CANADA FOUNDATION FOR INNOVATION

2022 Report on results

An annual summary of project outputs and outcomes

November 2022

INNOVATION

Canada Foundation for Innovation

Fondation canadienne pour l'innovation

2022 Report on results

The purpose of the report on results is to provide a summary of the outputs and outcomes achieved through research infrastructure funded by the Canada Foundation for Innovation (CFI) as they relate to the overall objectives of the CFI.

This report presents a summary of information provided through annual project progress reports (PPRs). The PPR is an online questionnaire which is completed by the researcher leading a CFI-funded project and submitted by the host institution after the research infrastructure becomes operational. Institutions are required to submit a PPR for each funded project by June 30 each year, for four or five years depending on the award value.

The information considered in this report reflects performance reported from April 1, 2021 to March 31, 2022 only. Data is self-reported by researchers and submitted by funded universities, colleges, research hospitals and non-profit research organizations, and has not been independently verified by the CFI.

Consult Appendix 1 – Composition of the 2022 project progress report sample for more information.

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About the Canada Foundation for Innovation

The Canada Foundation for Innovation (CFI) makes financial contributions to Canada's universities, colleges, research hospitals and non-profit research organizations to increase their capability to carry out high-quality research.

The CFI invests in infrastructure that researchers need to think big, innovate and push the boundaries of knowledge. It helps institutions to attract and retain the world's top talent, to train the next generation of researchers and to support world-class research that strengthens the economy and improves the quality of life for all Canadians.

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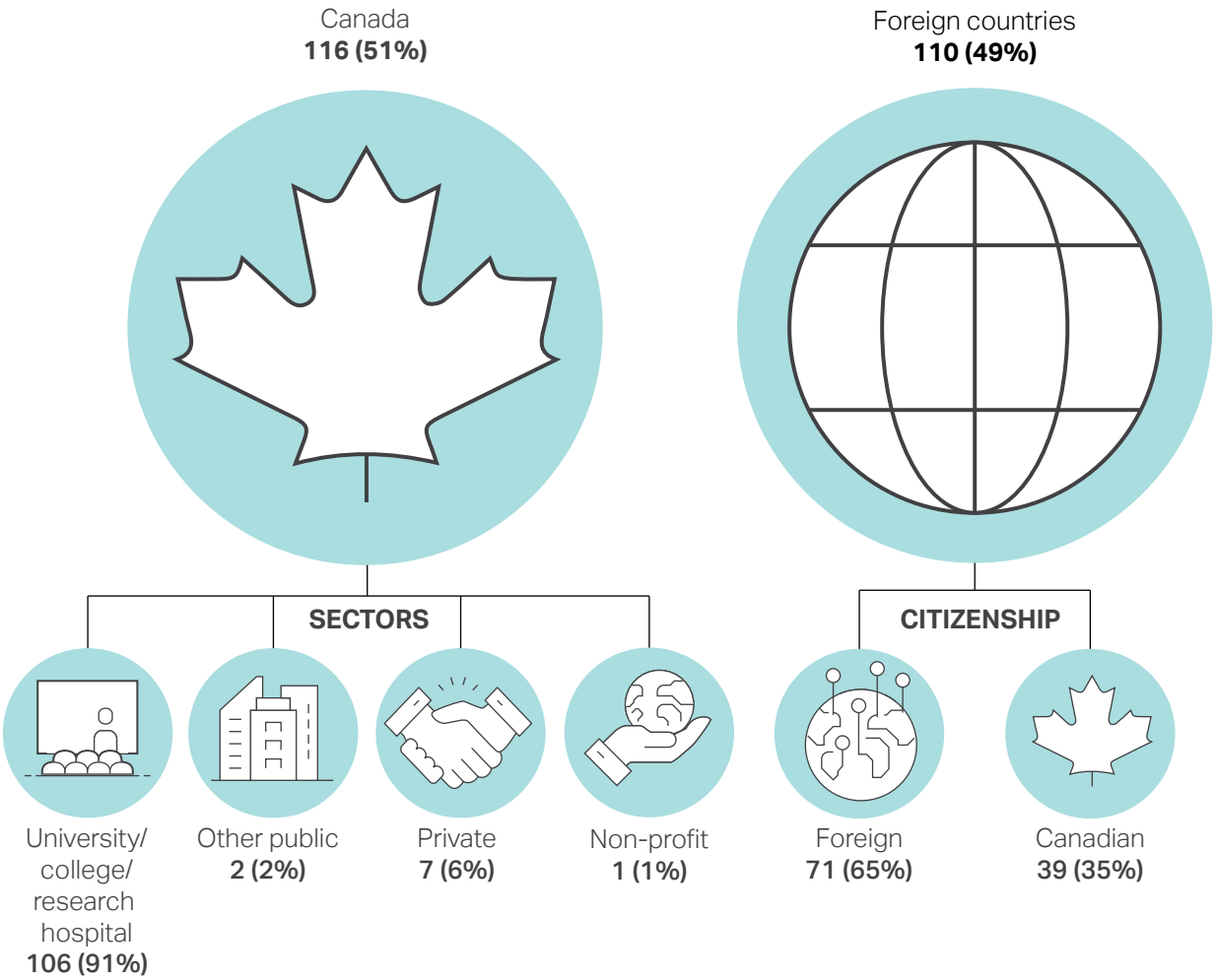
This report should be cited as:

The Canada Foundation for Innovation, 2023. 2022 Report on results: An annual summary of project outputs and outcomes. Ottawa, Ontario.

Attraction and retention of world-class researchers

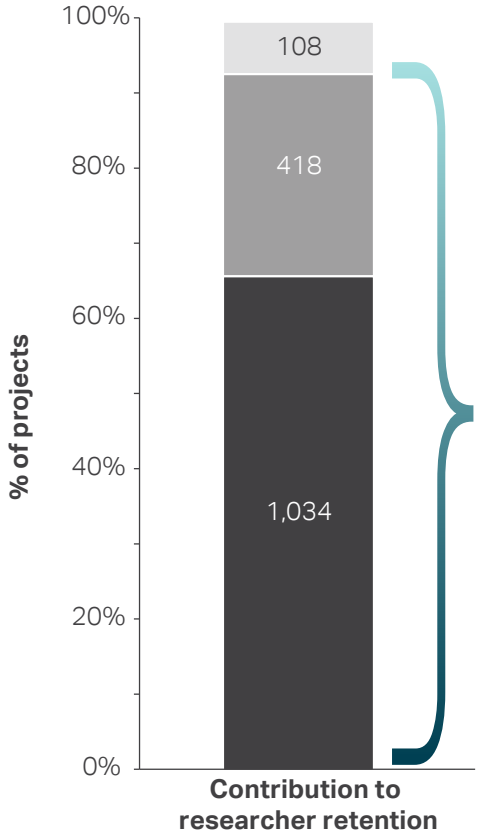
Researcher attraction

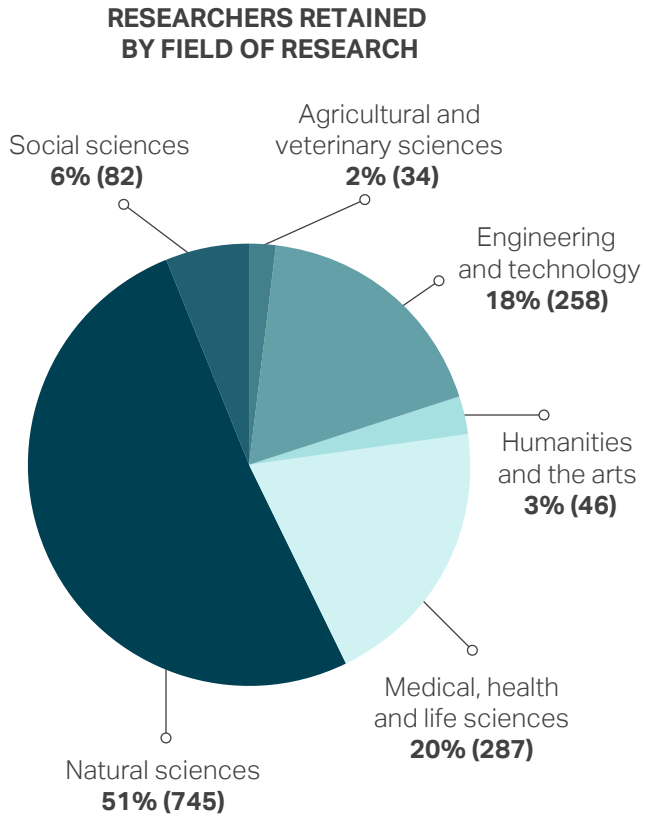
Among the 226 newly recruited researchers leading CFI-funded projects, 98% indicated that CFI-funded research infrastructure positively influenced their decision to join their institution. A little under 50% of new recruits (of Canadian or non-Canadian citizenship) were in foreign countries at the time of their hiring, suggesting that CFI-funded research infrastructure contributed to attracting international talent and internationally trained Canadian talent. Those new recruits who were already in Canada (51%) came from different sectors but were predominantly from academia.



