THE UNIVERSITY OF BRITISH COLUMBIA

Submission to the Standing Committee on Science and Research

Government of Canada's Graduate Scholarship and Post-Doctoral Fellowship Programs

The University of British Columbia

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Graduate students and post-doctoral fellows are essential and often overlooked contributors to the Canadian economy and society. For universities like the University of British Columbia, graduate students and post-doctoral fellows are foundational to UBC's academic excellence and research innovation.

Working with established researchers, these young individuals drive discovery, innovation, and technology development, and find new ways of exploring old questions and tackling complex problems. With the knowledge they develop, some graduate students further their careers in academia while the vast majority go on to become leaders and innovators across economic and social sectors.

UBC applauds the Standing Committee on Science and Research for initiating a study on the Government of Canada's Graduate Scholarship and Post-Doctoral Fellowship Programs and is grateful for the opportunity to share our views on how the government can better support graduate students and post-docs and prevent Canada from falling further behind in the global competition to develop and retain highly qualified research talent.

Canada's Graduate Degree Attainment in Context

Canada has led the G7 in terms of post-secondary graduates since 2006, with 57.5% of the working-age population (those aged 25 to 64) having a college or university credential, according to the 2021 Census.

The high number of college graduates is key to Canada's high international standing. Nearly one in four Canadians (24.6%) had a college certificate or diploma or similar credential as their highest level of education in 2021, above all other G7 countries and more than double the share in the United States (10.8%).

Canada was in the middle of the pack in terms of the share of the population with a bachelor's degree or higher (32.9%), placing fourth in the G7 after the United Kingdom (41.3%), the United States (39.5%) and Japan (34.2%).

But when it comes to graduate degrees, Canada lags our international competitors. With a share of graduate degrees at 9.3% (8.2% with a master's degree or equivalent and 1.1% with an earned doctorate) compared to other G7 countries, with an average share ranging from 13% to 15%. And beyond the G7, Canada lags behind many of our peer countries, ranking 28th in the OECD in graduate degree attainment.

Federal Graduate Student and Post-Doc Support

The number of Canada Graduate Scholarships (CGS) awarded has remained relatively stagnant and has not nearly kept pace with demand, and the dollar amount of CGS awards has not changed since 2003. As a result, graduate scholarships in Canada have fallen far behind the increases to the cost of living and have not kept pace with research trainee compensation

trends around the world. During the 2022-2023 fiscal year, master's students received a one-time scholarship of $17,500, while doctoral students received three-year scholarships of $21,000 or $35,000 per year, depending on the discipline. If CGS awards were indexed to inflation, today's master's students would receive over $26,000 and doctoral students would receive over $52,000.

A very small fraction of graduate students and post-docs hold other federal scholarships and fellowships. For example, the Vanier Canada Graduate Scholarship awards $50,000 per year for three years during doctoral studies, but only around 165 are awarded annually for all fields across the country. The Banting Postdoctoral Fellowships program provides $70,000 per year for two years, but only 70 fellowships are awarded annually.

As noted in the *Report of the Advisory Panel on the Federal Research Support System*, most support for graduate students and post-docs is paid through stipends or salaries out of grant funding awarded to supervising professors. Roughly 35,000 trainees are supported indirectly in this way, totaling an estimated $726 million annually. This is almost three times the current annual spending by the granting councils for direct support via their scholarship and fellowship programs. However, since 2022, Canada has lacked a multi-year research investment framework, and the federal granting councils have faced a flatlining and inflation-induced funding reduction. Indexing graduate scholarships is an important step but should not be seen in isolation of the broader research funding context.

Although the proportion of Canadians with a master's degree or doctorate is significantly lower than elsewhere, government-funded graduate scholarships, post-doctoral fellowship programs and the broader federal research support system are straining under pressure to accommodate even the relatively modest growth in the number of Canadian graduate students and post-docs. A challenge further compounded by increases in the cost of living, and compensation trends in other countries. As a result, it has become virtually impossible for some of our most talented students to undertake graduate training here, and they are leaving to pursue opportunities to drive innovation in other countries.

