

House of Commons Standing Committee on Finance
2020 Pre-Budget Consultation

Submission by :

Science & Policy Exchange / Dialogue Sciences et Politiques

Science & Policy Exchange (SPE) is a non-profit advocacy group run by graduate students and post-doctoral fellows in Montreal, whose mission is to foster the student voice in evidence-based decision making and to bring together leading experts from academia, industry, and government to engage and inform students and the public on issues at the interface of science and policy.



SCIENCE & POLICY EXCHANGE

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Recommendations

1. Increase the number of postdoctoral awards to match rise of postdoctoral fellows.
2. Increase the value of student and postdoctoral awards indexing with inflation.
3. Foster international collaboration and mobility by increasing awards for international students and allowing mobility of Canadian award holders.
4. Make equity, diversity, and inclusion a priority in all the above recommendations.



Budget 2019 made a “Promise to Canada’s Future” and invested in Canadians pursuing post-graduate training by increasing the number of Canada Graduate Scholarships (CGS). The previous budgets have recognized the value of fostering research, both fundamental and applied, to promote Canadian innovation. Investing in research by funding trainees helps to build the capacity of highly-qualified personnel (HQP) who will be Canada’s next innovators. In particular, we commend the government’s continued interest in supporting the next-generation of scientists with a \$115M investment in student fellowships. Additionally, increasing parental support for tri-council funded graduate students and post-doctoral fellows (PDFs) is a critical step towards equity, diversity, and inclusion (EDI). We appreciate this effort by the government. Despite this, we were disappointed by the lack of recommendations regarding funding for PDFs or international students, as well as the absence of changes to award values or international portability.

Students and PDFs make up a significant portion of researchers and must be adequately supported to fuel innovation. As they are an important stakeholder in this discussion, Science & Policy Exchange surveyed over 1100 current and recent research trainees on their experience with federal scholarships and fellowships and their thoughts on the future of these programs. Using the data from this survey, we identified gaps in funding and international trainee support. In order to create an environment for training HQP, we **propose the following specific recommendations for supporting research in Budget 2020:**

(1) Increasing the number of postdoctoral awards

In Budget 2019, a specific investment was made to increase the number of available Canada Graduate Scholarships for Masters and Doctoral students, however the number of scholarships for PDFs was not increased. PDFs who need funding to support not only their research and career development, but also their families. Failure to secure funding can result in job loss and project termination, particularly for less privileged PDFs who already face important barriers. These consequences are crippling to the career development of young researchers.

98% of respondents to our survey outlined a clear benefit to obtaining direct support awards rather than indirect support from their supervisors. The benefits outlined included: increased salary, salary security, and more autonomy and prestige as researchers early in their career. This highlights the importance of these awards.

Additionally, 63% believe that Vanier and Banting elite awards should be reduced or abolished.

In order to increase the number of trainees who receive important funding opportunities, we recommend:

- **A specific increase in the number of Postdoctoral Fellow (PDF) awards.** PDFs are a critical part of the research ecosystem and many go on to contribute outside of academic research after their fellowships. PDFs are considered employees and pay federal taxes. Since the number of PDFs in Canada is rising, we believe it is time to invest in them by increasing the number of available awards in line with this increase. Abolishing elite awards can liberate funds for more awards.

(2) Increasing the value of student and postdoctoral awards indexing with inflation.

Budget 2019’s increase in number of scholarships was a much needed step to match available funding and increased enrollment of graduate students. However, the value of awards provided by federal granting councils has not kept pace with inflation¹. A lack of financial resources for trainees can impact the quality of research and training by forcing award recipients to supplement their income outside of their



program work. These consequences prevent trainees from concentrating on their career development and can have a significant impact on their financial security or ability to start families.

The importance of adjusting the awards became a clear need based on our survey results. Our survey found:

- Median recommended values for awards were \$22,000 for Masters level, \$35,000 for Doctoral, and \$50,000 for Postdoctoral Fellowships (see Appendix for selected results)
- 66% of those who received Tri-Council awards required additional funding to support themselves. Respondents were also concerned that the value of awards does not reflect discrepancies between costs of living in different cities.
- 79% of respondents valued increasing the monetary value of the average award.