Researcher retention

93% of researchers leading CFI-funded projects indicated that CFI-funded research infrastructure was important in their decision to remain at their institution. Funding for research infrastructure helped retain researchers from all fields of research.





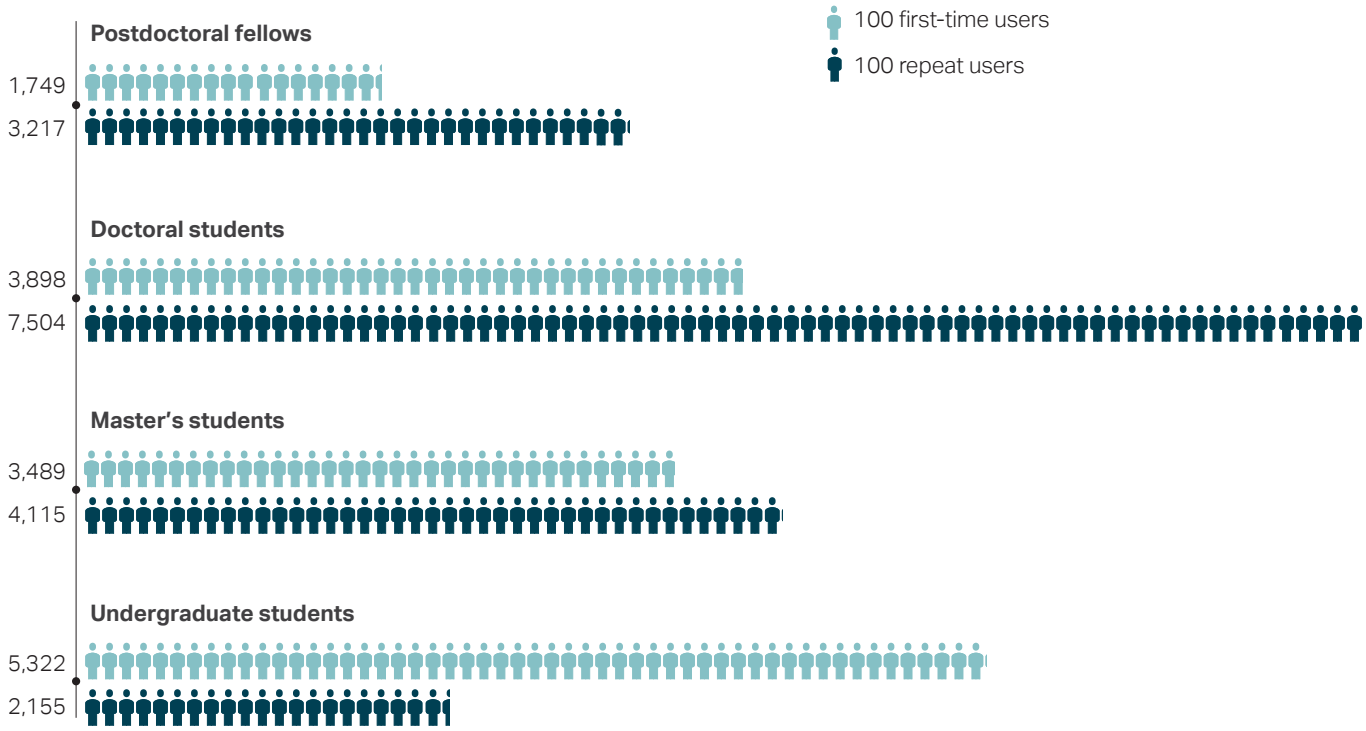
Not at all important
Somewhat important
Very important

Development of highly qualified personnel

Trainees using research infrastructure

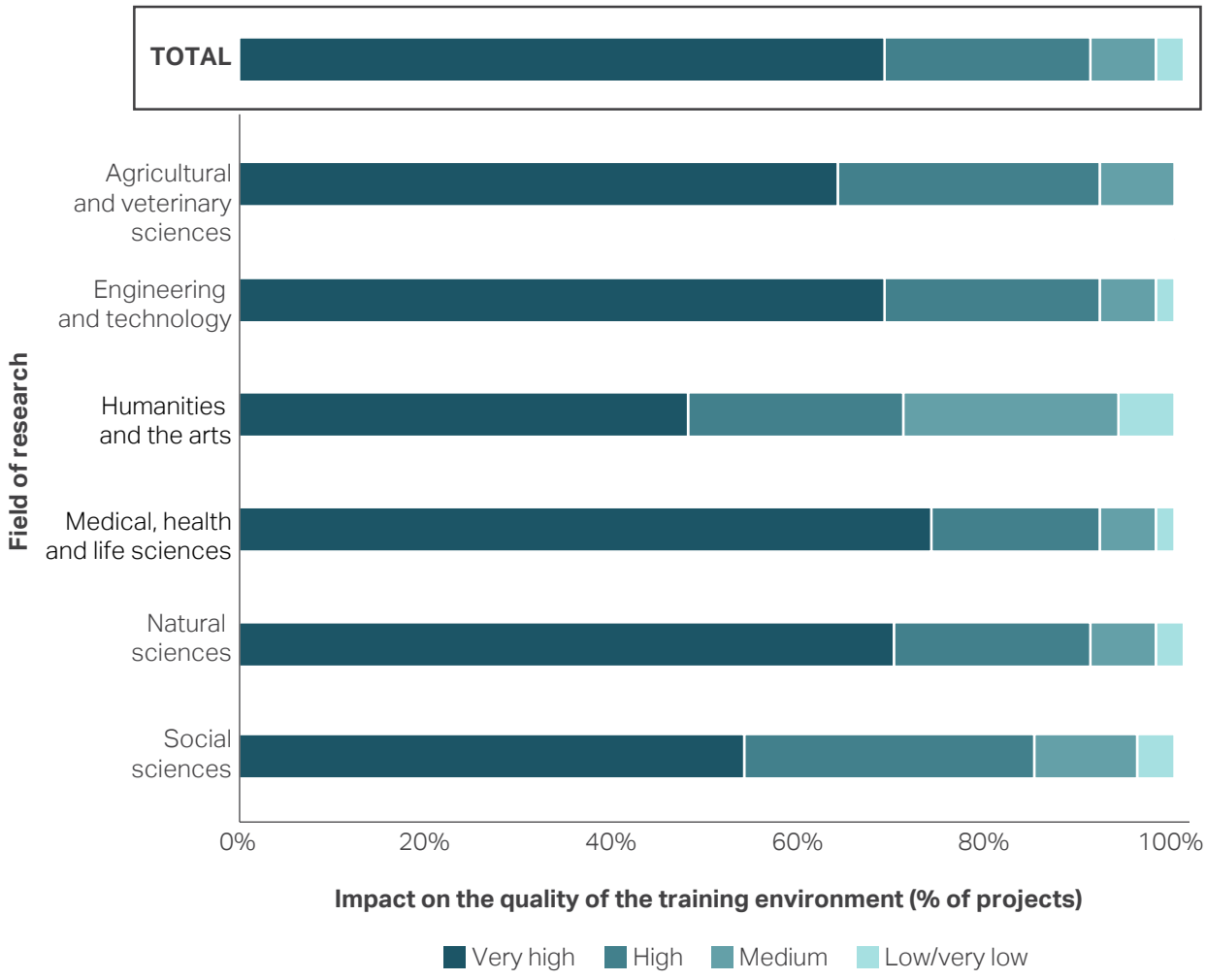
95% of researchers leading CFI-funded projects reported that CFI-funded research infrastructure was a key resource for the next generation of researchers.

31,449 postdoctoral fellows and higher education students had the opportunity to expand their research skills using CFI-funded research infrastructure. Of those, 46% used the research infrastructure for the first time in 2022.



