



Ensuring Canada's Competitiveness through Investment in the Next Generation of Highly Skilled Researchers:

Written Submission to the Pre-Budget Consultations in Advance of the 2019 Budget

LIST OF RECOMMENDATIONS

Recommendation 1: That the government boost Canadian competitiveness in attracting and developing our next generation of highly skilled researchers through a base increase of \$140 million, in equal increments of \$35 million over four years, to harmonize, upgrade and bring strategic focus to the direct federal awards system for doctoral students, post-doctoral trainees and fellows.

Recommendation 2: That the government increase the minimum threshold for reimbursement of indirect research costs to 25 per cent for all institutions via the Research Support Fund.

Recommendation 3: That the government encourage and continue to increase investments in Indigenous health research through the three granting councils (CIHR, NSERC and SSHRC) as well as through the Canada Research Coordinating Committee.

Recommendation 4: That the government develop policies that enhance the life science sector's capacity to do business in Canada, such that companies will be incentivized to invest their research and development dollars here, creating more employment opportunities to build a highly skilled Canadian workforce.

Recommendation 5: That the government provide more immediate support to researchers by accelerating Budget 2018's promised five-year, \$925 million investment into the granting councils. Investments planned for Years 4 and 5 would be switched with Years 2 and 3, resulting in the following profile:

Year 2 (2019-20) \$235 million

Year 3 (2020-21) \$235 million

Year 4 (2021-22) \$155 million

Year 5 (2022-23) \$185 million

INTRODUCTION

Research Canada appreciates Budget 2018's announcement of an unprecedented investment in Canada's research system. This nearly \$4 billion commitment recognizes the central role of the Canadian research enterprise in driving economic growth, innovation and producing a highly skilled, competitive workforce. In particular, the \$925 million dedicated to granting councils is crucial to Canada's ability to maintain and build a research ecosystem that is attractive to budding and early-career researchers, keeps mid-career researchers here, and is further enriched by the continuous development of skills and knowledge when those working within it are well-funded. Creation of a tri-council fund to support fast-breaking, high-risk research is also welcome.

As encouraged as we are, we remain concerned about the impact of previous underinvestment on our next generation of fundamental science research. Canada has not only trailed the OECD average for research and development intensity and growth but fallen further behind.¹ As Canada works to reverse its previous course, the rest of the world is only gaining further momentum.² Our recommendations speak to ensuring that the promised reinvestment has the best chance of propelling Canada forward through an extraordinarily competitive environment. This includes funding the full costs of research. Our recommendations also speak to building a research system that recognizes the multifold value of Indigenous health research informed directly by Indigenous communities, and that encourages the skilled employment opportunities provided by Canada's life sciences industry.

About Research Canada: Research Canada is a national alliance dedicated to advancing health research and health innovation through collaborative advocacy. Our mission is to improve the health and prosperity of all Canadians by championing Canada's global leadership in health research and innovation.

¹ Organisation for Economic Cooperation and Development. *OECD Science, Technology and Innovation Outlook 2016: Canada*. P. 1 http://dx.doi.org/10.1787/sti_in_outlook-2016-50-en

² Conference Board of Canada. May 2018. <https://www.conferenceboard.ca/hcp/provincial/innovation.aspx>

DETAILED RECOMMENDATIONS

Recommendation 1: *That the government boost Canadian competitiveness in attracting and developing our next generation of highly skilled researchers through a base increase of \$140 million, in equal increments of \$35 million over four years, to harmonize, upgrade and bring strategic focus to the direct federal awards system for doctoral students, post-doctoral trainees and fellows (PDFs).*

Advancing Canada's international competitiveness starts with internationally competitive financial support for budding researchers. Direct federal awards are an essential part of that support for many graduate students, trainees and PDFs. These individuals are integral to the research system workforce, critical to the development of the highly qualified personnel necessary for Canada's knowledge economy, and, in the case of PDFs, vital to supporting top-flight research projects.³ The 2017 Fundamental Science Review estimated that 6,000 doctoral students and 1,400 PDFs held direct federal awards at any one time. However, the number of core graduate awards had not changed since 2007, despite a 32 and 38 per cent increase in the number of master's and doctoral students respectively, and their value remained at 2003 levels.⁴

Budget 2018 indicated an interest in exploring how to better support students – the next generation of researchers – through scholarships and fellowships.⁵ Enhancements to these direct federal awards will realize multiple returns by sending the message that Canada values and supports developing researchers and by providing funds that not only assist them but indirectly support the projects of which they are a part. The Fundamental Science Review also endorsed a harmonized tri-council doctoral and post-doctoral awards program to avoid unnecessary complexity and inefficiency, which we support.

Recommendation 2: *That the government increase the minimum threshold for reimbursement of indirect research costs to 25 per cent for all institutions via the Research Support Fund (RSF).*

Research funding provided through Canada's research-granting councils (CIHR, NSERC, SSHRC) is generally limited to direct project costs. Institutions whose researchers receive

³ Advisory Panel for the Review of Federal Support for Fundamental Science. *Investing in Canada's Future*. 2017. P. 137

⁴ Ibid. P. xix

⁵ Government of Canada. *Federal Budget 2018: Equality Growth: A Strong Middle Class*. 2018. P. 89.

grant funding however also incur costs to manage their research endeavour; the indirect costs of research. The RSF assists Canadian post-secondary institutions and academic health science centres with these indirect expenses. Research Canada was pleased to see investments into the RSF in Budget 2018. Nevertheless, the demand and need for this funding continues to outstrip academic institutions available resources.

