-powered digital capacity?
- **Fostering partnerships and networks:** Can encouraging the sharing of physical resources help bring together disciplines and institutions?
- **Building research teams both in Canada and internationally:** Solving big problems requires collaboration. Ideas from across our country need to be considered and nurtured and major equipment must be shared. What additional steps can the CFI take to promote collaboration and the sharing of research infrastructure?
- **Supporting new and early career researchers:** The latest technologies enable young researchers to explore bold ideas, launch new enterprises and work with all sectors of society. What actions can the CFI undertake to ensure these researchers have the support they need?
- **Building spaces for innovative thinking, cross-disciplinary work and ideation labs:** Can supporting such infrastructure help break down silos to drive discovery and innovation?
- **Maintaining cutting-edge capacity with the latest technology:** In the global race for talent, state-of-the-art infrastructure is essential to attract world-class researchers to Canada. What will it take to maintain capacity at this level?
- **Responding to national needs, including the development of the North:** issues such as food and water security, cyber security, health, social engagement and a changing environment requires the mobilization of talent and flexible approaches. Are there possibilities for the CFI to play a role in supporting national priorities?

## The CFI suite of funds

### Core funds

**Innovation Fund:** This flagship support mechanism 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, world-class science 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 be missed within the regular CFI 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 CFI-funded projects to help ensure their optimal use.

### Ongoing special initiatives

**Cyberinfrastructure Initiative:** Supports Canada's advanced research computing network through Compute Canada, as well as cutting-edge, domain-specific research data management projects.

## Short and medium term outputs and outcomes from 2017–18

### 2017 Innovation Fund

The 2017 Innovation Fund was the CFI's tenth large-scale, nation-wide research infrastructure competition. Institutions were challenged to propose transformative infrastructure projects that will underpin cutting-edge, globally competitive research. It further challenged institutions to follow their strategic research plans and establish priorities that build on their distinct advantages. Through our merit-review process, we ensured that proposals were reviewed in a fair, competitive, transparent and rigorous manner. The three-stage merit-review process took place from November 2016 to May 2017 and Board decisions were made in June 2017.

The 2017 Innovation Fund competition was a major undertaking for the research community and for our staff. CFI's team of professional program officers administered the review of 351 project proposals with a total requested amount of \$1.2 billion. They recruited 374 expert reviewers, 75 percent of whom were from outside of Canada. As the three-stage merit-review process moved forward, staff organized 113 Expert Committee meetings, and conducted 32 face-to-face meetings between Expert Committees and the proponents of large-scale or exceptionally complex projects. Staff then recruited 120 highly accomplished researchers to participate in 11 Multidisciplinary Assessment Committees. Finally, the recommendations of the Multidisciplinary Assessment Committees were submitted to the Special Multidisciplinary Assessment Committee that identified the highest quality and most promising proposals for submission to the CFI Board of Directors for decisions.

The public announcement of the results of the 2017 Innovation Fund competition took place in October 2017 at the University of Manitoba. The Honourable Kirsty Duncan, Minister of Science, announced the investment of more than \$554 million in 117 new infrastructure projects at 61 universities, colleges, and research hospitals across Canada. This amount included \$424 million in capital awards and \$127 million in operational support. CFI staff are currently working with institutions to ensure that all partner contributions are secured, that all conditions on funding are fully met, and that projects are finalized in due time.

### John R. Evans Leaders Fund

At a time of intense international competition, the John R. Evans Leaders Fund assists institutions in attracting and retaining the very best of today's and tomorrow's researchers. The John R. Evans Leaders Fund offers institutions the opportunity to:

- Acquire infrastructure for their leading researchers to undertake cutting-edge research; and,



- Create competitive research support packages in the form of infrastructure funding and a portion of the operating and maintenance costs from the CFI, coupled with direct research costs from partner organizations.

The John R. Evans Leaders Fund receives proposals from eligible institutions three times per year. During 2017, the CFI Board approved 415 projects for a maximum CFI contribution of \$71,731,347. The final amount of the CFI contribution is subject to finalization of budgetary details, confirmation of the 40 percent/60 percent share with the institutions and any specified conditions. An additional 30 percent of the maximum CFI contribution (\$21,519,404) will also go to the institutions from the Infrastructure Operating Fund.

In order to improve the ability of institutions to better manage their John R. Evans Leaders Fund allocation, we have introduced a module in the CFI Awards Management System that allows administrators to monitor and track their institutional allocation. This promotes better planning and provides up-to-the-minute information on the use of their allocations.

### **2017–22 Major Science Initiatives Fund competition**

The CFI's Major Science Initiatives Fund supports the operation and maintenance costs at Canada's unique, national research facilities. The process to finalize awards for the 17 national research facilities supported under the 2017–22 Major Science Initiatives Fund competition was concluded in 2017–18. This included confirming partner contributions, negotiating and signing inter-institutional agreements, communicating award conditions and budget concerns and identifying potential short-term operational risks and management challenges.