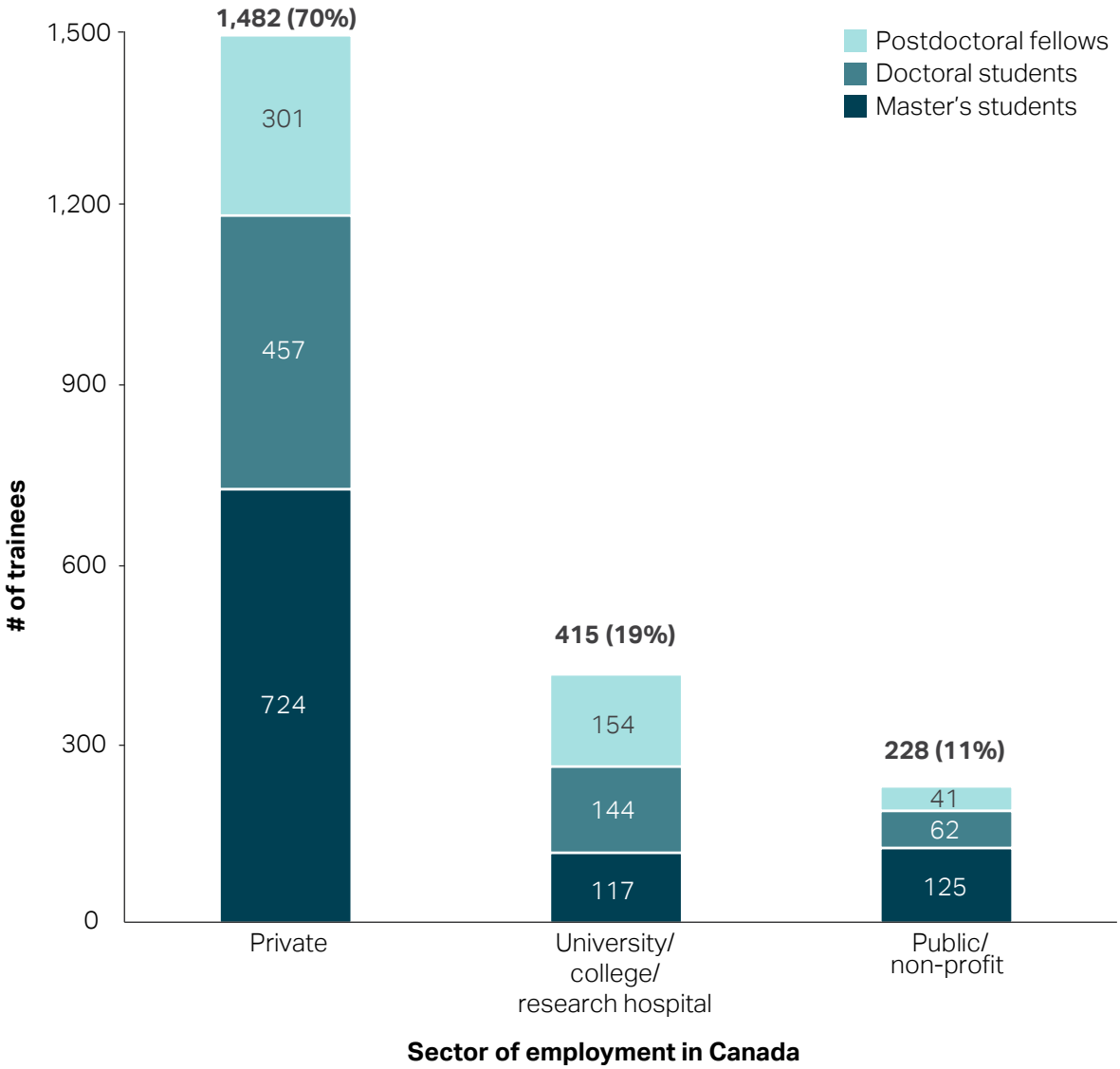
Quality of training environment

90% of researchers leading CFI-funded projects credited their CFI-funded research infrastructure with having a high or very high impact on the quality of the training environment. The data is relatively consistent across all fields of research except social sciences, and humanities and the arts, where ratings are lower.



Highly qualified personnel employment

A total of 2,683 postdoctoral fellows and graduate students using the research infrastructure completed their training and moved into the workforce. Among them, 79% (2,125) secured employment in Canada, the majority (70%) of whom joined the private sector.

