



Submission to the Standing Committee on Science and Research *Study on Top Talent, Research and Innovation*

By Research Canada: An Alliance for Health Discovery

On behalf of Research Canada: An Alliance for Health Discovery, we thank the Committee for undertaking this study on Top Talent, Research and Innovation. Canada's research and innovation talent are both the backbone and future of our **health research and innovation ecosystem**, and it is vital that we support them to ensure that game-changing advancements in health research and innovation can continue to improve the health and wellbeing of all Canadians. The cultivation, attraction and retention of a strong talent pool, and thereby the strength of our health research and innovation ecosystem as a whole, hinge on strong partnerships across ecosystem stakeholders and an ecosystem-wide approach to investment.

The health research and innovation ecosystem is Canada's network of postsecondary institutions, research hospitals, governments, incubators, start-ups, innovative companies, investors, health charities and patient groups, each working in collaboration to advance science and develop innovative solutions to improve the health and wellbeing of all people living in Canada.

Health and health care are high on the list of aspirations of people across the globe, and that has only become more apparent in this post-COVID world. And at the centre of our health care and health research enterprises are *people*—the diverse researchers and clinicians at all career stages that make up Canada's health research and innovation talent pool. From the early-career researchers—including graduate students, trainees and postdoctoral fellows—who are the future of our health research and health care workforces, to the innovators who transition to careers in the health and biosciences industry; from the laboratory researchers advancing our knowledge base of fundamental science, to the clinician-researchers conducting clinical studies with patients in our hospitals across the countries, and to the countless other health care workers and clinicians—including nurses, personal support workers and other care providers—who bring these health innovations directly to patients.

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

Bolstered Investment in Fundamental Science

Fundamental science is the backbone of our health research enterprise and the non-negotiable first step towards the development and commercialization of innovative health technologies and treatments. Budget 2018 made an unprecedented investment of nearly \$4 billion in Canada's research ecosystem, including \$925 million over five years to the Tri-Council (the Natural Sciences and Engineering Research Council, the Canadian Institutes of Health Research and the Social Sciences and Humanities Research Council).

While this was welcome news for the health research communities across Canada, it still did not go far enough to repair the years of underinvestment in fundamental science. Canada has continued to fall further behind our global peers, making the country less attractive to the world's research talent and harder to work in for early-career researchers trying to establish themselves. Worldwide, Canada is no longer in the top 30 nations in terms of total research intensity, and Canada's gross domestic spending on R&D has been declining slowly over the last 15 years.¹ As Canada works to reverse its previous course, the rest of the world is only gaining further momentum.²

Since this historic investment, the federal granting agencies have received only modest investments, most of which have been earmarked for strategic priorities, such as research into the long-term impacts of COVID-19 and dementia and brain health in the most recent federal budget. While funding for research into these priority areas of health research is important and welcomed, it must be balanced with additional investments into fundamental science. Moreover, Budget 2018's investment is quickly approaching its expiration date and is entering its final year in 2022-23, leaving Canada's research talent with serious concerns about the future of our research ecosystem.

The impact on Canada's research talent—the people that make it all work—is clear: insufficient funding in fundamental research limits the number of researchers at all career stages who are able to access the funding necessary for them to carry out their research. Over the past two decades, support for strategic, priority-driven and patient-driven research has steadily increased among the Tri-Council, but these investments have not been matched with adequate growth in investigator-led funding for Canada's frontline scientists, leaving many researchers in Canada struggling to find funding for the health research projects that can lead to innovative health solutions.

To illustrate, the success rates of the CIHR's project grant competition have steadily been declining over the past two decades, going from nearly 42% in 2000 to just under 21% in the Fall 2021 competition. This is in spite of the fact that 98% of current and recent graduates surveyed by the Science and Policy Exchange in 2018 saw value in obtaining direct federal

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>

awards over receiving indirect support via their supervisor’s research grants, and 63% believed that elite scholarships and fellowships offered through the Tri-Council should be reduced or abolished in favour of other direct awards.³ Similarly, while programs like the Canada Excellence Research Chairs help to encourage foreign research talent to come to Canada, we need stronger incentives through direct awards to keep these researchers in Canada.⁴

Inclusion, Diversity, Equity and Accessibility

Canada has long prided itself on its highly diverse population, but this is often not reflected in our health research ecosystem. Would-be BIPOC (Black, Indigenous and people of colour) researchers face numerous barriers throughout the education system, from primary to post-secondary—including the rising cost of postsecondary education that disproportionately impacts BIPOC students, students from low-income families and students living with disabilities⁵—and are limited in their ability to access role models and mentors, making it difficult for people from underrepresented groups to choose and succeed in fields leading to research careers. The systemic barriers and discrimination that Indigenous researchers face as a result of Canada’s long history of colonization are even greater. Dismantling these barriers to success in research will help not only to ensure that there is equitable access to this field, “but the inclusion of diverse perspectives has the further advantage of broadening horizons and improving interpretation of information and decision-making alike.”⁶

Some steps have been made to address this, such as Budget 2022’s investment of \$40.9 million over five years to support targeted scholarships and fellowships for promising Black student researchers through the federal granting councils. The Canadian Black Scientists Network points out, however, that while this is “a critical part of solving the complex barriers to Black inclusion and success [...] these measures will be most effective when woven into a robust Canadian science ecosystem.” As the Science and Policy Exchange found in its 2018 study, marginalized and individuals from equity-seeking groups perceive an even greater benefit from direct funding compared to their non-marginalized colleagues.⁷ Bolstered investment in fundamental

³ Research Canada Panel (June 5, 2019). *Calling for Recognition, Better Funding and Career Training: The Canadian Doctoral and Post-Doctoral Experience*. <https://rc-rc.ca/wp-content/uploads/2019/07/RC-June-5-2019-AGM-Panel-Calling-for-Recognition-Better-Funding-and-Career-Training.pdf>

⁴ Banting Research Foundation (May 27, 2021). *In the global race for science talent, is Canada investing enough?* Policy Options. <https://policyoptions.irpp.org/magazines/may-2021/in-the-global-race-for-science-talent-is-canada-investing-enough/>

⁵ Education for All (2021). *Education for All: Why Canada needs a more equitable, affordable, and high-quality post-secondary education system*. https://d3n8a8pro7vhmx.cloudfront.net/cfsfcee/pages/2580/attachments/original/1613164836/Education_For_All_Report.pdf?1613164836

⁶ Advisory Panel for the Review of Federal Support for Fundamental Science (2017). *Investing in Canada’s Future*. Pg. 92-93

⁷ Research Canada Panel (June 5, 2019). *Calling for Recognition, Better Funding and Career Training: The Canadian Doctoral and Post-Doctoral Experience*. <https://rc-rc.ca/wp-content/uploads/2019/07/RC-June-5-2019-AGM-Panel-Calling-for-Recognition-Better-Funding-and-Career-Training.pdf>

science will help to support all of Canada's research talent, including the BIPOC and equity-seeking groups that are most heavily disadvantaged by underinvestment.

Conclusion

Canada is home to an incredible, diverse health research talent pool, and we need to ensure that our health research and innovation ecosystem is able to remain attractive and provide viable career paths for both Canadian and international researchers. Bolstered investment in fundamental science is clearly a non-negotiable prerequisite to this, but we must also ensure that any steps we make are made with the goals of inclusion, diversity, equity and accessibility in mind.