As specified by the Major Science Initiatives oversight framework, the CFI tailors oversight activities for each facility in light of its scope, complexity and unique features. As part of this process, the CFI collaborated with each facility to define the set of key performance indicators that will be reported to the CFI on an annual basis starting in June 2018. These indicators will form the basis of the facility's performance measurement strategy for the 2017–22 funding cycle. The annual performance report will be the main tool used by the CFI in measuring the performance of the funded national research facilities.

The fourth annual Major Science Initiatives workshop was held in Ottawa on October 19 and 20, 2017. Under the theme "Supporting Canada's Research Communities," this year's workshop provided an opportunity for more than 100 attendees from all 17 national research facilities, including representatives from major federal and provincial funding partners, to network and share good practices on the challenges of governing, managing and sustaining the operations of national research facilities. Since the workshops have proven to be a highly valuable contribution to the good governance and management of Canada's national research facilities, we intend to continue holding them on an annual basis.

## **Cyberinfrastructure Initiative**

During 2017–18, the CFI continued to deliver the Cyberinfrastructure Initiative. Its overarching objective is to enhance the capacity of researchers to conduct leading-edge research in areas of demonstrated strength by supporting the infrastructure needs of computationally and data-intensive research.

This initiative consists of two funding streams: Challenge 1 stream competitions select data infrastructure projects that enable communities of researchers, data scientists, data analysts, software developers and other experts to devise optimal ways of organizing and using research data resources. The Challenge 2 stream identifies funding requirements for upgrading and modernizing the computational and data storage capacities of the pan-Canadian advanced research computing platform, managed by Compute Canada.

The second competition under Challenge 1 of the Cyberinfrastructure Initiative is currently in progress and will conclude with funding decisions by the CFI Board of Directors in March 2018. The CFI requires communities of researchers to come together to form multi-institutional consortia and propose research data infrastructure projects that create tailored, shared and integrated data resources capable of enabling excellent research on significant scientific, social and economic questions. The CFI expects to fund between five and 10 proposals in this competition.

## **College-Industry Innovation Fund**

The College-Industry Innovation Fund is designed to enhance the capacity of colleges to support business innovation in Canada. The fund provides colleges with state-of-the-art, industry-relevant research infrastructure, allowing them to engage in partnerships with the private sector in an area of priority to both the institution and local companies.

Specifically, these partnerships promote business innovation by:

- Encouraging interactions between colleges and their industrial partners;
- Enabling colleges to respond to technological challenges identified by their industrial partners;
- Allowing colleges to undertake large-scale collaborative research projects;
- Enhancing applied research and technology development capacity at colleges in areas of institutional strategic priority; and,
- Providing students with opportunities to participate and gain know-how in applied research and technology transfer activities through direct hands-on experience with state-of-the-art instrumentation.

The CFI has allocated up to \$40 million, plus up to \$12 million in infrastructure operating funding, for the various College-Industry Innovation Fund competitions that are scheduled to take place between 2015 and 2019. During 2017–18, the CFI Board approved 15 projects under the College-Industry Innovation

Fund for a maximum CFI contribution of \$12,014,770. These awards will generate an allocation of 30 percent (\$3,604,431) of the maximum CFI contributions to the institutions' Infrastructure Operating Fund envelope.

### **Infrastructure Operating Fund**

In accordance with our current contribution agreements, the CFI continues to contribute towards the operating and maintenance costs of CFI-funded 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, the College-Industry Innovation Fund and the Cyberinfrastructure Initiative (for Challenge 1 awards only).

### **Governor General's Innovation Awards**

During 2017–18, the CFI conducted the review and adjudication process for the third round of the Governor General's Innovation Awards.

These awards are intended to:

- Celebrate excellence in innovation across all sectors of Canadian society;
- Inspire Canadians, particularly Canadian youth, to be entrepreneurial innovators; and,
- Foster an active culture of innovation that has a meaningful impact on our lives.

Nominations are received through a national network of organizations that have been designated as nominating partners by the Office of the Secretary to the Governor General. Nominations are accepted between September 15 and November 15 each year.

The assessment committees will meet in February 2018 and the Selection Committee will convene in early March. The CFI Board of Directors will then be asked to confirm the recommendations made by the Selection Committee at its March 2018 meeting. The lists of finalists and award winners will then be transmitted to the Office of the Secretary to the Governor General.

### **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 finance team. This team is composed 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 CFI awards; and,

- **The financial monitoring group** ensures that funds forwarded to institutions are spent appropriately and that institutions have appropriate processes and controls in place for the management of CFI funds.