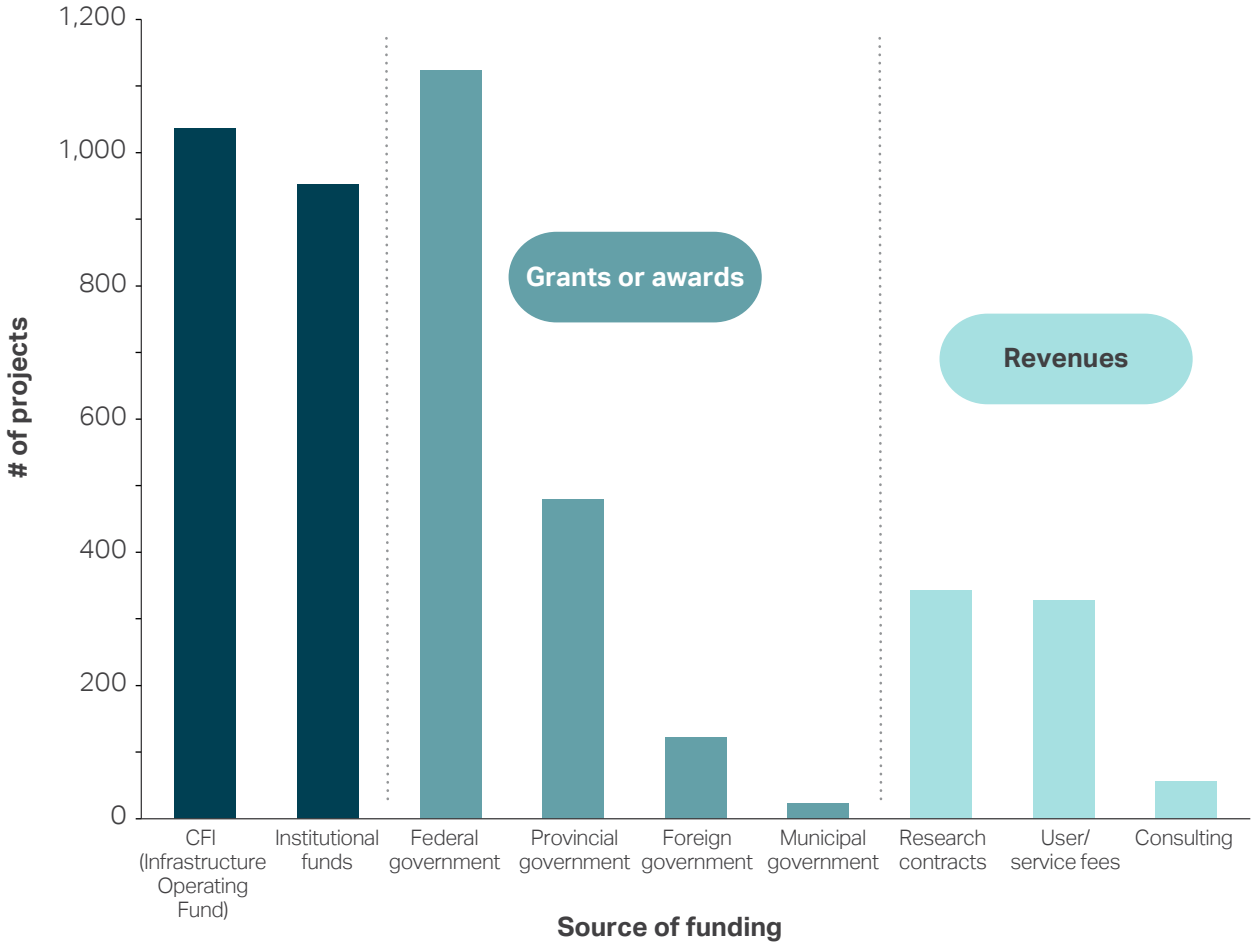


Capacity for world-class research

Operation and maintenance

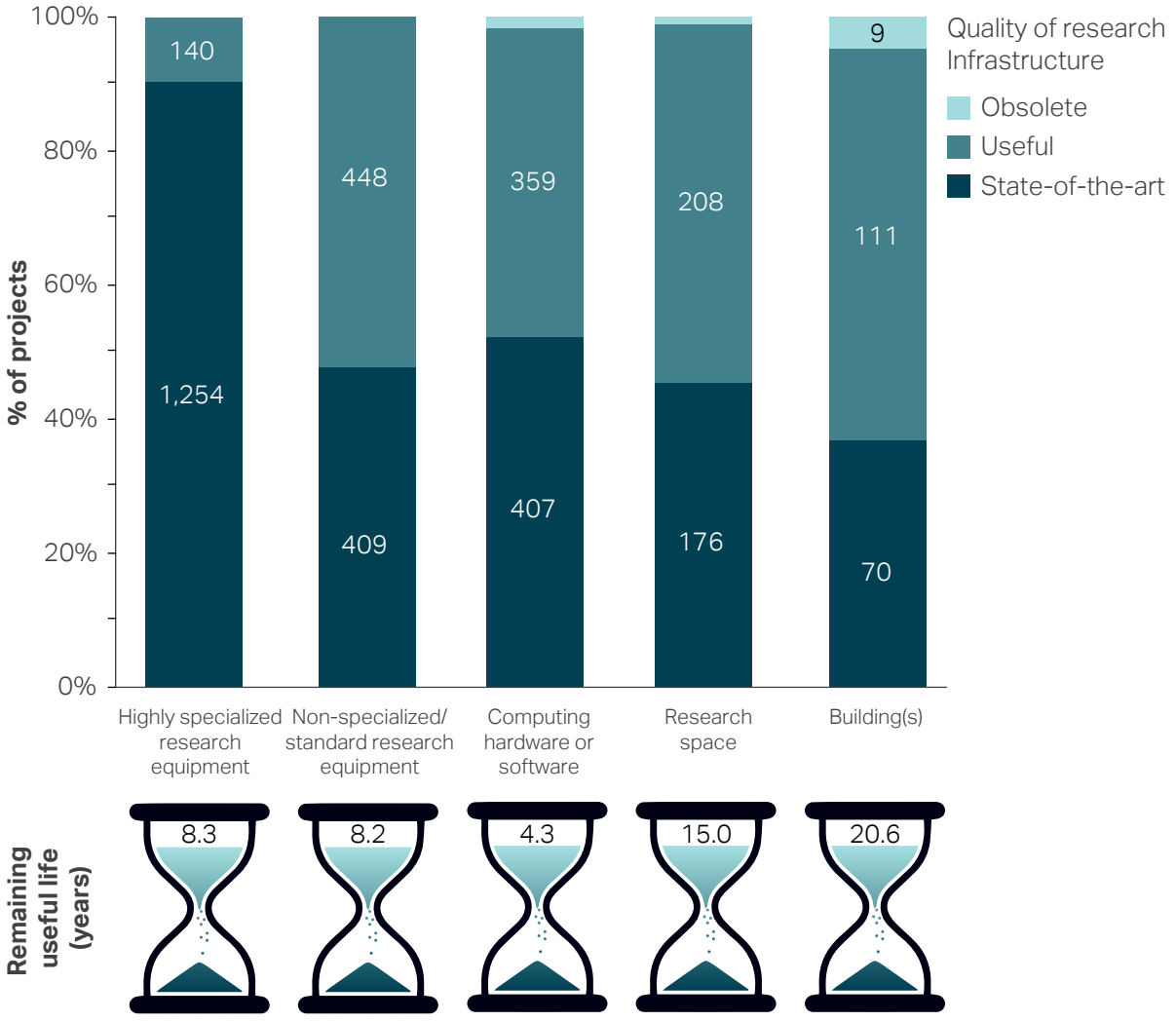
90% of researchers leading CFI-funded projects reported that they had both adequate financial and human resources for the operation and maintenance of their CFI-funded research infrastructure.

Diverse funding sources, including research contracts and user fees, contribute to the sustainability of the research infrastructure. Grants or awards from the federal government were the most common source of funding used.



Research infrastructure quality and useful life

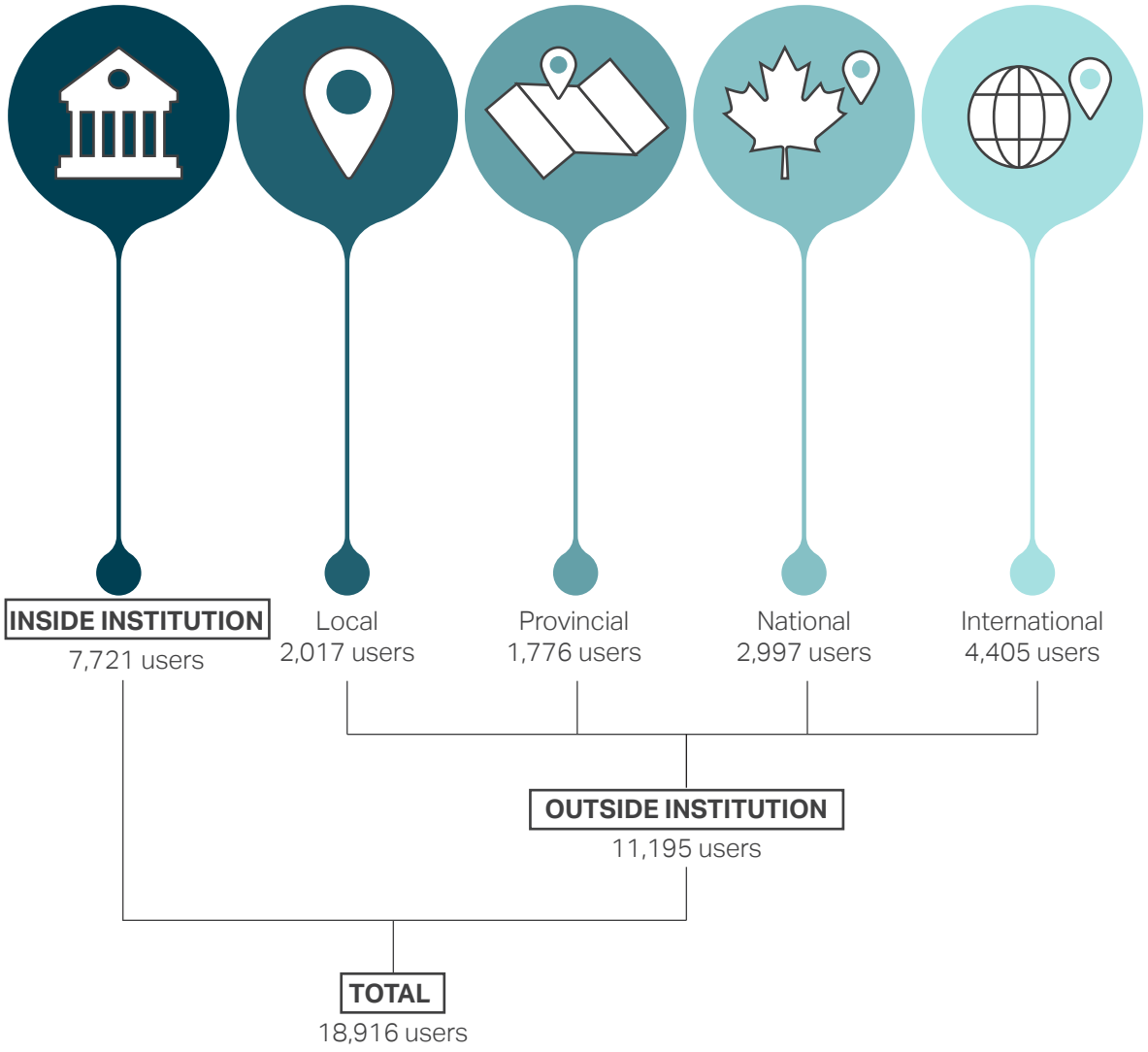
The quality of CFI-funded research infrastructure was highly rated overall, with researchers reporting that 90% of their highly specialized research equipment is state-of-the-art. Highly specialized research equipment was reported by researchers leading CFI-funded projects as having the highest level of quality (still being state-of-the-art) with a remaining useful life of just over eight years, on average.