To guide this recommendation, we propose the following amendments to the current^{2,3,4} graduate and postdoctoral level awards:

- **Harmonize all postdoctoral fellowships to \$50K, for 2-3 years.** PDFs are now considered by institutions as employees, thus paying full taxes on their fellowships and salaries, which reduces their take-home. To reinstate the value of fellowships, we recommend harmonizing them to \$55K per year (2 years at NSERC and SSHRC, 3 years at CIHR, as it is now).
- **Harmonize all doctoral scholarships to \$35K per year, for 3 years.** This implies equalizing all awards to the value of CGS for CIHR, NSERC, and SSHRC. The “elite” Vanier CGS awards are of \$50K per year, which is two-fold the stipend of trainees not funded by CGS programs. Abolishing the Vanier & Banting awards would liberate significant capital towards harmonizing all awards to \$35K. Harmonizing reduces inequalities by providing more trainees with a living wage that reflects their role as the workforce of science in Canada. Additionally, eliminating elite high value awards will liberate funds to create more awards, and ultimately will impact a greater number of trainees.
- **Harmonize all Master’s scholarships to \$22K, for one year.** We consider this to be a fair and overdue increase for all Master’s CGS, which are currently set to \$17,500. Like the doctoral awards, this has not kept up with inflation for the last 15 years.

(3) Foster international collaboration and mobility

Canada needs a workforce skilled in problem-solving, communication, collaboration, creativity, and adaptability⁵. International experiences improve these skills, as well as fostering “heightened cultural awareness” and higher employment rates^{6,7,8}. Canadian students training abroad creates international networks for idea exchange and innovation, broadens Canada’s sphere of influence as a leader in scientific research, and reinforces our values of openness and inclusion. Importantly, students from less-advantaged backgrounds benefit from international training the most in terms of academic outcomes and employment^{9,10}. Therefore we recommend to:

- **Make all Tri-Council scholarships portable internationally.** Currently, the only Tri-Council training awards that are portable outside of Canada are the doctoral postgraduate scholarships (PGS-D) and the PDF awards. Allowing students to take their scholarships abroad and actively encouraging this will ultimately increase Canada’s economic growth and competitiveness.





Providing students with international experience is a smart investment in their future success – and Canada's."

– 2017 Canadian "Report of the Study Group on Global Education"
(Ch.2, goglobalcanada.ca)

There are also challenges for international trainees, who are aggressively recruited to Canada but lack adequate support to manage the higher tuition fees and the costs associated with international relocation. Support for international trainees helps attract the best and brightest talent to Canada. Our survey indicated that:

- 80% of international survey respondents recommended increased funding for international trainees, who are currently ineligible for most awards.
- 70% of international students surveyed reported that they found it difficult or very difficult to find funding in Canada.
- 33% of all survey respondents, including Canadians, felt there were funding barriers for international applicants.

In order to better support international students and PDFs in Canada, we recommend that Budget 2020:

- **Allocates a percentage of scholarships to international students reflecting the proportion of international applicants.** Currently, except for the Vanier Graduate Scholarship, international graduate students are not eligible for Tri-Council training awards. This puts significant financial burden on international students and limits their career development.
- **Provide supplemental funding or tax exemption for the first two years for international PDFs to help defray the costs of relocation and immigration.** Furthermore, information on postdoctoral salaries, benefits, and taxation should be more readily available for international PDFs looking to move to Canada.

(4) Making equity, diversity, and inclusion a priority in the above.

Investment in scholarships and fellowships can help promote equity, diversity, and inclusion. Funding international student opportunities and promoting international mobility can create diversity and foster a global environment in Canadian research.

From our survey, women perceived more benefits from funding through scholarships and fellowships, but they also experienced more barriers associated with them. In addition, EDI-seeking groups highly valued science outreach support, multidisciplinary research, and the societal impact of science¹¹. Therefore, investing in EDI can support multidisciplinary research and science impact. We believe the above recommendations are critical to providing opportunities to all Canadians, and that EDI considerations be made a priority in any changes to the scholarships and fellowships programs.

Final Considerations

Through our survey, research trainees have voiced the importance of scholarships and fellowships to their professional development, as well as their perspectives on the current awards ecosystem. Support for PDFs, international students, and international mobility for students are still needed to maintain a productive research ecosystem that benefits the Canadian 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 Scholarships and Fellowships and their demonstrated commitment to the research trainees who bring their expertise to many industries and careers. We also look forward to continued engagement with the Government to ensure trainee voices stay included in these matters and that training the next generation of researchers remains a priority.