Under these two groups, and in collaboration with staff from other CFI units, the team carried out the following responsibilities and activities:

### **The CFI investment portfolio**

Following standard practice, the CFI's investment strategy and investment policy was reviewed by senior management and the Board of Directors Investment Committee in the fall of 2017. No changes were recommended from the previous year. The results of this review were presented to, and approved by, the Board of Directors at their November 2017 meeting.

### **Institutional monitoring visits**

Over the course of 2017–18 fiscal year, the finance team, along with colleagues from the Programs, External Relations and Communications, and Performance Evaluation units, performed six monitoring visits. The purpose of these comprehensive reviews is to ensure that institutions receiving funding have proper practices and processes in place to manage CFI awards. They also offer an excellent opportunity to learn about and share good practices in financial management. The monitoring visits included institutions of various sizes and were chosen using a risk-based approach.

### **Contribution audits**

The finance team coordinated and conducted nine detailed contribution audits of CFI-funded projects over the course of 2017–18. These audits included a mix of both low- and high-risk projects, including those where the CFI investment is \$10 million or more. These audits did not identify any significant errors or required actions.

### **Financial reports**

In addition to its other activities, the finance team reviewed more than 800 financial reports in 2017–18. These included both interim and final financial reports, and annual reports on expenditures claimed under the Infrastructure Operating Fund. In a few instances, adjustments to the CFI instalment schedule were required, mainly due to unavoidable delays in equipment acquisition. With these adjustments, all were deemed in good order.

### **Good practices**

A “Sharing good practices” section was introduced on the CFI website in autumn 2016. Practices span the full lifecycle of a CFI award and include, for example, strategic planning, proposal development, project implementation, sustainability, risk management, tracking and communication of impacts and

outcomes, and governance and management of large initiatives. In 2017–18, we continued to build on this initiative by posting four new good practices. They are:

- Access to key project information by relevant stakeholders;
- Managing the John R. Evans Leaders Fund allocation;
- Risk-based management approach; and,
- Important considerations for items involving in-kind contributions.

### **Assessing the impacts of CFI funding**

The CFI's performance analytics and evaluation team completed several analyses related to organizational objectives and expected results, including the role the CFI plays in:

- Supporting skills development and an enriched training environment for students and postdoctoral fellows in Canada; and,
- Supporting innovation through an analysis of patenting activity associated with CFI-funded projects.

This year, we also launched an explanatory video describing how and why we track outcome data from our funded projects. The video was launched on the CFI website in conjunction with the release of the annual Report on Results.

Finally, we undertook our second bi-annual client and stakeholder satisfaction survey. Detailed results were distributed to senior management and the Board of Directors, and summary results were posted on the CFI website.

### **Creating a strong voice and telling our stories to Canadians**

We completed our 20th anniversary celebrations at the beginning of the fiscal year, thanking our contributors and funded institutions for their consistent support. We then turned our attention to communications activities that focused on raising awareness about the value of the CFI and reaching out to new audiences. In particular, in the fall, we launched a promotional campaign to highlight the training and skills students and postdoctoral fellows gain from working with top researchers in CFI-funded facilities. Highlighting stories from across the country, the campaign included multimedia storytelling on [Innovation.ca](http://Innovation.ca); promotion in select publications, such as *The Globe and Mail*, *University Affairs* and *The Hill Times*; and a #IAmInnovation/#JeSuisInnovation Twitter contest for students. The contest challenged students to show how CFI-funded infrastructure helps their research. It received wide support from institutions, the Minister of Science and a number of CFI-supported researchers, and helped increase our student followers on Twitter. On [Innovation.ca](http://Innovation.ca), we presented a compendium of information about the benefits students reap using CFI-funded infrastructure, including results from the focus groups conducted by our evaluation team and data from the CFI's Report on Results. In addition, we hosted the students

featured in our campaign, along with their research advisors, to an event where they had the opportunity to discuss their work with Parliamentarians and decision makers.

The CFI supported Government of Canada efforts in celebrating Canadian science, research and innovation as part of the country's sesquicentennial in 2017 by participating in the Innovation150 initiative. We collaborated with the Perimeter Institute by contributing content to the [innovation150.ca](http://innovation150.ca) website as well as providing the online domain for the initiative.

In the spring of 2017, we contributed to the Journées internationales de la culture scientifique, Science & You conference in Montréal, which provided an opportunity to showcase best Canadian practices related to the public awareness of science. More than 400 people participated, representing about 100 organizations from 15 countries. As part of the conference, we worked with our colleagues in the federal granting agencies to hold the annual "summit" of research communicators from our funded institutions. Sixty-two communicators participated in the summit activities in addition to the conference sessions.

For the second year running, we worked with the Governor General of Canada's office to promote the next winners of the Governor General's Innovation Awards and to communicate the goal of these awards.