Research infrastructure use

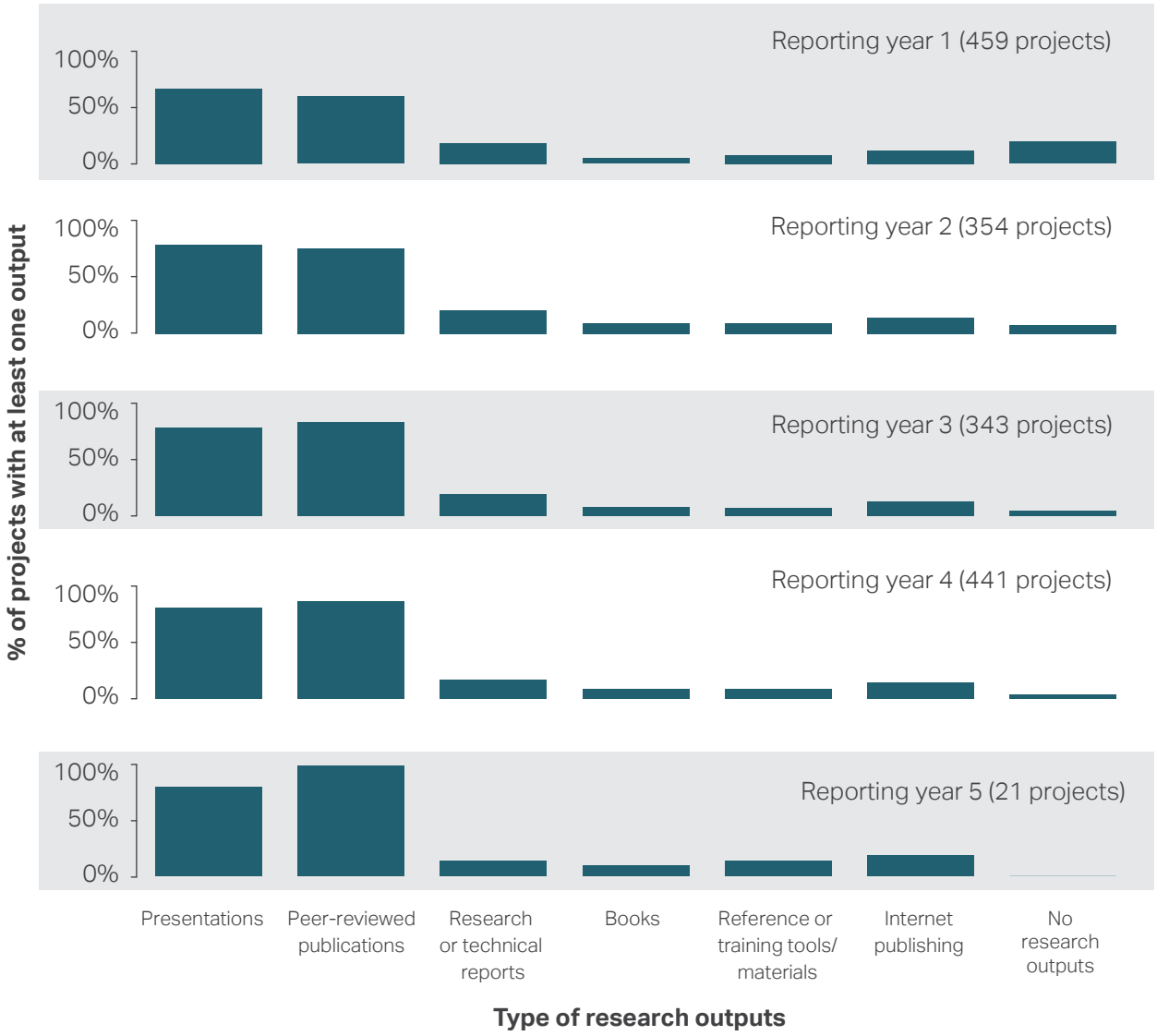
72% of researchers leading CFI-funded projects reported that their CFI-funded research infrastructure was used to maximum capacity. Overall, 18,916 researchers (excluding students, postdoctoral fellows and technical and professional personnel) advanced their research using CFI-funded research infrastructure.

The top five countries where the largest number of international research infrastructure users were from are Switzerland, the United States, France, Brazil and the United Kingdom.



Sharing of research results

Peer-reviewed publications are the most frequent type of research output reported, closely followed by conference, symposium and workshop presentations.

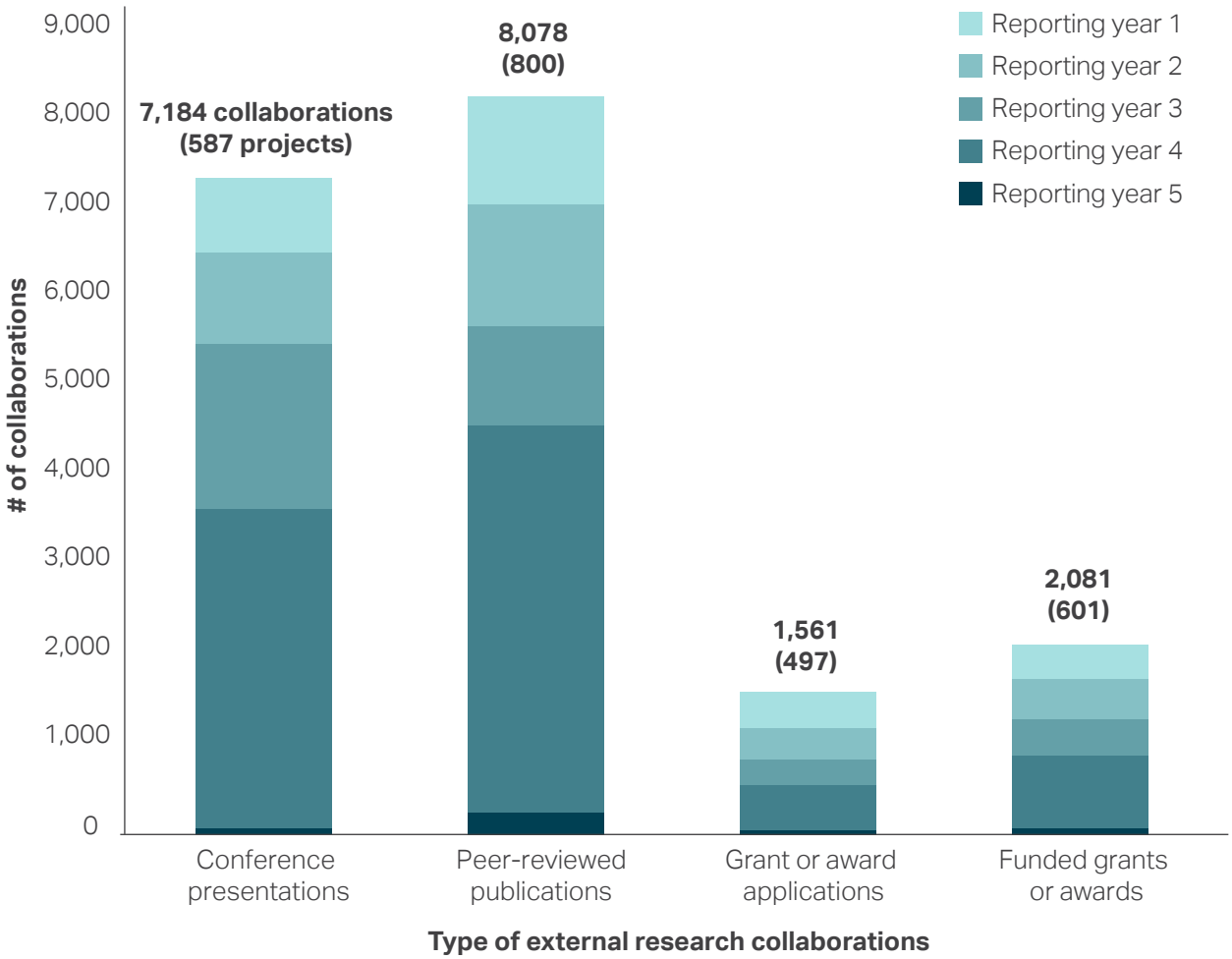


Productive networks and collaboration

Productive collaborations

Researchers have made use of CFI-funded research infrastructure to enable external research collaborations that resulted in traditional academic activities and outputs. The most common is peer-reviewed copublications, with 8,078 reported by 800 researchers leading CFI-funded projects.

