



2023

5

ON PERFORMANCE INDICATORS IN POST-SECONDARY EDUCATION



FUNDING FOR SUCCESS **POST-SECONDARY EDUCATION IN BC**

**Brief 5 of 6 in a series by the
Confederation of University Faculty
Associations of British Columbia (CUFA BC)**

On Performance Indicators in Post-Secondary Education

Part of the "Funding for Success: Post-Secondary Education in BC" Series 2023

Acknowledgements

CUFA BC would like to thank the following individuals who contributed to this publication:

Annabree Fairweather, Executive Director

Dr. Daniel Laitsch, Past President

Research Consultants: J. Hollingsworth and N. Mazur


We would also like to thank CUFA BC's Executive Committee, Council members, and subject experts who provided input and feedback.



Permissions

Copyright © 2023 CUFA BC, All rights reserved.

This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-nc-sa/4.0/) (CC BY-NC-SA 4.0).


**Attribution-
NonCommercial-
ShareAlike 4.0
International
(CC BY-NC-SA 4.0)**

Attribution: Users may copy and redistribute the material in any medium or format under the following terms: You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

NonCommercial: You may not use the material for commercial purposes.

ShareAlike: If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original.

Performance Indicators

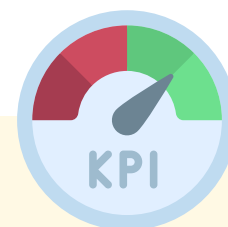
GRADING PSIs IN BC & CANADA

INTRODUCTION

Funding models across the country and elsewhere have increasingly focused funding efforts on institutional outcomes. A major selling point of these models is their purported ability to improve post-secondary institutional performance. In the case of performance indicators, including performance-based funding models, targeted funding on key parameters doesn't necessarily improve outcomes in the way they set out to do, and often results in unintended consequences that undermine the original goal.

Often what is overlooked in these myopic systems are the generational dividends that more than compensate for the short-term cost of post-secondary education. Post-secondary graduates that earn higher incomes pay more taxes and participate in higher rates in the labour force creating a "virtuous circle" where adequately funding higher education today promotes the ability to fund it in the future, if those returns are properly reinvested.

In this section, we examine existing institutional performance on current common outcomes to understand their conditions and interrogate their relevance.



TAKE AWAY

In the international context, Canada performs very well on post-secondary educational attainment of the adult population having the highest adult educational attainment among the 37 member nations of the Organisation for Economic Cooperation and Development (OECD).

Canada's strength in post-secondary education is primarily due to greater levels of attainment of short-cycle college education. This level of attainment is particularly notable in BC, where many certificates and diplomas typically offered at colleges are also offered at the university level. There has been a trend of similar offerings between colleges and universities, resulting in potential competition across these sectors for resources, students, and external partners.

The BC government currently gathers data about post-secondary institutions and student outcomes to monitor and support institutional performance. Key performance outcomes currently measure enrolment targets, student satisfaction, research intensity, post-graduate employment rates, and more.

For BC's research universities, data trends show they outperform on many performance indicators within a robust post-secondary system. From the inside, however, class sizes have increased as faculty hiring stagnates and a higher proportion of courses are delivered by contract faculty. Students graduate having little chance to form a relationship with a tenured professor, and can only go to sessional instructors for letters of recommendation for future job prospects or to continue into graduate school.

Post-secondary graduates who hold a university degree at the bachelor's level or above earn a significant wage premium over the average employment earnings of secondary school graduates. They also earn more than other post-secondary credentials like those with certificates below the bachelor's level.

