



About 'The Graduate Education & Public Good Report

Timeline

Researching and Writing: December 1, 2020 – March 31st, 2021

Preparing for Publication (Graphics and Formatting): April 1, 2021 - April 30, 2021

Final publication date: April 30th, 2021

Document Outline (tentative and subject to change based on available information)

1. Introduction section: who are graduate students, what do they do and how are they distinct from undergraduates (demographic, teaching role, research role, etc.)
2. How does graduate education contribute to the public good?
 - a. At the Federal level
 - b. At the Provincial level (**See sample writing #1**)
3. How does graduate education improve our quality of life?
 - a. Creating the workforce for the advanced global economy (**See sample writing #2**)
 - b. Conducting ground-breaking research
 - c. Facilitating technology transfer
 - d. Developing entrepreneurs and innovators
 - e. Preparing future college and university faculty
 - f. Developing leaders for business, non-profit, and government sectors
 - g. Preparing the K-12 teacher workforce
 - h. Establishing new start-ups that create jobs
 - i. Strengthening communities through social action
 - j. Promoting public health initiatives: provide examples
 - k. Enhancing society through arts, humanities, social sciences
4. How do International Students Contribute to a Prosperous Canada? (fostering global dialogue and creating global partnerships)
5. What is the reach and impact of Canadian Graduate Education?



Sample Writing #1

Graduate Education and the Public Good: Creating the Domestic Workforce for the New Global Economy

Graduate programs at Canadian Universities “produce the advanced Master’s and PhD degree holders who can contribute breakthrough ideas that can ensure companies stay at the cutting edge of R & D [research and development]”¹. Graduate students are therefore imperative in maintaining Canada’s well-rounded workforce while expanding the global economy as the leading experts in a wide variety of disciplines serving different niches in society.

A significant proportion of the highly skilled individuals working across all sectors in Canada’s workforce were international students at Canadian post-secondary institutions. In 2014, 42,841 Master’s and 11,417 PhD students enrolled in graduate programs in Canada were international students². Not only do international graduate students contribute to cutting-edge research that has practical applications in solving the most pressing issues of our day, international students also strengthen the national economy. In 2015 and 2016, \$10.5 billion and \$12.8 billion added to Canada’s GDP can be attributed to international tuition and international student spending³. In addition, those who have earned a master’s degree, or a PhD are estimated to earn an income of 15% higher than those who hold bachelor’s degrees⁴, and therefore have a higher taxable income.

Graduate education fosters productivity in Canada’s workforce by training highly skilled and efficient workers⁵. The propensity of international students in graduate programs at Canadian post-secondary institutions contributes to Canada’s competitive edge in innovation. International education encourages the advancement of international perspectives, thus fueling the “global marketplace”⁶.

Some of the most innovative developments made in the Canadian workforce are those based in Science, Engineering, Technology and Mathematics (STEM). Graduate students make significant contributions to

¹*International Education: A Key Driver of Canada's Future Prosperity* [PDF]. (2012, August,78). Advisory Panel on Canada's International Education Strategy.

² Global Affairs Canada, “Assessing the Economic Impact of International Students in Canada,” GAC, November 22, 2017, <https://www.international.gc.ca/education/report-rapport/impact-2016/sec-4.aspx?lang=eng>.

³ Global Affairs Canada, “Economic Impact of International Education in Canada – 2016 Update,” GAC, November 22, 2017, <https://www.international.gc.ca/education/report-rapport/impact-2016/index.aspx?lang=eng>.

⁴ Grant, Michael. *The Economic Impact of Post-Secondary Education in Canada*. Ottawa: The Conference Board of Canada, 2014

⁵https://cags.ca/documents/publications/reports_and_submissions/CAGS%20productivity%20and%20competitiveness.pdf

⁶*ibid* (page 2)



STEM fields, particularly international students, as over 60% graduate from STEM related programs⁷. These graduates are producing fundamental work to address conflict and create new jobs in STEM for future generations.