International Context

Comparing the level of funding graduate students and post-docs receive in Canada with other countries can be complicated as tuition, living costs and work arrangements differ. However, the value of scholarships and fellowships offered in peer countries are significantly higher than those available in Canada. For example, US National Institutes of Health post-doc stipends in 2020 began at nearly US$53,000 in the first year, the equivalent of about $70,000 in Canada.

In the U.K., the average base pay for a PhD student is nearly £18,000, or more than $30,000. In the European Union, salaries for PhD students range from about €16,000 ($21,000) in Ireland to nearly €50,000 ($85,000) in Denmark.

At the same time, our peer countries are investing heavily in their broader research support systems, which also provide funding and research opportunities to graduate students and post-docs. Through the CHIPS and Science Act, the US government will invest approximately $200 billion over 10 years in research and commercialization - $80 billion of which is for the National Science Foundation alone (doubling its budget). The UK recently committed to increasing annual public investment in R&D to a record £22 billion. Germany also plans to grow research investment to 3.5% of GDP by 2025 and Finland to 4% of GDP by 2030. China's science and technology funding is also expected to continue to rise, reaching 328 billion yuan (US$48 billion) in 2023.

The BC Context

BC's Labour Market Outlook predicts over one million job openings in the next decade, with 80% of those jobs requiring some form of post-secondary education. Graduates with advanced degrees, and those with interdisciplinary skills, are in growing demand in key sectors and fields that are permeating all areas of the provincial and national economy, including biotechnology, data science, artificial intelligence, advanced manufacturing, and quantum.

Graduate students are also part of a highly skilled workforce that supports and attracts industry and delivers government and social services in British Columbia. They also play critical roles in supporting the province's ability to respond to increasingly complex challenges, such as the climate crisis, in health care, pandemics, and technological change.

Increasing the number of graduate students is essential to increasing BC's social and economic prosperity, and to maintaining BC's competitive position in the knowledge economy. But at the same time, due to the high cost of living in cities like Vancouver and Kelowna, our students face some of the biggest challenges making ends meet on current scholarships and stipends.

The provincial government established its own graduate scholarship program in 2018 and institutions have been attempting to fill the gap by providing discretionary funding to graduate students. During the 2021/22 year, UBC provided graduate students with $50.5 million from internal institutional funding to supplement federal and provincial supports. However, many graduate students in high-cost cities like Vancouver and Kelowna are still under financial stress.

Increased federal funding is needed to better support these researchers and ensure BC has the talent it needs to succeed.

Recommendations

UBC supports an immediate increase in the number and value of federal graduate scholarships and post-doctoral fellowships in Canada. We strongly recommend that the federal government increase the current award amounts of Canada Graduate Scholarships by 50% and double the

number of graduate scholarships. We also encourage the government to consider folding prestigious scholarships and fellowship programs, such as the Vanier and Banting programs, into a consolidated Canada Student Graduate Scholarship program. A consolidated program could support a larger number of graduate researchers at levels that are internationally competitive.

At the same time, it is vital that the government recognize that increasing direct support via federal scholarship and fellowship programs alone will not be enough to prevent our most talented people from leaving the country. Nor will scholarship funding alone be enough to make life affordable for many graduate students that are struggling to make ends meet within Canada.

To adequately support graduate students and post-doctoral fellows and ensure Canada's long-term wellbeing, prosperity, and global competitiveness, UBC urges the government to reinvest in the research granting councils' core programming, which funds the stipends and salaries that the majority of Canada's graduate students rely on for financial support. Specifically, we recommend that the government increase research granting agency funding by 10% annually for five years and balance funding between investigator-initiated and mission-driven research.

Conclusion

Canada's long-term wellbeing, prosperity, and global competitiveness hinges on how well we can support our talented graduate students and post-docs. Their research, innovation and teaching are crucial to seizing opportunities and tackling pressing environmental, technological, social, economic and health challenges.

Countries around the world recognize the essential role of research talent in the global science and innovation race. They are aggressively and effectively recruiting talent, increasingly away from Canada. With growing numbers of researchers being drawn to other jurisdictions with enhanced science and innovation support, Canada is at the cusp of a significant shift in talent.

Stress on Canada's research support system continues to grow and current government funding will not prevent Canada from falling further behind in the global competition to develop, retain and recruit highly qualified talent. UBC urges the federal government to increase support for graduate students and post-docs via federal scholarship and fellowship programs and the granting councils.