Performance Indicators

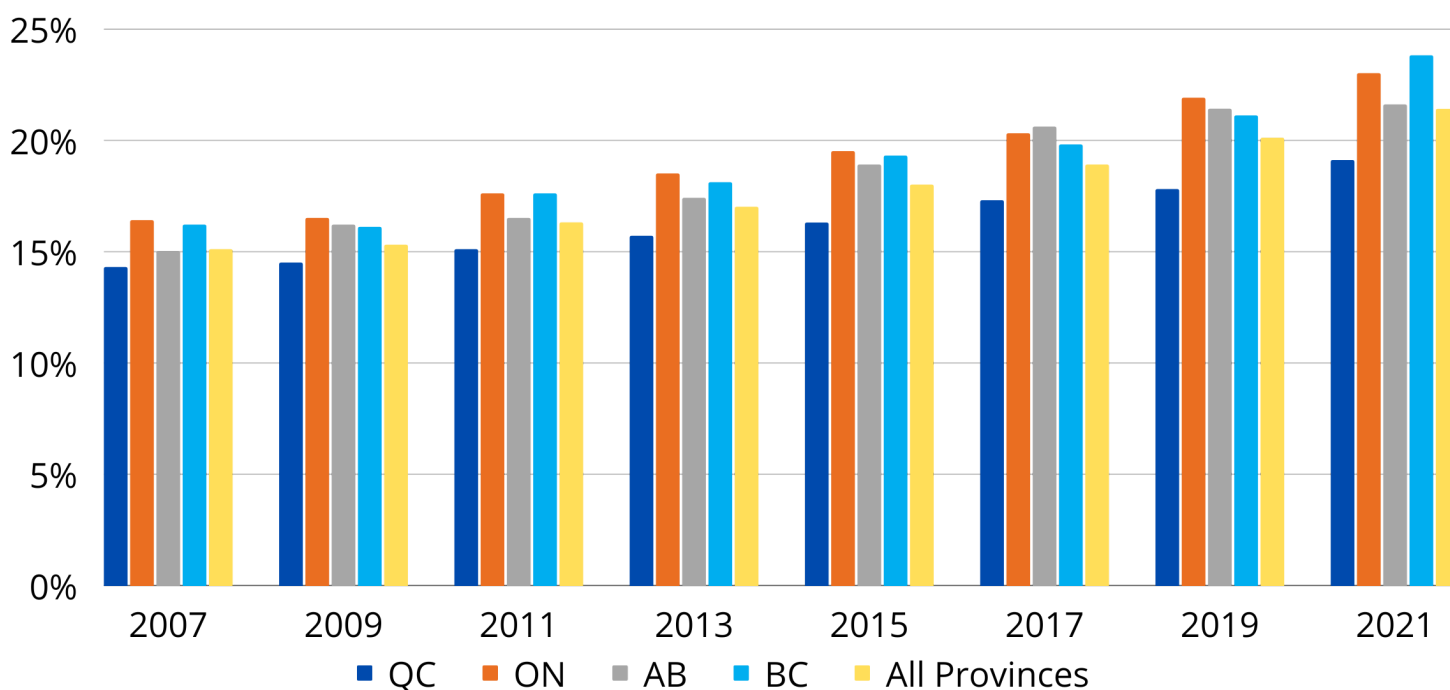
FACTS & FIGURES

EDUCATIONAL ATTAINMENT

BC's educational attainment rate is high among adults over 25 years of age. Higher educational attainment is strongly associated with higher employment rates and income, particularly for those holding a university degree at the level of bachelor's or above.

- Canada was top among the 37 member nations of the Organization for Economic Cooperation and Development (OECD) for adult educational attainment with a rate of 59% in 2019.
- In 2021, educational attainment in BC remained the second highest of any province with 34.7% of the population holding a bachelor's degree or above.
- Across all of the provinces, university educational attainment rates grew steadily over the 2006-2021 period. Of those aged 25+, the proportion of bachelor's degree holders increased from 14.7% to 21.4%, and degree holders above bachelor's increased from 6.8% to 10.4%. College-level educational attainment has stabilized at 34.7% of the population aged 25 and older.
- Employment rates and employment income tend to increase with higher levels of educational attainment. According to the most recent available census data, university certificate or degree holder at the level of bachelor's or above has a significant "wage premium", earning 98.2% more than secondary school graduates and about twice as much or more than those with certificates and diplomas under the level of bachelor's.
- PSE graduates that earn higher incomes pay more taxes and participate at higher rates in the labour force.
- Unemployment rates generally decline by level of educational attainment, contributing to a basic economic interest for governments to promote access to – and properly funding – higher education.