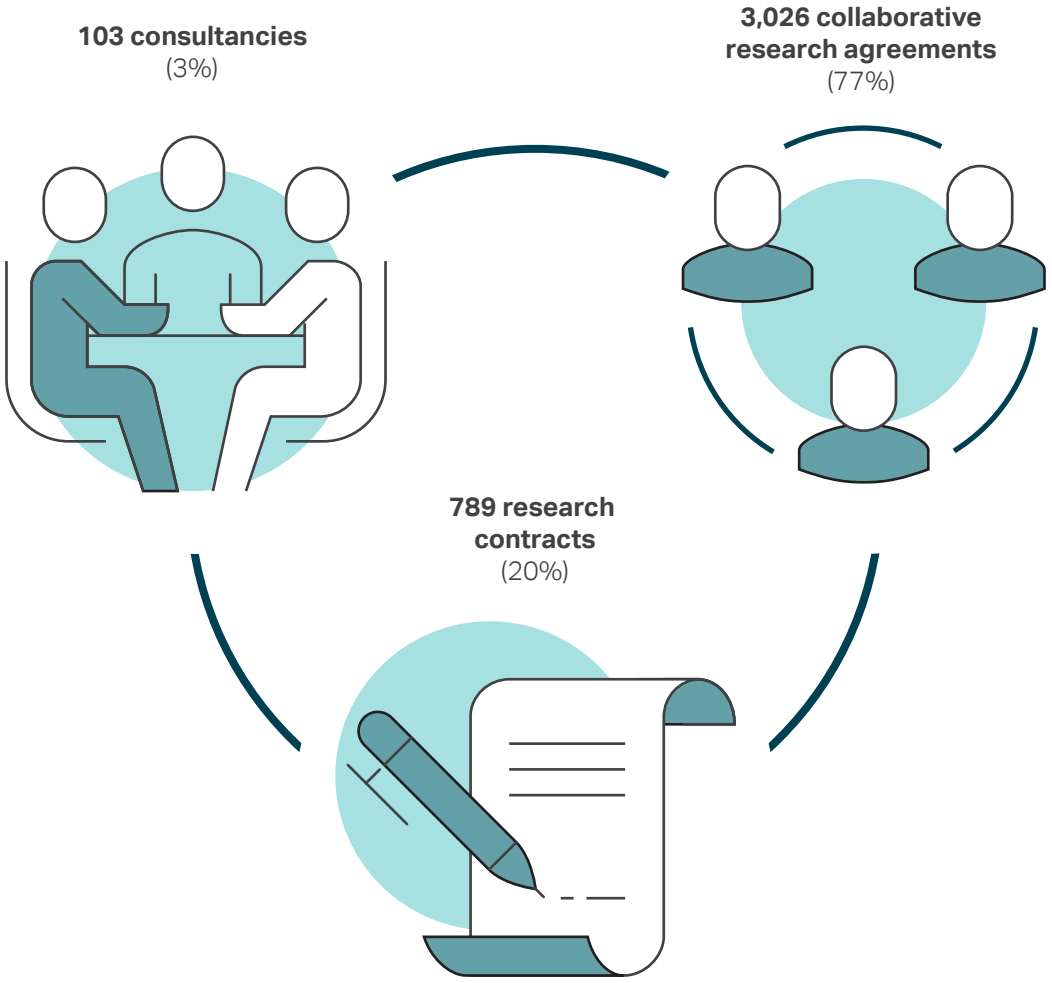
Among researchers leading CFI-funded projects that indicated external collaborations, 21% reported engaging in all four types, suggesting that CFI-funded research infrastructure enables broad and varied collaboration.



Research agreements

CFI-funded research infrastructure facilitated new formal collaborative research agreements in 31% of projects, for a total of 3,918 agreements.

The private sector was the sector most often identified for both consultancies and research contracts while the academic sector was most frequently reported for collaborative research.



Economic growth and job creation

From research to innovation

CFI-funded research infrastructure has contributed to the development of new intellectual property and the creation of new companies.

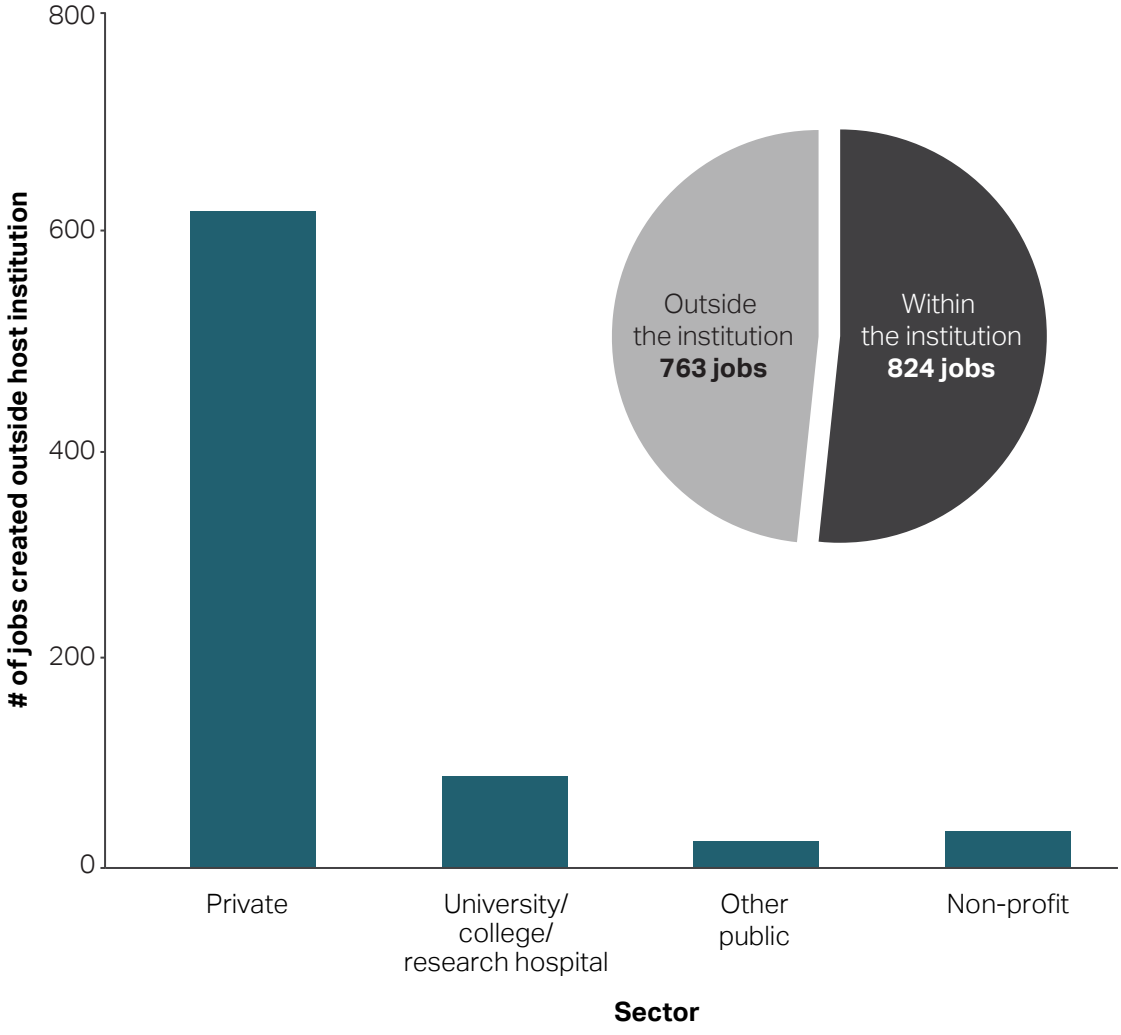
130 researchers leading CFI-funded projects reported at least one of the six types of research outcomes below.

174 provisional patents	**102** patents	**30** projects with licensing agreements
30 spin-off companies	**12** copyrights/ trademarks	**3** industrial designs

New jobs

28% of researchers leading CFI-funded projects reported one or more jobs created due to CFI-funded research infrastructure.