In October 2017, we unveiled a refreshed Research Facilities Navigator with more intuitive navigation and a better mobile experience, making it more user-friendly, faster and easier to search. The directory includes over 670 research facilities who have self-identified as having equipment and expertise in 28 sectors, including in the areas of agriculture and food, advanced manufacturing, energy and renewables, and healthcare and life sciences. These were identified by Canada's Advisory Council on Economic Growth as Canada's high potential sectors (*Unleashing the Growth Potential of Key Sectors*, February 2017). The Navigator now contains a number of features that were designed with industry in mind, including:

- Searchable by keyword, research services, expertise and equipment;
- Other searchable facets include location, research institution and area of application; and,
- A "click to connect" online contact form allows users to connect directly with the research facility at any time and from anywhere.

Our annual public meeting featured CERN's Director-General, the renowned physicist, Dr. Fabiola Gianotti. As the leader of one of the world's largest and most complex research infrastructures, Dr. Gianotti spoke about the role of discovery research in innovation, and the critical role the next generation of researchers play in helping unravel the mysteries of the universe.

Finally, we supported the arrival of our new President and CEO, Dr. Roseann O'Reilly Runte. She undertook a cross-country tour of CFI-funded labs and facilities, listening to the community and

witnessing first-hand the impact CFI funding has on Canadian campuses, and on the researchers and students who use it. She met with stakeholders in institutions, and provincial and federal governments, and penned a number of opinion pieces to help ensure the CFI continues to have a role as a trusted voice on national issues of research and research infrastructure.

She joined the Minister of Science at Laurentian University in August to announce \$52 million in funding for the John R. Evans Leaders Fund, and again at the University of Manitoba in October to announce \$554 million in Innovation Fund support. There were six additional roll-out announcements by cabinet ministers and CFI representatives across the country to highlight the Innovation Fund investments. Since the CFI surpassed the 10,000 projects funded milestone with this announcement, we also released a summary highlighting how and where our funding has contributed to the overall success of the Canadian research enterprise.

## Successes and remaining challenges from 2017–18

Throughout 2017–18, the CFI successfully achieved its core mission of supporting the capability of Canadian researchers to conduct cutting-edge research across all disciplines and areas of inquiry; ensuring full accountability for the public funds distributed by the CFI; and, effectively assessing and communicating the impact and value of the research and technology development enabled by CFI-funded research infrastructure.

The successful completion of the 2017 Innovation Fund competition marked the tenth major investment by the CFI in research infrastructure at Canada's research institutions. The John R. Evans Leaders Fund awards continue to support the ability of institutions to attract and retain top research talent. The CFI Cyberinfrastructure Initiative is helping transform the way that researchers across the country collect, analyze and manage vast amounts of research data. The Major Science Initiatives Fund continues to ensure the ongoing sustainability of Canada's unique large-scale research facilities. Colleges are supported through the College-Industry Innovation Fund in their efforts to develop research partnerships with industry. Finally, the CFI continues to contribute to the Office of the Governor General of Canada's effort to build a culture of innovation by assisting with their annual Innovation Awards.

In order to continuously improve the way we deliver our funding to institutions, in 2017–18 we undertook a number of administrative improvements including: completely revising and updating our *Policy and program guide*, our key operational document for university and college research administrators; examining the interactions between our communications and evaluation teams to increase their effectiveness; and, auditing the design of the Cyberinfrastructure Initiative Challenge 1 to make sure it was meeting program objectives.

A number of significant challenges remain, however, including some that are beyond the CFI's control and others that carry over from previous years:

- Securing ongoing and stable funding for research infrastructure (which remains one of the most significant challenges facing the research community that the CFI supports);
- Designing additional ways to support the full range of Canadian institutions, large and small, in their communities and regions;
- Supporting the development of multi-institutional, multidisciplinary research platforms and facilities that have a structuring effect on the Canadian research enterprise;
- Enabling research leadership and seizing emerging opportunities at both the domestic and international level;
- Supporting international research collaborations and access to international research facilities; and,
- Enhancing interagency coordination and collaboration.



## Planned activities and implementation schedule for 2018–19

### **Innovation Fund**

Funds have not yet been allocated by the Government of Canada for the next Innovation Fund competition.

### **John R. Evans Leaders Fund**

The CFI informed institutions of their 2017–20 allocation from the John R. Evans Leaders Fund in June 2016 to facilitate their long-term planning for how it's used. We are closely monitoring the use of the institutional allocations to ensure that they are fully deployed within the three-year period. After the first year, 32 percent of available allocations have already been committed. The institutional allocation must be fully committed (i.e. approved CFI funding decisions) by March 31, 2020. Consequently, October 2019 will be the last deadline for which proposals can be submitted to fully access the 2017–20 allocation. At this point in time, we estimate that in 2018–19, institutions will commit up to \$75 million under the John R. Evans Leaders Fund.