Figure 1. Population Aged 25+ with Bachelor's Degree, Selected Provinces, 2007-2021



Performance Indicators

FACTS & FIGURES

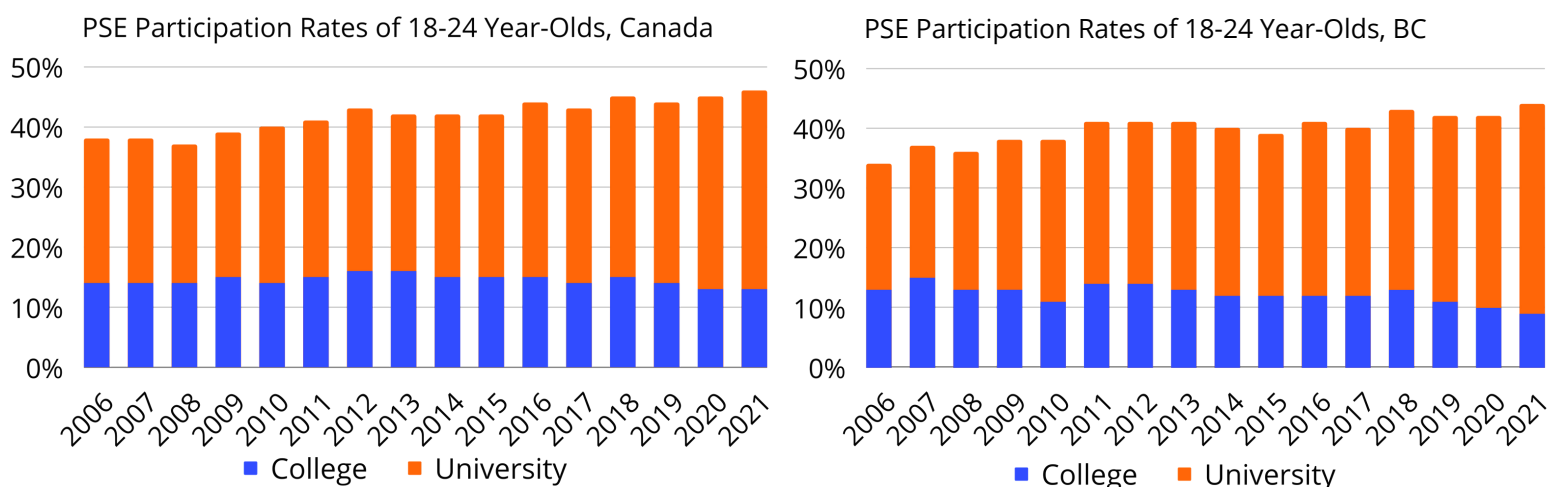
STUDENT DEMOGRAPHICS & PARTICIPATION RATES



Post-secondary participation rates have increased in BC to 44% in 2021 up from 34% in 2006. However, the participation rate remains lower than the national average (46%). The participation rate for 18-24 year-olds in BC universities is higher than the Canadian average, while being significantly lower for colleges.

- The vast majority of undergraduate-level students remain those aged 18-24, though there are increasing enrolments for those aged 25+.
- Of the 18-24 year-old population of BC, about 35% are enrolled in a university program today on either a part-time or full-time basis compared to 21% in 2006. The participation rate of 18-24 year-olds in BC college programs has gradually declined from a peak of 15% in 2007 to a level of 9% in 2021. Compared to Canada as a whole (13%), BC today has a lower rate of college participation for this age group while having a higher rate of university participation (35% vs 33%). National and provincial demographic changes indicate a general decline in the population of 18-24 year-olds from 9.6% in 2006 (9.5% in BC) to 8.7% (for both) by 2022.
- Of the 25-29 year-old population of BC, about 8% participate in university and about 3% participate in college.
- Of the 30-34 year-old population of BC, about 3% were enrolled in university programs and approximately 2% enrolled in college programs.
- In BC, most applicants and enrolments predominantly come from within the province and often attend a regional institution. Enrolments for out-of-province and international students are increasing in BC. Four of five research universities (excepting RRU) witnessed an increase in out-of-province Canadian domestic enrolments from 9.7% in 2006 to 15% of all enrolments by 2021, while international student enrolments more than doubled over the same period from 8.4% to 20.2%.