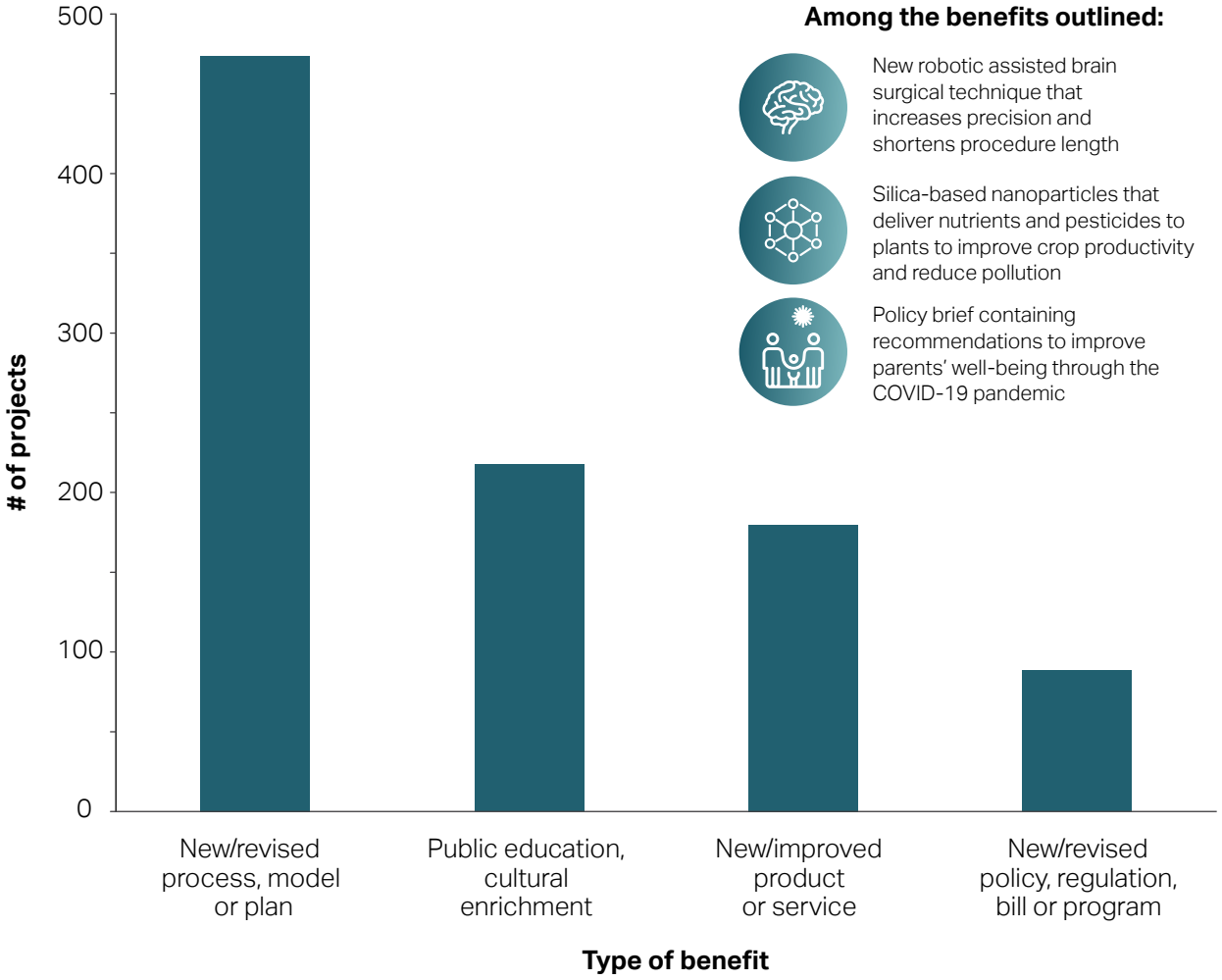
Just over half of all jobs created were within the host institutions. 81% of the 763 jobs created outside the institution were in the private sector.



Benefits to Canadians

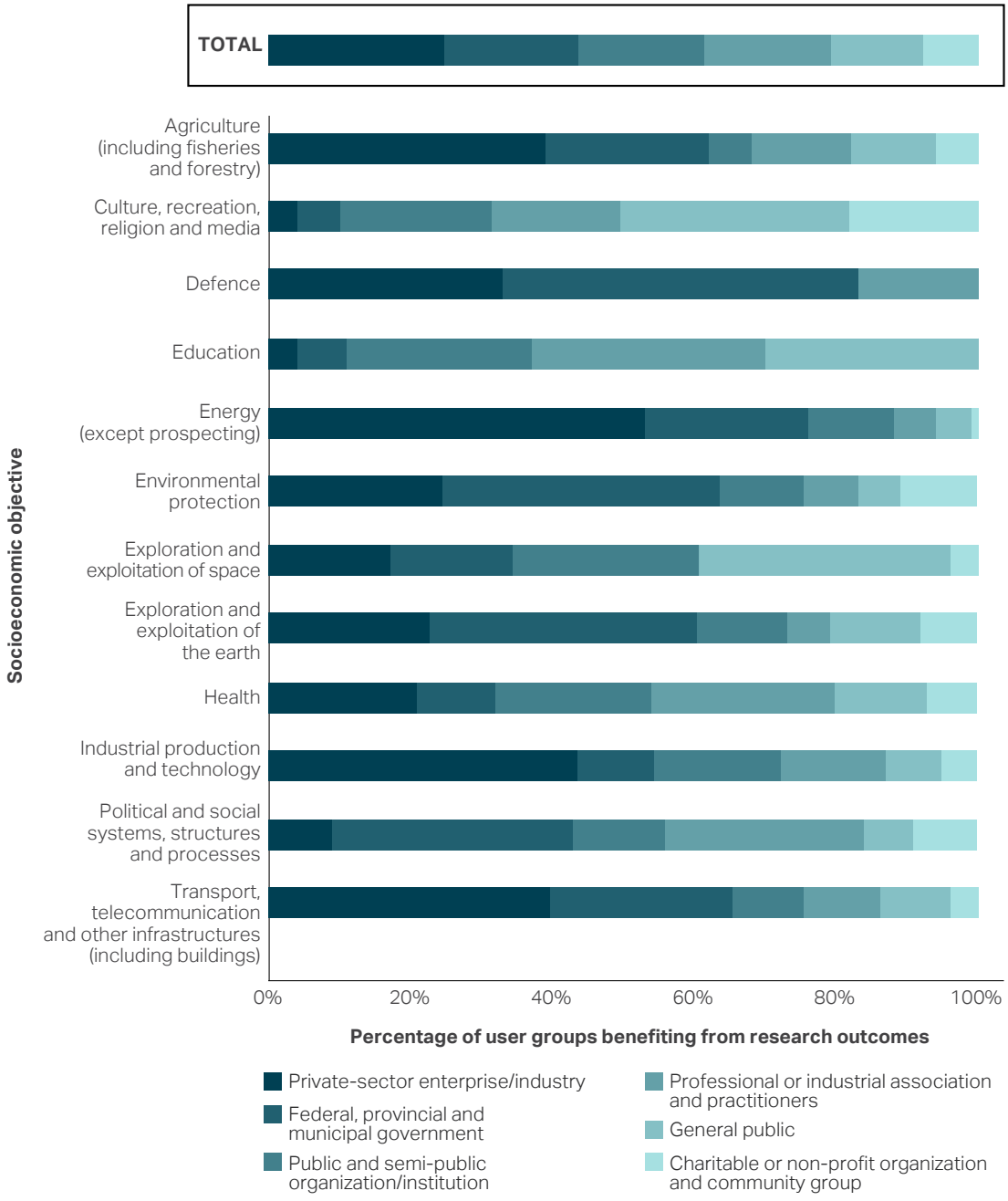
A range of benefits

Close to half (48%) of researchers leading CFI-funded projects reported at least one type of benefit, highlighting the role of CFI-funded research infrastructure in enabling research that produces outcomes for Canadians.