Thank you,

Sincerely,
The Science & Policy Exchange Team



References:

1. Global Young Academy (2017) Restoring Canada's Competitiveness in Fundamental Research: The View from the Bench, p12-31. <https://globalyoungacademy.net/wp-content/uploads/2017/06/GYA-2017-FundResearchReport-LoRes.pdf>
2. Canadian Institute of Health Research (2019) 2019 Funding Decisions Notifications. <http://www.cihr-irsc.gc.ca/e/196.html>
3. Natural Sciences and Engineering Research Council of Canada (2019) 2019 Scholarships and Fellowships Competition Results. http://www.nserc-crsng.gc.ca/NSERC-CRSNG/FundingDecisions-DecisionFinancement/ScholarshipsAndFellowships-ConcouRsDeBourses/index_eng.asp
4. Social Sciences and Humanities Research Council (2018) Competition Statistics. <http://www.sshrc-crsh.gc.ca/results-resultats/stats-statistiques/index-eng.aspx>
5. The Study Group on Global Education (November 2017) Report of the Study Group on Global Education. <http://goglobalcanada.ca/>
6. Universities UK International (March 2017) Gone International: Mobility Works - Report in the 2014-15 Graduating Cohort. https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/International/GoneInternational2017_A4.pdf
7. Potts D (2015) Understanding the Early Career Benefits of Learning Abroad Programs. Journal of Studies in International Education 19: 441-459. <https://doi.org/10.1177/1028315315579241>
8. Lim WS, Ho YM, Wee ATS, Chu J (2016) The Impact of Study Abroad Programmes on Graduate Employment Outcomes: A Propensity Score Matching Analysis. National University of Singapore. <http://www.nus.edu.sg/global/docs/The%20Impact%20of%20Study%20Abroad%20on%20Graduates%20Earnings%2027%20Dec%202016.pdf>
9. European Commission (September 2014) Erasmus Impact Study: Effects of Mobility on the Skills and Employability of Students and the Internationalization of Higher Education Institutions. <https://publications.europa.eu/en/publication-detail/-/publication/13031399-9fd4-11e5-8781-01aa75ed71a1/language-en>
10. Science & Policy Exchange (2018) Students as Stakeholders in Science Diplomacy: Outlook for Today and Tomorrow. http://www.sp-exchange.ca/images/reports/SPESciDip_Eng.pdf
11. Research Canada (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>

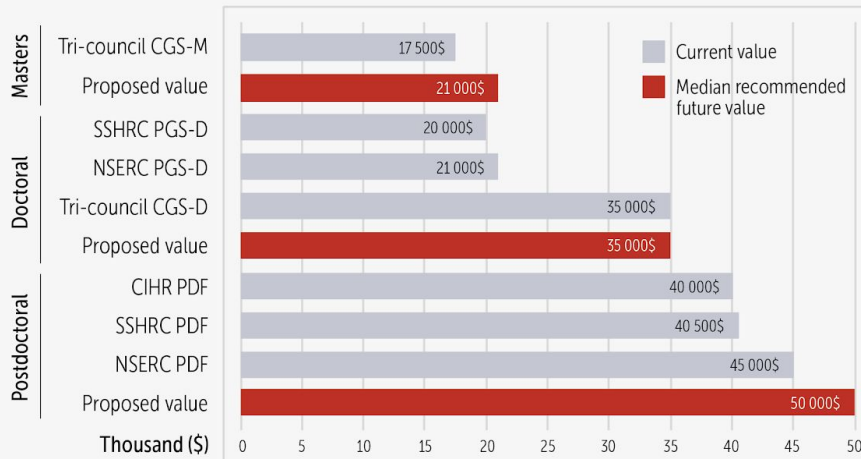
Appendix: Selected Results of Survey



Future Award Recommendations*

Keeping in mind funding limitations, what would you consider optimal values for Masters, Doctoral and Postdoctoral awards?

1000+
STUDENTS
& FELLOWS
SURVEYED
FR&EN



*This survey refers only to awards from CIHR, NSERC, and SSHRC.

