2012 REPORT ON RESULTS

An analysis of investments in research infrastructure
ABOUT The Canada Foundation for Innovation

Created by the Government of Canada in 1997, the Canada Foundation for Innovation (CFI) strives to build our nation’s capacity to undertake world-class research and technology development to benefit Canadians.

The CFI’s national objectives are to enhance the capacity of institutions to:

• support economic growth and job creation, as well as health and environmental quality through innovation;
• 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.

Since its creation, the CFI has committed more than $5.9 billion in support of 7,879 projects at 138 research institutions in 66 municipalities across Canada (as of May 2013). For more information about the CFI, please visit www.innovation.ca.

THE REPORT ON RESULTS

The purpose of the Report on results is to provide a summary of the outputs and outcomes of CFI-funded infrastructure as they relate to the overall objectives of the CFI, based on information provided through annual Project Progress Reports (PPRs). The PPR is an online questionnaire which is completed by the project leader and submitted by their host institution. Institutions are required to submit a PPR for each funded project by June 30 each year, for up to five years after the award agreement is put in place. The data collected pertains to “the past year” only (CFI fiscal year April 1 to March 31). As data is self-reported, it cannot be independently verified.

For information on composition of the 2012 PPR sample, see Appendix.
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94% of project leaders reported that infrastructure was important for retaining some of Canada’s best researchers.

Importance of infrastructure in decision to stay at institution

- Very important: 66%
- Somewhat important: 28%
- Not at all important: 6%

No. of projects

Level of importance

Retaining world-class researchers
31,900 post-doctoral fellows (PDFs) and higher education students had the opportunity to expand their research skills using infrastructure. On average, 48% of them were first-time users.

96% (1,998) of project leaders reported that CFI-funded infrastructure was a key resource for trainees.
91% of project leaders credited their infrastructure with having a high or very high impact on the quality of the training environment.

Technical personnel
48% (1,007) of project leaders reported that technical personnel trained for the first time on the use and maintenance of the infrastructure, for a total of 3,994 individuals.
2,395 PDFs and graduate students using the infrastructure last year completed their training and moved into the workforce. Among them, a large proportion (71%; 1,883) stayed in Canada, while the remaining 29% were reported as working abroad.
Operations & maintenance

82% of project leaders reported that they had both adequate financial and human resources for the operation and maintenance (O & M) of the infrastructure. Use of diverse funding sources, including research contracts and user fees, contributes to the sustainability of the infrastructure.

Federal government grants and awards are most commonly used to support O & M, followed by the Infrastructure Operating Fund (IOF) from the CFI, funds from the researcher’s institution, and provincial government grants or awards.
More than half of project leaders rated their CFI-funded infrastructure as “State-of-the-art”, including 82% of those with highly specialized research equipment.

The remaining years of useful life of infrastructure reported varies according to its type.

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of years of useful life remaining (average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building(s)</td>
<td>18.8</td>
</tr>
<tr>
<td>Research space</td>
<td>13.8</td>
</tr>
<tr>
<td>Non-specialized or standard research equipment</td>
<td>7.7</td>
</tr>
<tr>
<td>Highly specialized research equipment</td>
<td>7.4</td>
</tr>
<tr>
<td>Computing hardware or software</td>
<td>3.5</td>
</tr>
</tbody>
</table>
Infrastructure use

86% of the infrastructure was being fully utilized or over subscribed, suggesting that it is appropriately located and contributing to research capacity.

Capacity for world-class research
As expected in an academic setting, conferences, symposiums and workshop presentations were the most frequently reported research outputs by project leaders, closely followed by peer-reviewed publications.

Types of research outputs reported

- Presentations: 87%
- Peer-reviewed publications: 82%
- Reports: 21%
- Books: 13%
- Internet publications: 9%
- Reference, training tools: 8%

20 research outputs per project on average
Advancing research

Infrastructure was used by a diverse community of public, private and non-profit sector users.

**FIGURE 9**

*Internal users*
84% of project leaders reported at least one researcher at their institution using the infrastructure to advance their research, for a total of 11,152 internal users.

*External users*
60% of project leaders reported users outside their institution, for a total of 24,822 external users.

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The most frequent external users in universities and hospitals were international researchers, while local researchers were most common in other sectors.
Researchers have made use of infrastructure to serve collaborative research endeavours for traditional academic activities and outputs such as funding applications and publications.

69% (1,433) of project leaders reported at least one type of external collaboration. Of those, 37% (533) of project leaders reported four different types of collaboration, suggesting CFI-funded infrastructure enables widespread collaboration.
CFI-funded infrastructure facilitated formal collaborative research agreements. Project leaders reported a total of 3,742 agreements.

A subset of collaborations are formalized through signed agreements such as contracts and memorandums of understanding (MOUs). 34% (715) of project leaders reported one or more types of formal agreements.
From research to innovation

CFI-funded infrastructure has contributed to the development of new technologies and the creation of new companies.

172 project leaders reported that intellectual property rights were granted in relation to CFI-funded infrastructure.

52 project leaders reported entering into licensing agreements based on intellectual property enabled by the CFI-funded infrastructure.
28% (577) of project leaders reported one or more jobs created due to the CFI-funded infrastructure.

The majority of these jobs (1,288) were staff hired for the use, operation and maintenance of CFI-funded infrastructure. As a result of research related to the infrastructure, 123 project leaders reported that a total of 962 new jobs were created outside the institution.
A range of benefits

45% (944) of project leaders reported at least one type of benefit, highlighting the role of CFI-funded infrastructure in enabling research that produces outcomes for Canadians.

Types of benefits reported

- New/ revised process, model or plan
- Public education, cultural enrichment
- New/ improved product or service
- New/ revised policy, regulation, bill or program

Benefits for Canadians
Benefits: Areas of impact and user groups

**Areas of impact**

Public health, education, training and economic were the most frequently reported areas of impact.

**User groups**

Industry is the primary beneficiary of CFI-enabled research knowledge and technologies.
Challenges

The most frequently mentioned challenge by project leaders was funding for O & M and research operating costs.

Although issues related to HQP and the acquisition and updating of equipment were also identified as important challenges, 28% (586) of project leaders reported that they had no significant limiting factors in conducting their research.
Composition of the 2012 PPR sample

This report is based on a sample of 2,085 operational projects from 79 universities, colleges, research hospitals and non-profit research institutions across Canada reporting on the 2011-2012 fiscal year (data extracted as of August 2012). This includes projects reporting in any year of the CFI reporting cycle, representing a range of projects from recently funded to more mature projects. A total of 116 projects were excluded as their CFI-funded infrastructure had either not yet been obtained or not yet put into service. Together, these represent 97% of the 2,265 total expected reports for the year. This report is based on quantitative data provided. Responses labelled as “other” have not been included in the analysis.

Note: In 2012, no projects were reporting in Year 1 due to a change in the CFI’s reporting rules. For details, refer to section 7.3 of the Program and Policy Guide.