Figure 5.2. Participation Rate of Population Aged 18-24 in College and University Programs, Canada and BC, 2006-2021



Performance Indicators

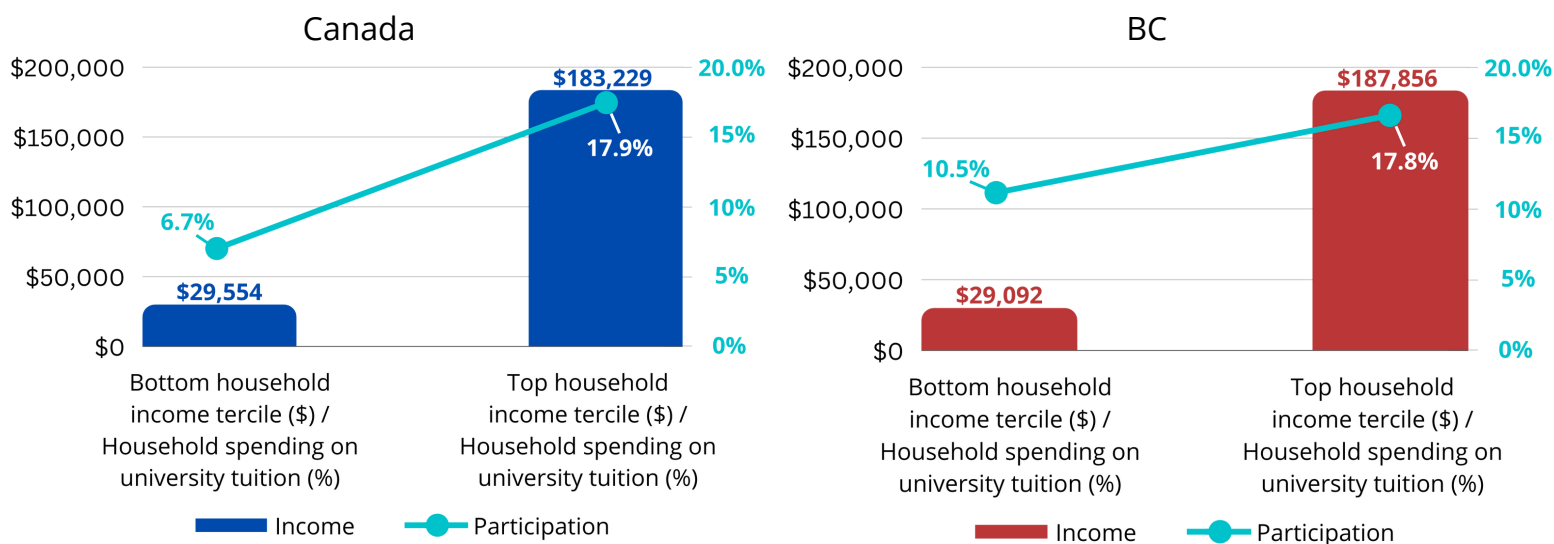
FACTS & FIGURES

STUDENT DEMOGRAPHICS & PARTICIPATION RATES

In BC, there is higher participation in post-secondary education among low- and middle-income families compared with other provinces, suggesting historic investments have created more equitable access to education.

- It is generally the case that access to PSE across income strata remains unequal across Canada. The Office of the Federal Parliamentary Budget Officer has estimated that 60% of post-secondary students in Canada were from the two uppermost income quintiles of families.
- Access to PSE and university programs by all income strata is an important indicator of system performance. Over time, a well-performing system should see both rising levels of PSE participation among lower-earning income groups and a shrinking gap between participation rates at the bottom and the top of income groups. In this area, BC research universities appear to be performing well.
- The accessibility of PSE to students of different income brackets has been a notable theme of discussion for BC's government, and their efforts have paid off. Custom data from Statistics Canada's *Survey of Household Spending* for expenditures on university and other postsecondary tuition by household income tercile suggests that BC has outperformed the average Canadian rate of participation of lower and middle household income terciles in PSE.
- Data from 2010-2019 on households with expenditures on PSE by household income terciles show that BC has consistently exceeded the participation rate for lower- and middle-income households compared to Canada. In 2019, BC had a university participation rate of 10.5% for the bottom tercile of households, while Canada-wide, the rate was only 6.7%.