### **Major Science Initiatives Fund**

As part of the Major Science Initiatives Fund, the CFI is responsible for overseeing the governance and management practices of the 17 funded facilities. To meet these responsibilities, the CFI has adopted an approach that balances general principles of scientific excellence, responsible stewardship and accountability. These principles are applied through an oversight framework that is designed to accommodate the size and complexity of each national research facility. In 2018–19, the CFI will continue to work closely with the facilities as they optimize their operations and management and governance practices in order to fully exploit their scientific capabilities.

Throughout 2018–19, the CFI will:

- Deploy an improved operations and maintenance financial module in the CFI Awards Management System, for this fund;
- Develop the guidelines and forms for the resubmissions of proposals and the mid-term review that will take place in 2019;
- Work closely with those facilities that may require additional support to overcome challenges;
- Provide ongoing monitoring and oversight of the national facilities through the review of conditions imposed on the initial awards and the review of the annual performance report; and,
- Organize the fifth annual Major Science Initiative workshop and potentially webinars to share experiences and best practices in the operations and governance of major science facilities.

## **Cyberinfrastructure Initiative**

The CFI aims to continue its support of research communities in their efforts to devise optimal ways to organize and use research data resources and put in place the necessary computational and data storage capabilities.

As a relatively new program in a rapidly changing field of research infrastructure the success of the Cyberinfrastructure Initiative depends on designing competitions that meet the evolving needs of researchers as they continue to use larger and more complex data and more powerful computational equipment.

Accordingly, in early 2018, the CFI will work with the Minister of Science, the research community, and institutions to determine how to best set the framework for the next competitions under this initiative.

## **College-Industry Innovation Fund**

Proposals for the next College-Industry Innovation Fund Stream 1 competition are expected in May 2018. The Board of Directors will make final funding decisions on this stream in November 2018. We will also participate in the sixteenth College and Community Innovation Program – Build Innovation Enhancement Grants competition managed by the Natural Sciences and Engineering Research Council of Canada (NSERC). The deadline to submit Letters of Intent to NSERC is May 25, 2018 and the CFI Board funding decisions will be made in March 2019.

## **Governor General's Innovation Awards**

In 2018–19, the CFI intends to undertake the review and adjudication process for the fourth round of the Governor General's Innovation Awards. Our continuing participation, however, is at the discretion of Her Excellency the Right Honourable Julie Payette, the new Governor General of Canada. As of the submission date of this plan, we are not aware of any changes to the Innovation Awards program.

## **Communicating the value of CFI funding for Canada**

After investing for more than two decades in the tools researchers need to think big and innovate, the CFI is now focusing our communications on how we support a new generation of researchers — students, postdoctoral fellows and early career researchers — and how we are remaining essential to an evolving research community.

In 2018–19, the CFI will continue to engage with this new generation of researchers. We will continue to tell their stories of how working with CFI-funded equipment and in CFI-funded spaces allows students and young researchers to develop the kind of skills and expertise they can turn into a competitive advantage when building their careers.

The release of Canada's Fundamental Science Review in 2017 was a turning point for the research community in Canada. Our communications will continue to support government priorities that may result from its recommendations. In this effort, we will continue to integrate equity, diversity and inclusivity in all of our communications products and narratives, telling the story of how bright minds are coming together to advance Canadian research.

In 2018–19, we will also aim to optimize the impact of the CFI Research Facilities Navigator, which was refreshed in 2017 to improve the ability of private-sector companies to find research labs open to collaboration. We will be exploring potential collaborations with like-minded partners to leverage our activities and will be focusing on promoting the online resource to various potential user groups.

We will continue to seize opportunities for our new President and CEO, Dr. O'Reilly Runte, to enhance the visibility of the CFI and to maintain our voice in supporting the research community in Canada.

To achieve our goals, we will reach out in various ways to show our key audiences how CFI-funded infrastructure is:

- Helping a new generation gain the skills they need to build a rewarding career;
- Supporting Canadian researchers so they can be global leaders in their disciplines; and,
- Setting the stage for Canada to be a global destination for research and economic growth.

## **Managing the financial aspects of CFI's activities**

During 2018–19, the CFI finance team will undertake the following activities:

**The CFI investment portfolio:** Following standard practice, the CFI's investment strategy and investment policy will be reviewed by senior management and the Board of Directors Investment Committee in autumn 2018. The results of this review, and any subsequent recommendations, will be presented to the Board of Directors in autumn 2018.

**Institutional monitoring visits:** Over the course of fiscal year 2018–19, the finance team is planning to perform between six and eight monitoring visits. The purpose of these monitoring visits is to ensure that institutions receiving funding have proper practices and processes in place to manage CFI 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 2018–19. As usual, these audits will include a mix of both low- and 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 800 financial reports in 2018–19. These include both interim and final financial reports, and annual reports on expenditures claimed under the Infrastructure Operating Fund.

