

**Building on Our Strength:
Higher Education Research and Science**

**Written Submission for the Pre-Budget Consultations in
Advance of the 2023 Budget**

by the

Canadian Consortium for Research



Consortium canadien pour la recherche

The Canadian Consortium for Research (CCR) is the largest advocacy consortium for researchers in Canada, focusing on research funding across all disciplines, and supporting post-secondary education. The CCR includes 22 organizations that represent more than 50,000 researchers and 650,000 students across numerous disciplines.

For more information about the CCR, please visit <https://ccr-ccr.ca/>.

RECOMMENDATIONS

Recommendation #1: Increase base funding levels of the Tri-Councils for investigator-led research by \$200 million per year for the next five years.

Recommendation #2: Increase the number and value of scholarship awards by \$185 million in 2023 and an additional \$55 million per year, thereafter.

Recommendation #3: Renew investments in equity, diversity, and inclusion initiatives related to research.

Recommendation #4: Expand the Statistics Canada academic staff survey (UCASS) to include data on part-time faculty and develop a Science and Research Human Resource Strategy.

Recommendation #5: Increase funding for government science by at least \$740 million annually to return funding levels to 2010/11 levels and review barriers to government-academic partnerships.

INTRODUCTION

Higher education research and development, the strength of Canada’s research and science ecosystem, remains severely underfunded. The \$1 billion investment in fundamental science in Budget 2018 restored some funding for basic research after years of neglect. Budget 2022 saw an investment of \$3 billion to initiatives to incent businesses to invest in research and development. A further commitment of \$1 billion over five years for fundamental science is needed to keep solid this foundation of our knowledge infrastructure.

In addition, Canada must take immediate steps to fix the shrinking pipeline of scientists and researchers by better supporting graduate students, developing a national research and science human resource strategy, and supporting government science.

Another key strength of Canada is our diversity. Our Budget 2023 submission calls for a modest investment of \$30 million to programs aimed at increasing equity, diversity, and inclusion within our research and science community.

1. Invest \$1 billion over five years in fundamental science

The base of Canada’s research ecosystem is fundamental science. Basic research expands knowledge needed for progress and innovation. This was recognized by the government in Budget 2018 which noted that:

“Canada’s prospects are bright thanks in part to earlier investments in science, research, and innovation. These investments built world-leading Canadian universities and colleges and created a strong research environment—one that has resulted in global recognition and has succeeded in attracting top talent in important emerging fields like artificial intelligence. The next step is to build on this success and make Canada a beacon that attracts the very best researchers from across the globe.”

The funding commitments made in 2018 were essential to shore up the crumbling base of our research ecosystem. However, they fall far short of making Canada a beacon that attracts the very best.

- When accounting for inflation, funding at CIHR and NSERC has not grown since 2012/13.ⁱ
- The flagship inter-disciplinary, international, fast-breaking, and higher-risk research fund has a 17.2% success rate.
- The value of grants has not increased in real terms.

Canada’s research intensity was 1.70% of the Gross Domestic Product (GDP) in 2020 compared to the Organisation for Economic Co-operation and Development (OECD) average of 2.68%.ⁱⁱ When examined, our key strength is in Higher Education Expenditures on Research and Development

(HERD) and we lag on Business Expenditures (BERD). To address the latter, the government invested \$3 billion in Budget 2022 to initiatives to incent businesses to invest in research and development.

Meanwhile HERD, the strength of our research and science ecosystem, is not where it needs to be, even after a \$1 billion Budget 2018 investment to restore some funding for basic research after years of neglect. To build on our strength of higher education research and development, an additional \$1 billion over 5 years to granting council funding is needed.

This recommendation is echoed by the House of Commons Standing Committee on Science and Research in its report, [*Successes, Challenges and Opportunities for Science in Canada*](#), released in June 2022, “the Government of Canada increase its investments in fundamental research through increases to the budgets of the three granting councils.”

2. Increase support for graduate students

Graduate scholarship awards have remained unchanged for nearly 20 years, and postdoctoral fellowships had only a small increase in the same timeframe. As the cost of living has steadily increased, these scholarships and fellowships provide inadequate support or incentive to continue to do this work in Canada.