Figure 3. Average Income Pre-Tax of Bottom and Top Household Income Terciles and Spending on University Tuition, Canada and BC, 2019



Performance Indicators

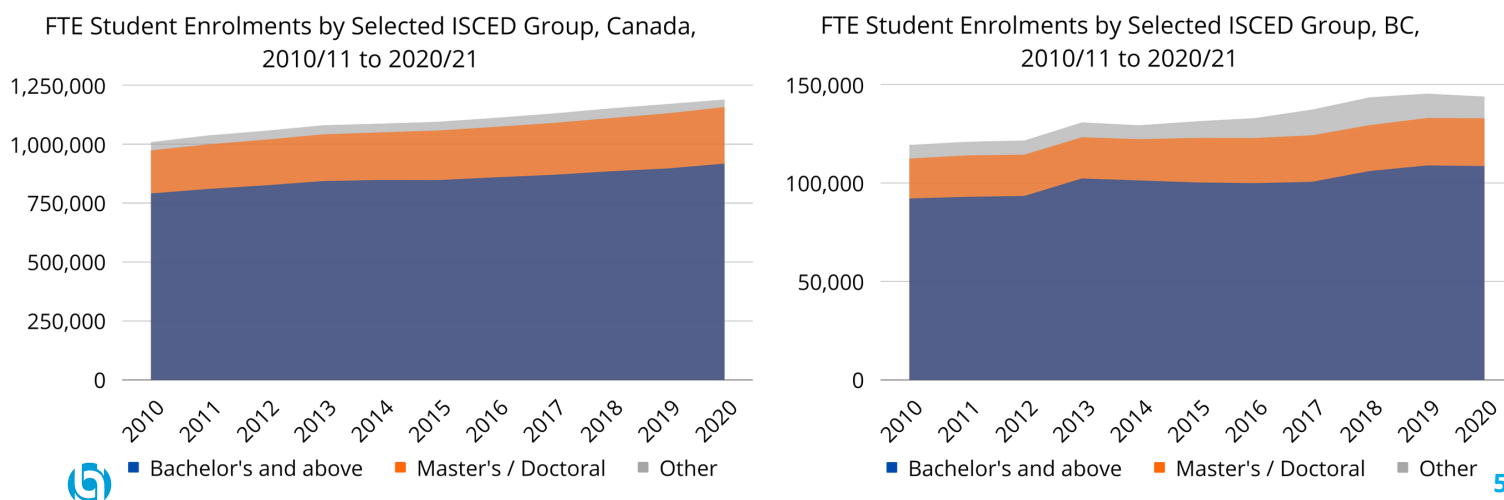
FACTS & FIGURES

ENROLMENT

BC has seen high increases in FTE university enrolment, largely attributed to a significant increase in international student enrolments and the reclassification of institutions previously in the college sector to special purpose teaching universities. While governments and administrators add layers to the narrative, it is clear that the primary motivations for expanding international student enrolments are economic.