### **Improving CFI’s information management capabilities**

The CFI is committed to embracing an information management program that will foster an innovative and efficient work experience enhanced by accurate, timely and complete information. In 2017–18, the organization focused on two pilot projects: improving our contact management process; and, defining a comprehensive “project file” and improving retrieval of file components.

In 2017, the CFI established a data governance committee to help oversee and support the ongoing corporate-wide information management initiative. The committee has established its terms of reference and has begun to prioritize data governance activities.

In 2018–19, we plan to implement a Customer Relationship Management tool and to improve centralized access to files and information through electronic media. We will begin digitizing archived project files in order to improve their searchability and reduce our overall storage footprint. The information technology group will review our network security and introduce new technology tools and other collaboration tools as appropriate.

### **Analyzing corporate performance, outcomes and impacts**

The CFI is committed to the principle of public accountability and we place great importance on evaluating the impact of our investments in research infrastructure.

In 2018–19, we will continue to track performance data as outlined in our 2015 Performance evaluation, risk and audit framework. We will also begin preparing the groundwork for the 2020 Overall performance evaluation of the CFI.

In keeping with established practices, we will prepare our annual performance report to provide CFI management with evidence to explore areas for improvement and efficiency.

Under the CFI corporate information management strategy, we will review data of corporate importance to identify opportunities to enhance data-capture processes that result in improved data availability and integrity. Much of the data improvement work will be done in connection with similar efforts of other research funders in Canada. This helps to both ensure uniformity of data gathering across agencies and reduces the complexity of data reporting and gathering activities.

## Appendix 1: Financial charts

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

First Funding Agreement (\$4,390M)*						
	Cumulative March 31, 2017 (\$M)	2017-18 (\$M)	2018-19 (\$M)	2019-20 (\$M)	2020 and later (\$M)	Total (\$M)
Fund	Commitments** (Actual)	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	60	9				69
Digging into Data / Discovery Frontiers	1					1
Exceptional Opportunities and other	22	9	12			43
Infrastructure Operating	1,035	3		2		1,040
Innovation (1998-2005)	1,759					1,759
Innovation Fund 2015	53					53
Innovation Fund 2017	0	3				3
International	202					202
John R. Evans Leaders (and Leaders Opportunity/New Opportunity)	879			8		887
Leading Edge/New Initiatives	834					834
Major Science Initiatives 2014 Special Competition	25					25
National Platforms	84					84
Research Development	35					35
Research Hospital	490					490
Thirty Meter Telescope	25					25
<b>Total</b>	<b>5,729</b>	<b>24</b>	<b>12</b>	<b>10</b>	<b>0</b>	<b>5,775</b>
2010 Funding Agreement (\$600M)*						
College-Industry Innovation	25					25
Infrastructure Operating	97					97
John R. Evans Leaders	140					140
Leading Edge/New Initiatives	157					157
Major Science Initiatives	184					184
<b>Total</b>	<b>603</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>603</b>

2014 Contribution Agreement (\$499.85M)*						
College-Industry Innovation	16		12	11		39
Infrastructure Operating	109		3	3		115
Innovation Fund 2015	206					206
John R. Evans Leaders	140					140
<b>Total</b>	<b>471</b>	<b>0</b>	<b>15</b>	<b>14</b>	<b>0</b>	<b>500</b>
2015 Contribution Agreement (\$1,330M)*						
College-Industry Innovation			5	15	15	35
Cyberinfrastructure initiative			60	9		69
Infrastructure Operating		145	27	26	4	202
Innovation Fund 2017		425				425
John R. Evans Leaders Fund		60	75	64		199
Major Science Initiatives (MSI)	328			72		400
<b>Total</b>	<b>328</b>	<b>630</b>	<b>167</b>	<b>186</b>	<b>19</b>	<b>1,330</b>

\* The first Funding Agreement and the 2010 Funding Agreement have \$1.385 billion and \$3 million of generated interest income respectively directed to project funding. 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, 2017.

**Table 2: Planned expenditures (disbursements) detailed by fund**

First Funding Agreement (\$4,390M)*						
	Cumulative March 31, 2017 (\$M)	2017-18 (\$M)	2018-19 (\$M)	2019-20 (\$M)	2020 and later (\$M)	Total (\$M)
Fund	Expenditures (Actual)	Expenditures (Projected)	Expenditures (Projected)	Expenditures (Projected)	Expenditures (Projected)	
Automotive Partnerships Canada	9					9
Canada Research Chairs	194					194
Career Awards	6					6
College Research Development	16					16
Cyberinfrastructure initiative	22	21	18	4	4	69
Digging into Data / Discovery Frontiers	1					1
Exceptional Opportunities and other	21		10	12		43
Infrastructure Operating	908	28	24	22	58	1,040
Innovation (1998-2005)	1,758	1				1,759
Innovation Fund 2015	17	18	7	4	7	53
Innovation Fund 2017	0		1		2	3