Figure 1 from the Higher Education quality Council of Ontario (HEQCO) illustrates the distribution of disciplines PhD graduates from Ontario institutions lead upon graduation⁸. As indicated on the chart below, graduates of PhD programs contribute to a diverse range of disciplines, thus shaping the future of each field. Their expert contributions will lead to greater innovation, development, and education in the professions they select.

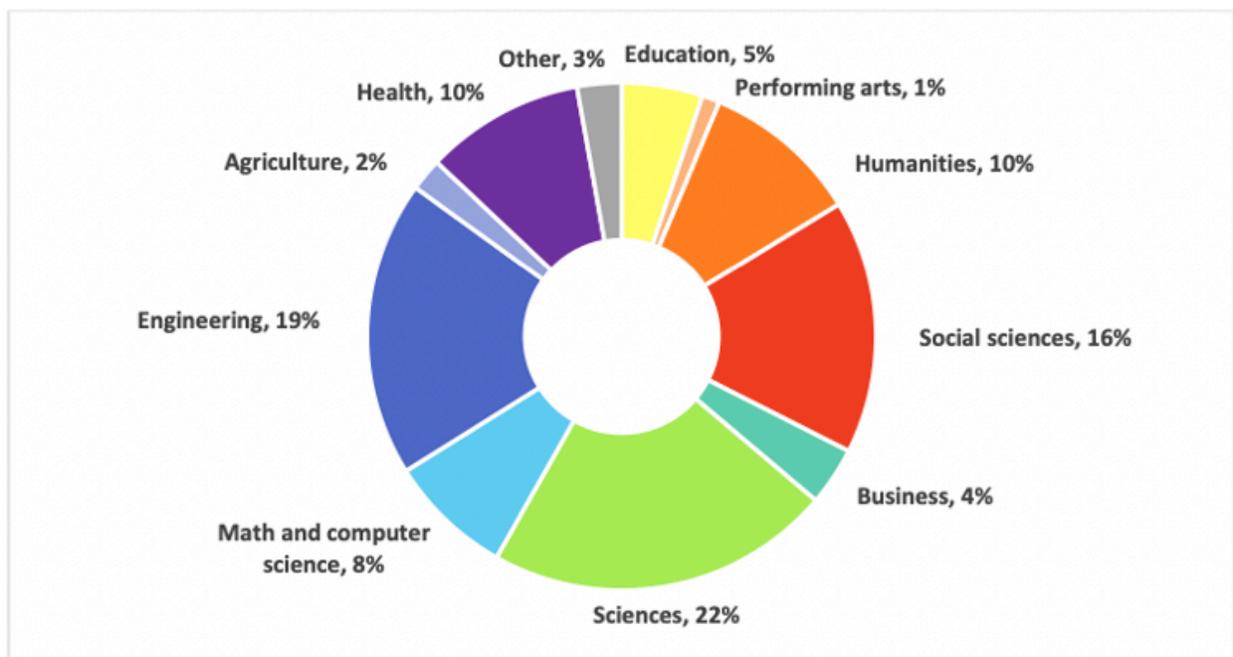


Figure 1 Source: Higher Education Quality Council of Ontario (HEQCO), 2016

Example of Graduate Students Leading Canada's Workforce and Global Economy

⁷ "Some Assembly Required: STEM Skills and Canada's Economic Productivity." Ottawa: Council for Canadian Academics, 2015.

⁸ Jonker L. (2016). *Ontario's PhD Graduates from 2009: Where are they now?* Toronto: Higher Education Quality Council of Ontario.



University of British Columbia: Research produced at the university of British Columbia “is a significant driver of economic growth”⁹. In the University’s PhD Career Outcome report, it is stated that 60% of graduates in doctoral programs start their own companies¹⁰. 80% of these companies are based in Canada, 64% of those within the province of British Columbia¹¹. Students take their findings and turn them into business endeavours that benefit the nation as a whole.