Abbreviations:
CIHR: Canadian Institute of Health Research
NSERC: Natural Sciences and Engineering Research Council
SSHRC: Social Sciences and Humanities Research Council
CGS: Canada Graduate Scholarships
PGS: Postgraduate Scholarships
PDF: Postdoctoral Fellowships

Standard & Elite Award Considerations*

How do you value the following:

Increasing total number of awards and fellowships given



Increasing value of all standard awards



Increasing duration of eligibility for all awards



Increasing the value of post-doctoral awards

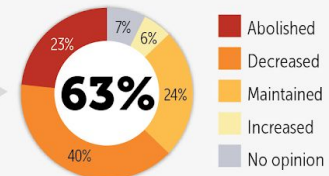


Increasing the value of elite awards



0 100
Value & Highly value Value a little Don't value No opinion

In your opinion, elite awards should be:



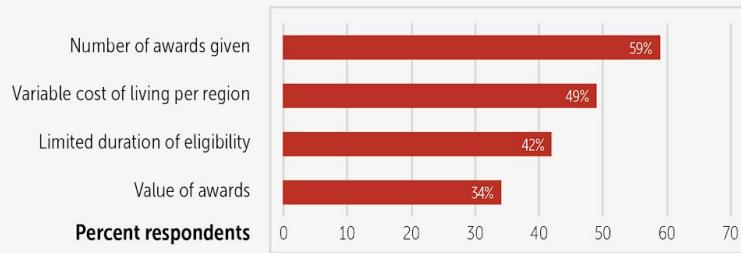
63% believe elite awards should be decreased or abolished.

* Elite awards refer to the Vanier Scholarship and Banting Fellowships

* Standard awards refer to all other Masters, Doctoral and Postdoctoral awards

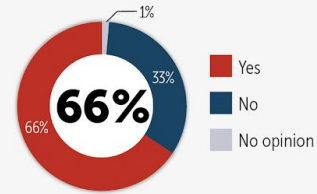


What are the barriers & problems associated with current scholarship and fellowship opportunities?



Award-Holder Perspective

Did you require other sources of funding during the duration of this award?



Are there benefits of obtaining funding from federal awards, rather than receiving support via your supervisor's research grants?

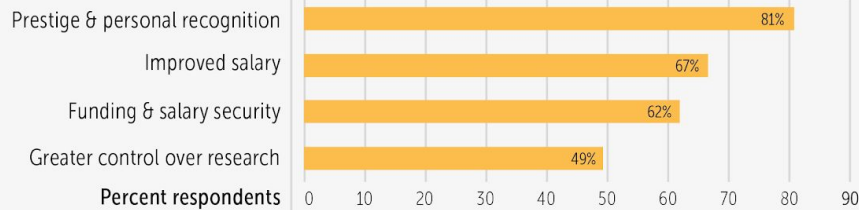


Figure 4. Respondents perceived benefits to receiving own award rather than being supported by supervisor's grant.

International Student & Fellow Perspectives

How much do you agree with the following statements:

There are not enough awards for international students and postdocs

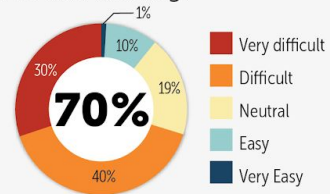


Specific incentives for international students are lacking



0 100
 Strongly agree & agree Neutral Disagree Strongly disagree No opinion

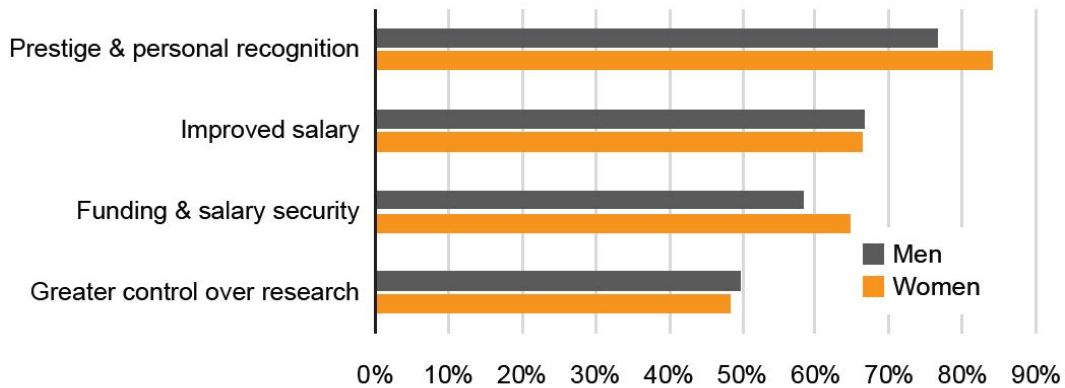
With respect to choosing to study or work in Canada, how challenging is it to find funding?



70% found it difficult or very difficult to find funding.



Are there benefits of obtaining funding from federal awards, rather than receiving support via your supervisor's research grants?



What are the barriers & problems associated with current scholarship and fellowship opportunities?