International	202					202
John R. Evans Leaders (and Leaders Opportunity/New Opportunity)	830	39	5	10	3	887
Leading Edge/New Initiatives	821	5	5	3		834
Major Science Initiatives 2014 Special Competition	22	3				25
National Platforms	84					84
Research Development	35					35
Research Hospital	487	3				490
Thirty Meter Telescope	25					25
<b>Total</b>	<b>5,458</b>	<b>118</b>	<b>70</b>	<b>55</b>	<b>74</b>	<b>5,775</b>
<b>2010 Funding Agreement (\$600M)</b>						
College-Industry Innovation	24	1				25
Infrastructure Operating	35	31	13	18		97
John R. Evans Leaders Fund	136	3	1			140
Leading Edge/New Initiatives	138	9	7	3		157
Major Science Initiatives (MSI)	177	7				184
<b>Total</b>	<b>510</b>	<b>51</b>	<b>21</b>	<b>21</b>	<b>0</b>	<b>603</b>
<b>2014 Contribution Agreement (\$499.85M)</b>						
College-Industry Innovation	6	4	16	9	4	39
Infrastructure Operating		15	19	22	59	115
Innovation Fund 2015	116	57	13	11	9	206
John R. Evans Leaders Fund	117	15	5	2	1	140
<b>Total</b>	<b>239</b>	<b>91</b>	<b>53</b>	<b>44</b>	<b>73</b>	<b>500</b>
<b>2015 Contribution Agreement (\$1,330M)</b>						
College-Industry Innovation				7	28	35
Cyberinfrastructure initiative				18	51	69
Infrastructure Operating					202	202
Innovation Fund 2017		24	128	88	185	425
John R. Evans Leaders Fund		16	59	65	59	199
Major Science Initiatives		74	77	75	174	400
<b>Total</b>	<b>0</b>	<b>114</b>	<b>264</b>	<b>253</b>	<b>699</b>	<b>1,330</b>

\* In addition to disbursements to eligible recipients, a total of \$200.8 million had been disbursed as of March 31, 2017 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**

<b>Cash Flow Requirements*</b>						
	<b>Cumulative March 31, 2017 (\$M)</b>	<b>2017-18 (\$M)</b>	<b>2018-19 (\$M)</b>	<b>2019-20 (\$M)</b>	<b>2020 and later (\$M)</b>	<b>Total (\$M)</b>
<b>Disbursements</b>	<b>Actual</b>	<b>Projected</b>	<b>Projected</b>	<b>Projected</b>	<b>Projected</b>	
2010 Funding Agreement	510	51	21	21	0	603
2014 Contribution Agreement	239	91	53	44	73	500
2015 Contribution Agreement		114	264	253	699	1,330
<b>Total disbursements</b>	<b>749</b>	<b>256</b>	<b>338</b>	<b>318</b>	<b>772</b>	<b>2,433</b>
Received from the Government	751	251				1,002
Generated interest income	3					3
Future government payments necessary to meet cashflow needs **			338	318	772	1,428
<b>Difference for the period</b>	<b>5</b>	<b>-5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Cumulative Difference</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Expected Government payments as per combined funding agreements (authorities) ***			331	327	770	1,428
<b>Difference for the period</b>			<b>-7</b>	<b>9</b>	<b>-2</b>	<b>0</b>
<b>Cumulative Difference</b>			<b>-7</b>	<b>2</b>	<b>0</b>	<b>0</b>

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

\*\* Of the amount of \$338M for 2018-19, \$171.7M is needed in early April 2018 to cover expenses of April 2018 to September 2018. The balance of \$166.3M can be paid during summer 2018. Of the amount of \$318M for 2018-19, \$166.1M is needed in early April 2019 to cover expenses of April 2019 to September 2019. The balance of \$151.9M can be paid during summer 2019.

\*\*\* This reflects the combined Contribution payments as per government authorities established in the funding/contribution agreements (or as reprofiled).

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



## Appendix 2: CFI's key risks and mitigation measures

In 2014, the CFI engaged KPMG LLP to assist with the update of the key risks facing the organization. As a result of this exercise, we have identified seven primary risks and related mitigation measures. These are summarized in the table below. Information on secondary risks is available upon request. We anticipate that a full review will be undertaken late in 2017–18. We expect that the risks will remain fairly constant and continue to be addressed by current mitigation measures.

The risks identified below are ordered according to their potential impact on the CFI.

