

House of Commons Standing Committee on Finance
2021 Pre-Budget Consultation

Submission by :

Science & Policy Exchange / Dialogue Sciences et Politiques

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SCIENCE & POLICY EXCHANGE
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Recommendations

1. Increase direct investments in support of research trainees, tailored to the needs of students and fellows most affected by COVID-19.
2. Provide funding to agencies and organizations that can collect data on the impacts of COVID-19 on young researchers.
3. Re-evaluate the criteria used to assess excellence in research and training awards.
4. Make equity, diversity, and inclusion a priority in all the above recommendations.

The Government has created significant momentum for innovation through its recent investments in science and technology, including historic funding for academic research in 2018. Advances made possible by both fundamental and applied research took a lead role in Canada's response through the COVID-19 pandemic, from vaccine and therapeutics development to evidence-informed public health measures and policy changes. Now, Budget 2021 presents a critical need to provide direct support to Canadians and rebuild the economy, as well as an opportunity to ensure that Canada continues to train and retain its scientific experts.

Continued investments in science and research not only provides the mechanisms for Canada to be world-leaders in COVID19 recovery, science, and public health, it also builds capacity for the future through direct support of young Canadians and early-career researchers (ECRs). Crucially, the pandemic has also laid bare the importance of public trust in experts and in evidence, over misinformation, highlighting a need for greater scientific literacy which can be attained through greater scientist outreach, open science, science communication, and community endeavours. Our recommendations provide an outline for investments towards the future of research and innovation, helping to lay the groundwork for a robust research ecosystem that will pay dividends for years to come.

1. Increase direct investments in trainee support

As the main workforce of Canadian research, federal scholarships and fellowships provide graduate students and post-doctoral fellows with a stable income as they pursue highly demanding research training. However, many do not receive any federal support. In 2019 only 40% of Canada Graduate Scholarship applicants were successful¹. Furthermore, our recent survey² of over 1,100 young researchers found that just 68% had ever applied for federal research funding, and of that portion, only 52% had successful applications. Barriers to applying include international student status and the stringent criteria that are assessed.

These striking numbers served as evidence to exert the need for better trainee funding. Budget 2019 notably made a "Promise to Canada's Future" and invested \$115M in Canadians pursuing post-graduate training, supporting 1000 new graduate scholarships per year. Direct investments in the next generation in research helps to build the capacity of highly-qualified personnel (HQP) who will become Canada's lead researchers, science communicators, science policy makers, entrepreneurs and innovators across all economic sectors. Fundamentally, a graduate degree provides young Canadians with diverse skills through work-integrated learning and the unique opportunity to further the global pursuit of knowledge.

Not all trainees have equal access to these opportunities, however³. The pandemic has further exposed and exacerbated these inequalities, as researchers paused their work and pivoted to working from home. COVID19 has increased the burden on caregiver trainees with young families, or with limited resources and support to cope with such changes. Underrepresented minorities and international students were especially impacted.

To provide the next generation in research with direct support and to produce HQP for Canada, we recommend:

- **Increasing the number and value of trainee awards.** We recommend increasing the value of awards by harmonizing all postdoctoral fellowships across funding agencies to \$50K per year for 2-3 years, all doctoral scholarships to \$35K per year for 3 years, and all Master's scholarships to \$22K per year for one year. This means abolishing "elite" awards such as the Vanier CGS and Banting awards, and reinvesting that sum to support a greater number of awards and fellowships. Moreover, we recommend increasing the number of available awards to meet the recommendations of the Fundamental Science Review report⁴.
- **Allocating a percentage of scholarships to international students reflecting the proportion of international applicants.** International graduate students are ineligible for the majority of Tri-Council training awards. This puts significant financial burden on international students, heightened by the pandemic, and limits their career development.
- **Investing in mental health support for students.** Graduate students are facing a mental health crisis. Financial precarity, exacerbated under COVID-19, adds to the myriad of other stresses and threats to their mental wellbeing and health which they already face⁵ during their demanding graduate studies. Trainees from underrepresented groups, including gender minorities, BIPOC students, LGBTQ+, and disabled students face additional barriers⁶. Dedicated funding to academic mental health services, specifically to provide access to counselling at universities or in collaboration with local community resources, is a necessity to maintain the productivity and workload of research trainees.