We recommend that the government increase scholarship and fellowship award amounts for graduate students and postdoctoral researchers by \$185 million in 2023 and an additional \$55 million per year thereafter, to increase both the value and the number of awards, and to index to the consumer price index (CPI).

3. Renew investments in equity, diversity, and inclusion (EDI) initiatives

A diversity of backgrounds, experiences, and thought breed great science and research. This government has made progress in ensuring that publicly supported science and research is equitable and diverse. Budget 2018 committed \$21 million to seeding change. These initiatives are just taking root and the commitment must be renewed with additional funding to ensure these EDI initiatives flourish.

Specifically, the government should commit \$30 million over five years to continue the following:

- The EDI Capacity Building Grants
- The Dimensions program
- The Survey on Post-Secondary Researchers to assess impact of CoViD-19
- The University and College Academic Staff Survey (UCASS) and increase to include data beyond gender

4. **Expand Statistics Canada academic staff survey to include data on part-time faculty and develop a Science and Research Human Resource Strategy**

The limited data^{iii, 1} we have shows that Canada’s science and research workforce is shrinking. Since 2006, we have seen a 21% decline in tenure-track positions and a near doubling of ‘off the tenure-track’ contract positions. The off-track positions are employed on teaching only contracts with no support for research. In the words of one observer, “Canada is hemorrhaging early career research capacity.”^{iv}

As noted by the President of the Social Sciences and Humanities Research Council (SSHRC), “[There are] minimal opportunities for starting academics to undertake meaningful research...The real challenge...lies...specifically in finding ways to expand academic offerings to accelerate onboarding of early career researchers in an environment that is increasingly constrained financially.”^v

The number of researchers in Canada has declined over the last six years—the only G7 country to experience a decrease. Between 2014 and 2018, the number of full-time researchers per million inhabitants in Canada declined by 4.8%. During that same period, the number of researchers in the U.S. increased by 4.9%, in the United Kingdom by 9%, and in Germany by a full 20%.^{vi}

As a recent Council of Canadian Academies report concluded, cultivating a robust, resilient, and diverse scientific workforce is central to the development of a nation’s research capacity and requires supporting researchers throughout their careers.^{vii, viii}

5. **Restore funding for government to 2010/11 levels and review barriers to government-academic partnerships**

Science undertaken by the government complements, contributes to, and benefits from the work of academic researchers. Government science facilities, like the Experimental Lakes Area, welcome post-secondary researchers and students alongside government scientists. When government science is well funded, supported, and allowed to be freely shared with the broader scientific community, there are direct and indirect benefits for Canada’s academic research community and, ultimately, all Canadians. For this reason, the **CCR joins other stakeholders to recommend that funding for government science be increased by at least \$740 million annually to return funding levels to 2010/11 levels.**^{ix}

In addition, to make it easier to carry out joint research with government scientists, the granting agencies should review barriers for partnership with government scientists, including those presented by industry linkage and cost-sharing requirements.

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ⁱ Statistics Canada. [Federal extramural expenditures on science and technology, by performing sector and major departments and agencies.](#)

ⁱⁱ *OECD Main Science and Technology Indicators, March 2022 Edition*

ⁱⁱⁱ Data on the academic workforce is drawn from Statistics Canada, University and College Academic Staff System Survey and the long-form census.

^{iv} Wright, Julia. (2017). How to invest in our PhDs? Through faculty renewal. *University Affairs*.

^v Hewitt, Ted . (2018). [Underemployment of PhDs hurts research.](#) This article was originally published in [The Chronicle Herald](#) on January 3, 2018.

^{vi} Sylvain Charbonneau. Vice-president of research and innovation at the University of Ottawa, (2021) Oral Testimony. House of Commons Committee on Science and Research, February 10.

^{vii} Council of Canadian Academies, (2021.) Powering Discovery: The Expert Panel on International Practices for Funding Natural Sciences and Engineering Research.

^{ix} McGrath, Eleanor. (2021). [A decade of defunded public science: preparing for the next crisis.](#) Sciencepolicy.ca