### STRATEGIC RISKS

#### 1 Risk that the CFI is unable to maintain and/or secure ongoing political support at the federal level

##### Mitigation measures:

- The CFI undertakes regular ongoing discussions with Government of Canada officials in ministerial offices and senior department managers on the requirements for research infrastructure, the leveraging of benefits, the multidisciplinary reach and impacts of CFI 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 that 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 consistently demonstrates value-for-money and how infrastructure funding has been and continues to be responsive to government priorities and research community requirements.
- The CFI disseminates success stories and evaluation assessments to demonstrate the results of CFI investments.
- The CFI seeks to capitalize on the strength of its solid reputation as a world-class funding agency.
- The CFI includes elected officials and media in celebrations and public events.

#### 2 Risk that the fiscal realities of the provinces will result in reduced and/or delayed support for CFI projects (e.g. via matching funds, S&T funding in the province)

##### Mitigation measures:

- Provincial partners are given 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 conducts ongoing monitoring of provincial research and innovation activities.
- The CFI communicates the value of the 40 percent funding provided by the CFI.
- The CFI communicates with provinces on funding parameters and competition schedules to assist them in their planning.
- While the CFI endeavours to accommodate provinces with cash flow challenges, CFI funding is provided only when partner funding has been secured.

**3 Risk that key stakeholders, including federal funders at both the administrative and political levels, do not understand the activities, outcomes and impacts associated with CFI funding**

**Mitigation measures:**

- The CFI consistently sends the message that world-class research requires state-of-the-art infrastructure.
- The CFI reports on and communicates to all stakeholders the outputs, outcomes and impacts of the research enabled by infrastructure.
- 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's communications strategy focuses on highlighting the key results and social and economic outcomes of the research enabled by CFI investments.
- 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.
- The CFI continues to explore new ways of telling the stories of the impacts of research enabled by CFI-funded infrastructure.

**4 Risk that overall funding cannot be balanced to support different stakeholder needs (e.g. between capital and operating and maintenance investments)**

**Mitigation measures:**

- The CFI conducts ongoing consultations with the research community and government to determine the balance of funding types for major science initiatives and multi-institutional facilities.
- The CFI undertakes discussions with government and other funding organizations on funding pressures and how best to optimize the overall funding system.
- Latest Innovation Fund competition provides additional operating and maintenance funding for projects with greater needs for operational support.
- The Infrastructure Operating Fund provides institutions with flexibility to address projects with varying needs.
- The CFI continues to advocate for a national strategy to best address the requirements for large-scale research infrastructures.

**5 Risk that contribution agreement requirements impair the ability of the CFI to be responsive to stakeholder needs in a timely and flexible manner (e.g. through new programs)**

**Mitigation measures:**

- The CFI regularly consults with institutions to understand their needs and explain the specifics of federal funding programs and opportunities.
- The CFI briefs parliamentarians and senior government officials on the value of a flexible model, alignment of funding mechanisms with the federal Science, Technology and Innovation Strategy and the granting agencies and on the needs of institutions.
- Communication and outreach activities underscore the need for flexibility as a means to enable the CFI to achieve the expected results specified in its contribution agreements.
- The CFI encourages the research community to work with the CFI to communicate its needs to key decision-makers.

- 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.

## HUMAN RESOURCES RISKS

### 6 Risk of turnover and/or loss of corporate memory among critical leadership positions

#### Mitigation measures:

- The horizontal structure of the CFI facilitates the effective transfer of corporate knowledge throughout the organization and in periods of leadership turnover.
- The CFI maintains a competitive compensation structure and a balanced work environment that help attract and retain top talent.
- The CFI succession plan is reviewed and updated every two years.

## INFORMATION TECHNOLOGY/INFORMATION MANAGEMENT RISKS

### 7 Risk that information is not managed and/or accessible in a manner to support and enable effective and timely decision making

#### Mitigation measures:

- The CFI's business units consistently review and update the information captured for both structured data (i.e. corporate database systems) and unstructured data (i.e. business unit specific activity) to support their operational and strategic business decisions.
- The Performance, evaluation, risk and audit framework exercise periodically reviews and updates information requirements needed to inform strategic business decisions and directions.
- Information access follows a decentralized approach. Business units have staff with advanced-level expertise using the CFI business information tools to effectively support decision making. All users are supported by the information management team. Training is available on an ongoing basis, and specialized training sessions are provided as needed.
- All information captured at the CFI occurs within a secure and protected environment using up-to-date, industry-standard technology and infrastructure and software supported by contracted experts. Regular data backup schedules and maintenance operations are in place.
- The information management initiative undertaken in 2015 will optimize the value of data within the organization, produce repeatable results, enrich analytical capabilities and provide tools for the CFI to be a trusted voice.



**Research builds communities**  
**La recherche au service des collectivités**

450-230 Queen St.  
Ottawa ON K1P 5E4  
Tel 613.947.6496  
Fax 613.943.0227

450-230 rue Queen  
Ottawa ON K1P 5E4  
Tél 613.947.6496  
Télééc 613.943.0227