Sample Section #2

Graduate Students in Addressing the Most Pressing Local Issues

In this section, we highlight the tangible ways in which graduate students have addressed the most pressing provincial and territorial issues of our day. As described below, graduate students have contributed to the solutions of complex problems by employing innovative approaches to research and development both during and after their studies. Canadian society is therefore dependent on the output of graduate students in tackling urgent local issues.

British Columbia: Wildfires

In the summer of 2017, British Columbia experienced record-breaking wildfires causing irreversible damage to over 1.2 million hectares of land¹². \$649 million was spent on controlling the fires between July and September 2017, leaving 65,000 people forced to evacuate from their homes¹³. The 2017’s wildfire season was the longest duration of time the province had ever sustained a State of Emergency due to wild fires¹⁴. The following year in 2018, wildfires exceeded 2017 records, leaving 1.35 million hectares of land burned, thus displacing thousands more people from their homes¹⁵. Approximately \$615 million was spend on the control of the fires in 2018.

The extent of forest loss due to wildfires is extremely threatening to the province’s economy. The British Columbian economy is reliant on the forestry industry, with 90% of all exports from the province

⁹ Porter, Susan, Louise Mol, Jens Locher, and Melinda Johnston. “UBC PhD Career Outcomes Graduates from 2005-2013 UBC Vancouver Campus.” Vancouver: University of British Columbia, 2017, 23

¹⁰ *ibid*

¹¹ Porter, Susan, Louise Mol, Jens Locher, and Melinda Johnston. “UBC PhD Career Outcomes Graduates from 2005-2013 UBC Vancouver Campus.” Vancouver: University of British Columbia, 2017.

¹² BC Wildfire Service, “Wildfire Season Summary,” October 8, 2020, <https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-history/wildfire-season-summary>.

¹³ *ibid*

¹⁴ *ibid*

¹⁵ Government of Canada, Statistics Canada, May 29, 2019), <https://www150.statcan.gc.ca/n1/pub/16-508-x/16-508-x2019002-eng.htm>.



being from forestry output¹⁶. In 2017 alone, the province exported \$9.7 billion in lumber, and \$4.4 billion in paper goods¹⁷. The forests are therefore essential to protect in order to maintain economic stability in the province.

In addition, wildfires pose a severe threat on the wellbeing of people in British Columbia. Communities have been forced to uproot their lives due to fire hazards and/or loss of community infrastructure. Human health can also be compromised by inhaling smoky air with a high concentration with pollutants.¹⁸ It is critical to remember that the effects of wildfires are far reaching. Even if wildfires remain localized, the air quality becomes jeopardized across the province and beyond.

Graduate students across the province have identified wildfires as a critical issue that must be addressed and supported by post-secondary institutions. Sarah Dickson-Hoyle for example, a PhD candidate at the University of British Columbia has devoted her research to finding solutions and management practices to wildfire mitigation. Sarah is working collaboratively with the Secwepemcúl'ecw Restoration and Stewardship Society, an organization comprised of eight Secwepemcúl'ecw communities who were severely impacted by the 2017 wildfires¹⁹. Sarah's interdisciplinary approach to research weaves together "ecological and quantitatively social science methodologies" with Secwepemcúl'ecw traditional stewardship practices to predict, prevent, and manage wildfires in the province. Her focus on community participation will be used to minimize community disruption due to fires in the future while ensuring that damage to the province's most valuable natural resource is insignificant.

¹⁶ "Forestry," Trade and Invest BC, accessed October 27, 2020, <https://www.britishcolumbia.ca/buy/goods-and-services/forestry/>.

¹⁷ *Ibid*

¹⁸ "Wildfires and Your Health," HealthLink BC, September 16, 2020, <https://www.healthlinkbc.ca/health-feature/wildfires>.

¹⁹ "Sarah Dickson-Hoyle: Wildfire as a Catalyst for Co-Management: Indigenous Knowledge, Stewardship and Restoration of (Post)Fire Landscapes in British Columbia," UBC Graduate Studies, accessed October 27, 2020, <https://www.grad.ubc.ca/campus-community/meet-our-students/dickson-hoyle-sarah>.