2. Increase funding to agencies that can collect data on the impacts of COVID-19 on trainee researchers

Comprehensive data will be key to developing appropriate policies to combat the long-term social, economic, and health effects of this pandemic on the Canadian population. Ensuring that data collection institutions are well-supported will lead to smart investments that will support the most vulnerable populations. Institutions already collecting data to assess the effects of the pandemic on the student and research community include the government (Statistics Canada, Tri-Council granting agencies³), universities, and student-led groups⁷ and NGOs (including SPE). Data collection can be further bolstered to create strong, evidence-informed policy. To this end, we recommend:

- **Earmark funding for data collection initiatives by StatsCan and the Tri-Council agencies to assess the impact of COVID-19 on students to mitigate its long-term impacts.** Special priority should be placed on initiatives that collect demographic data that can better inform policies on the specific impacts and needs of the underrepresented communities and support EDI initiatives.
- **Invest in support for data collection by community organizations** by enabling StatsCan and Tri-Councils to allocate funds directly to these organizations.
- **Support open science and open data** in order to encourage the government and all other sectors to establish policies informed by facts.

3. Re-evaluate the criteria to assess excellence for federal funding applications.

Currently the selection criteria for federal doctoral CGS/PGS awards place high weight on research experiences and achievements, past scholarship successes, publication records, and academic grades. These criteria do not account for the wide breadth of experiences within the research community, and further create barriers for first-generation students and those who come from underserved and underrepresented communities. Furthermore, these criteria do not reflect a modern research career path where science communication, science outreach, and other community work is imperative to combat misinformation and to bolster public trust in science. These initiatives are necessities during a pandemic. Thus, we recommend:

- **Providing funding to the Tri-Council agencies (CIHR, NSERC, and SSHRC) to coordinate a re-evaluation of assessment criteria for graduate and postdoctoral awards.** Granting agencies are the heart of scientific funding and, given their commitment to the San Francisco Declaration on Research Assessment, it is important to support their endeavour in redefining research excellence in collaboration with the research community. Furthermore, **graduate students and postdoctoral fellows should be engaged in all efforts to redefine excellence.**
- **Support established researchers who create opportunities for community engagement and ECRs.** Platforms like COVID19 Resources⁸ have shown the benefits of community engagement by researchers and how this work is essential in a crisis. To foster these engagements by scientists and create long-lasting changes in academic mindsets, funding criteria for assessing excellence of established researchers should also be re-evaluated, to value community engagement at all levels of research careers.

4. Make equity, diversity, and inclusion a priority in all the above recommendations.

Despite recent efforts by initiatives such as NSERC's Dimensions Charter, the academic community still lacks diversity. This environment perpetuates barriers for underrepresented researchers to succeed in and contribute to the research community.

Currently, data collection and efforts tailored to the underrepresentation of women is available from the Tri-Councils, however we have limited knowledge on the experiences of other marginalized communities including Black, Indigenous, other people of color, members of the LGBTQ+ community, family caretakers and people with disabilities in Canadian research. In order to foster a more diverse, inclusive and equitable pool of highly talented and accomplished researchers, as well as providing more diverse role models for society and the next generation, we recommend:

- **Measuring the underrepresentation of all marginalized groups at Canadian institutions.** The Tri-Council Agencies should collect and publish data that reflects the diversity of underrepresented individuals in their granting procedures as listed above. They should further provide resources for academic institutions to collect similar data to develop recommendations to improve EDI at Canadian institutions.

- **Collaborating with professional societies and community groups to address specific needs.** The Tri-Council Agencies should provide additional resources to the many professional and academic societies already working towards improving EDI within their local communities.
- **Providing targeted investments to trainees and early career researchers.** Underrepresented researchers face unique barriers throughout their careers. Specific resources in the form of direct financial investments and community resources can help mitigate these barriers.

Final considerations

The 2020 pandemic has changed the way society and science interact. Our destabilized economy will need appropriate stimulus and time to flourish again. Budget 2021 will represent the Canada of tomorrow, and will show how our Government decides to overcome the challenges and redistribute resources to address societal issues that were emphasized by the world crisis, including systemic discrimination. A robust and well supported research system can produce evidence on which to base policies, support a recovering and prospering economy, as well as produce HQP who will become Canada's next innovators and leaders

Funding the next generation of researchers is necessary to sustain the essential workforce of our scientific innovation centers. Supporting them through this crisis and further will also provide Canada with the knowledge and skills that it needs to rebuild the country's economy. Based on these results, we encourage the Government of Canada to continue to increase support for scholarships and fellowships for the next-generation of researchers and HQP in Budget 2020, according to our recommendations.

We commend the efforts made by the Government on the COVID-19 response, and their demonstrated commitment to the research trainees who will bring their expertise to diverse careers. We also look forward to continued engagement with the Government to ensure that trainee voices are heard in these matters and that training the next generation of researchers remains a priority.

Thank you,

Sincerely,
The Science & Policy Exchange Team

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