Research Canada is also of the view that the requirement for matching non-industry funding for research infrastructure should be eliminated or at least reduced because it is burdensome on provinces and institutions.

Recommendation 3: *That the Government of Canada continue to increase investments in Indigenous health research that keep pace with the growing Indigenous population through the three granting councils (CIHR, NSERC and SSHRC) as well as through the Canada Research Coordinating Committee (CRCC).*

We applaud Budget 2018's \$1.5 billion investment in Indigenous health and its \$3.8 million investment through SSHRC to develop a strategic plan identifying new ways of undertaking research with Indigenous communities. Canada will not uncover truth and achieve reconciliation with Indigenous peoples if their communities continue to trail the rest of the population in key health indicators.

We also welcome the government's \$65 million investment in the CRCC, which is committed to developing an interdisciplinary Indigenous research training model, in partnership with Indigenous communities. Likewise, we are pleased with CIHR's 4.6 per cent budget commitment towards Indigenous health research, with spending to date of 3 per cent. Its Network Environments for Indigenous Health Research (NEIHR) builds on a proven model for increasing the pool of high level, competitive Indigenous researchers and increasing the breadth and depth of Indigenous health research.⁶ With sufficient funding, the NEIHR will serve what we and others see as priorities: support for Indigenous health research generally, for Indigenous researchers and for the integration of Indigenous approaches and understandings in the development of further knowledge. We encourage CIHR to spend the remainder of its budget committed for Indigenous health research quickly and invite NSERC and SSHRC to make comparable investments.

Recommendation 4: *That the government develop policies that enhance the life science sector's capacity to do business in Canada, such that companies will be incentivized to*

⁶ Canadian Institutes of Health Research – Institute of Aboriginal Peoples' Health. *Expert Review Team Report for Institute of Aboriginal Peoples' Health*. 2011.

invest their research and development dollars here, creating more employment opportunities to build a highly skilled Canadian workforce.

Canada's pharmaceutical industry employs 34,000 highly skilled workers and directly contributes more than \$1 billion into this country's research and development. Yet, while it employs some of the world's best scientists, Canada only attracts about 1 per cent of global foreign investment in the life sciences industry.⁷ We also fall short with respect to a health research funding and policy funding framework that values not only outcomes, such as biomedical discovery and commercialization, but the process of continuous innovation. Our industry partners have much at stake, and it is unclear whether future decisions regarding pricing, reimbursement, pharmacare and credit for investment in research and development will serve their sector or, by extension, our research ecosystem.

Canada's life sciences companies work in a space bombarded by rapid scientific and technological change; global political, economic and financial uncertainty; and within a complex policy environment. They are looking to government to play a strong national leadership role and adopt a consistent "whole-of-government" approach to life sciences innovation. Additionally, there is call for government to improve the quality of data about the sector; to make it publicly available; to invest in talent attraction, development, and retention; and to support researcher excellence, including fundamental science. Without a robust and well-supported life sciences industry, the deep talent pool emerging from Canada's academic institutions will not find jobs, jeopardizing efforts to expand and attract capital, open markets and supply chains, and build strong local ecosystems. Finally, the sector supports a revisiting of healthcare procurement, including a move from cost-based to value-based systems that encourage innovations with longer-term impacts and savings.

Recommendation 5: *That the government provide more immediate support to researchers by accelerating Budget 2018's promised five-year, \$925 million investment into the granting councils. Investments planned for Years 4 and 5 would be switched with Years 2 and 3, resulting in the following profile:*

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⁷ Innovative Medicines Canada. Retrieved from website: <http://innovativemedicines.ca/innovation/industry-impact/>

Budget 2018's significant increase to granting councils addresses the prior debilitating period of underinvestment and its impact on Canadian research, innovation and competitiveness. Nevertheless, Research Canada anticipates that it will take at least three more years before we begin to see solid metrics of re-expansion under the current schedule, and due to the normal lag between announcement and granting competitions. We are concerned about what we will lose in the interim and its consequences for Canada's research and innovation project.

To illustrate, granting success rates at CIHR have declined from nearly 42 per cent in 2000 to 14.6 per cent in 2017.⁸ The most recent project grant competition had a success rate of 14%. Researchers have also reported delaying or scaling back potentially impactful research and losing competitiveness internationally as a result of past underfunding.⁹ In order to secure Canada's long-term future as an innovation nation and narrow the widening gap between ourselves and leading countries, we ask the government to front load Budget 2018's granting council investments to years 2 and 3 to boost Canada's capacity to regain lost ground in the shortest amount of time.

CONCLUSION

The Government of Canada took bold steps in Budget 2018 towards reversing a previous worsening scenario of declining Canadian research and innovation competitiveness demonstrating it understands what is at stake and shares the research community's vision for excellence. We cannot falter at this critical moment. Delayed investment in people and research in an era of rapid innovation means delayed, even lost, development, skills, talent and economic opportunity. A corresponding investment in the indirect costs of research is also necessary. Support for Indigenous-informed health research and for Canada's life sciences industry promises multiple returns through improved health, social and economic well-being for Indigenous and non-Indigenous Canadians, greater opportunities for researchers and a more richly-skilled workforce. We are confident today's investments will be repaid many times over. The time to act is now.

⁸ Canadian Institutes of Health Research. *Success Rates in CIHR's OOGP and Project Competitions* (unpublished), July 2018.

⁹ Association of Early Career Health Researchers. *Final Report of a Cross-Country Survey*. 2016. P.1