Users of research outcomes

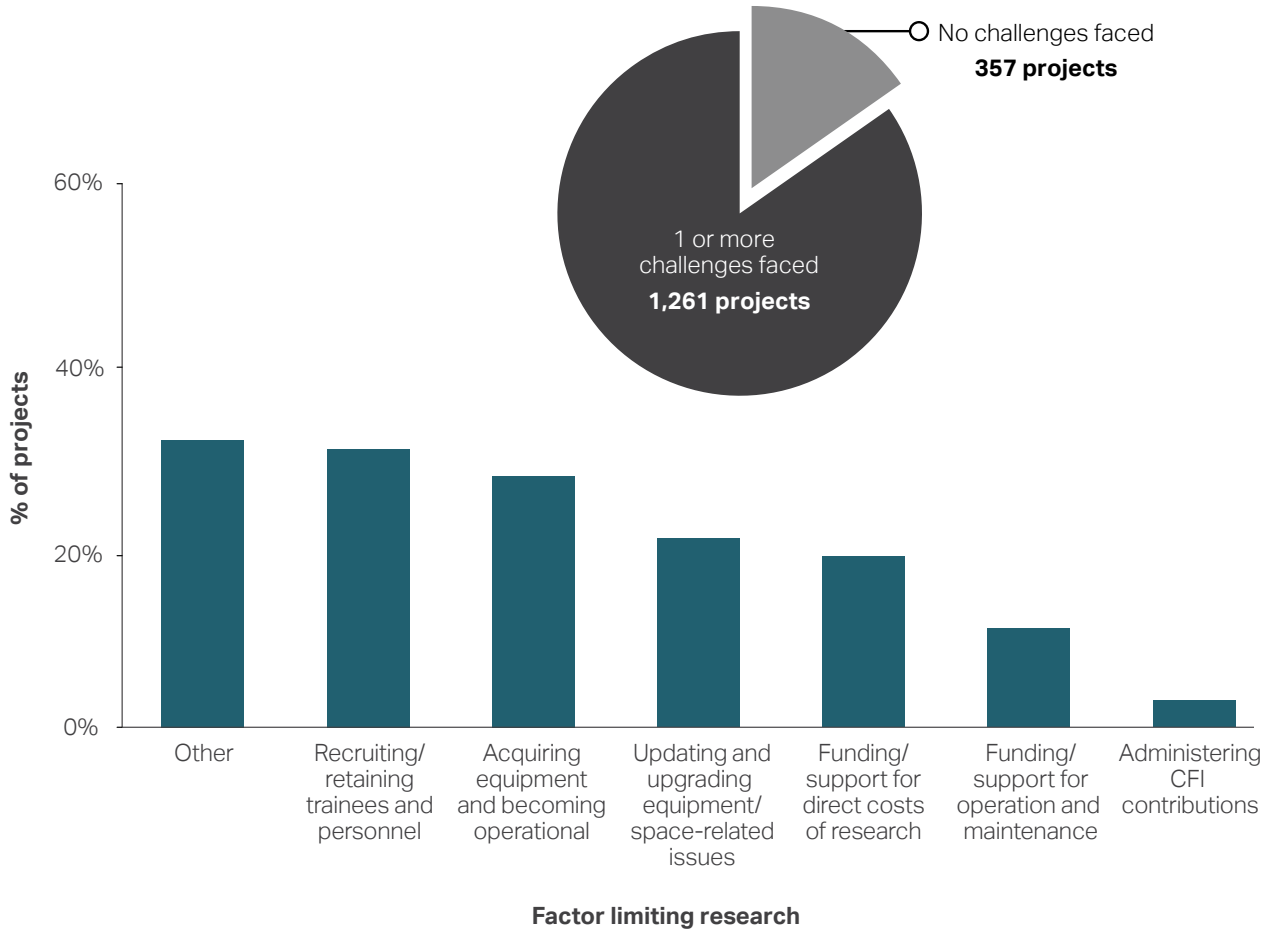
Overall, the most frequently reported user group benefiting from the research results was the private sector, followed by public and semi-public organizations and institutions. Research users varied by socioeconomic objectives of the research; for example energy projects tended to benefit the private sector most while research on environmental protection tended to benefit the federal, provincial and/or municipal governments.



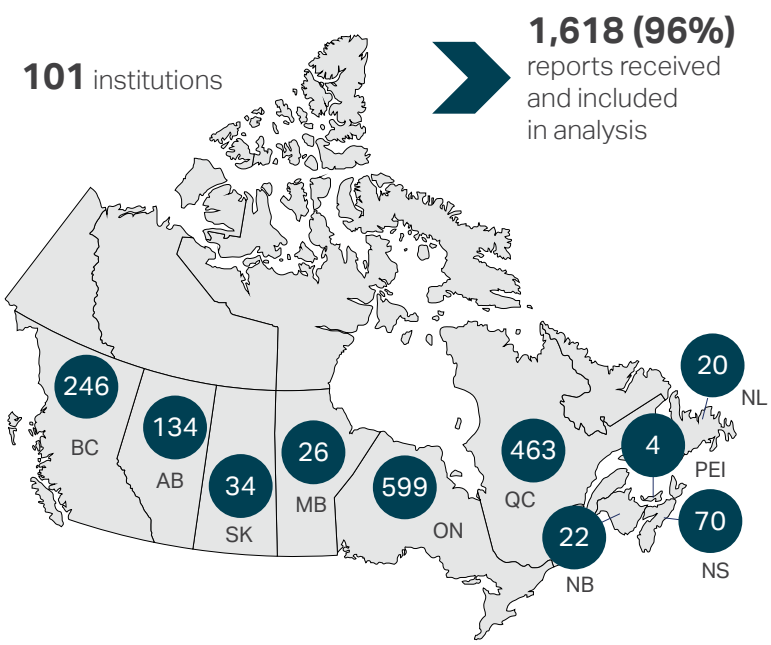
Challenges

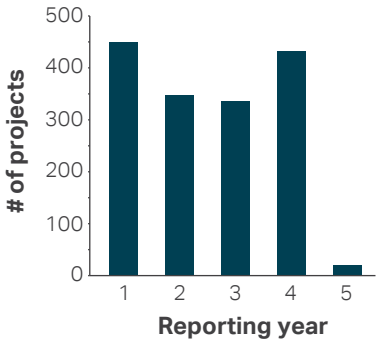
Most common factors limiting research

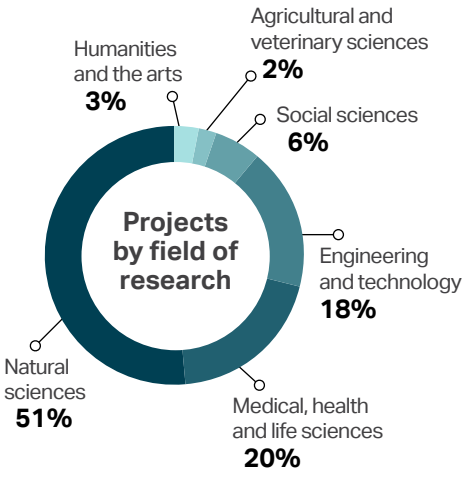
78% of project leaders reported one or more factors limiting the quality and impact of the research enabled by the research infrastructure. The most common factor reported was "other." Most (85%) of the comments submitted under the "other" category related to challenges due to the COVID-19 pandemic, particularly research delays due to the inability to access their laboratory or to acquire, operationalize or maintain the research infrastructure.

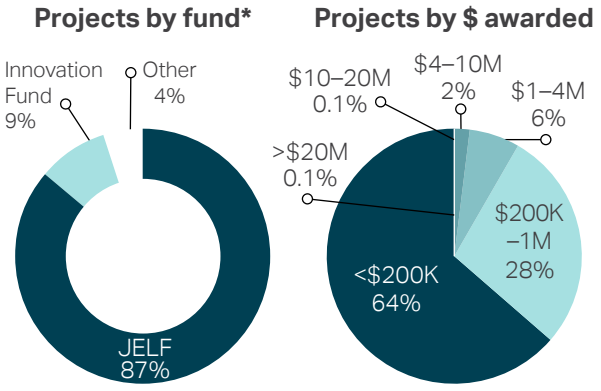


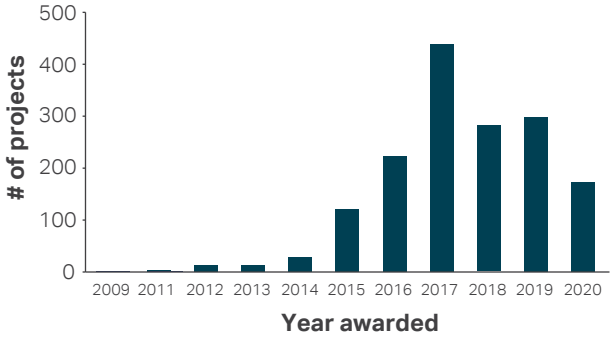
Appendix 1 – Composition of the 2022 project progress report sample











* Innovation Fund includes projects funded through the Innovation Fund in 2015 and 2017, the New Initiatives Fund in 2012 and the Leading Edge Fund in 2009 and 2012.

John R. Evans Leaders Fund (JELF) includes projects funded through: a partnership between the Leaders Opportunity Fund and the Canada Research Chairs Program and both the unaffiliated and partnership (associated with an an application for research support funding from another program).

"Other" includes projects funded through the Cyberinfrastructure Initiative – Challenge 1, the Exceptional Opportunities Fund (EOF) and the EOF COVID-19 Fund for both universities and colleges.