- FTE enrolment in BC universities has increased by more than 20% over the last decade, the third highest rate among the provinces. Most of this enrolment growth came from international students. By 2020, there were 143,900 FTE enrolments.
- Canadian undergraduate FTEs in BC universities grew by only 4.6% over 2010-2020 (ending the period at 773,618.1), while international FTEs grew by 125.3% in the same time (ending the period at 83,292.4). Data from 2006-2020 shows growth of 34.6% in Canadian graduate program enrolments, with growth of 16.3% in BC. For international graduate students, these values were 177.8% and 85.5% respectively.
- In 2020, Canada had a higher proportion of international students enrolled in tertiary education than Germany, Japan and the United States. The top three source countries of international students were China (27.1%), India (26.6%) and France (6.3%).
- International students tripled their proportion of all post-secondary students in Canada over 2000/01 to 2017/18, increasing from 5% to 15%. In 2020, Canada was well-above the OECD average for short-cycle post-secondary education (24% vs. 5%), but also consistently above the OECD average for bachelor's, master's and doctoral enrolments. After Ontario at 191,886, BC had the second-highest number of international post-secondary students among the provinces at 64,758 in 2020. However, BC also had the highest proportion of international student post-secondary enrolments in Canada, about 23%, and the most rapid rate of growth in this part of the student population, which more than tripled since early 2000.
- In 2020, in spite of the suspension of in-class instruction, BC managed to maintain much of its international student enrolments, with some exceptions. Almost half of tuition fee revenues now come from international students, although they make up only 20% of the student body.

Figure 4. FTE University Student Enrolments by Selected International Standard Classification of Education (ISCED) Group, Canada and BC, 2010-2020



Performance Indicators

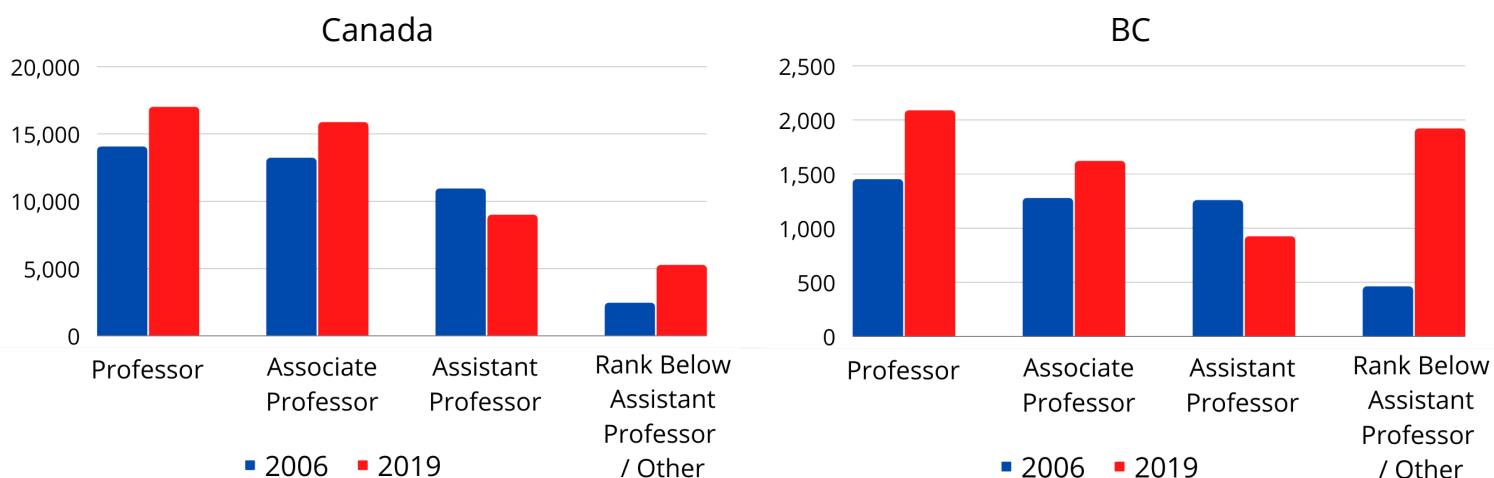
FACTS & FIGURES

FULL-TIME FACULTY AND HIRING TRENDS

Hiring rates for full-time faculty are relatively stagnant in Canada and BC. The largest growth in faculty hiring took place in late 2000s and was largely attributed to the reclassification of institutions previously in the college sector to special purpose teaching universities. Since that shift, the largest area of growth is seen in ranks below Assistant Professor with 69.9% growth in BC and 33.3% growth nationally.

- The number of full-time faculty has grown slowly over the past decade, even as enrolment has rapidly increased. Faculty ranks grew by only 11.2% (657 positions) in BC and only 5.7% (2,541 positions) nationally.
- National data for universities and degree-granting colleges shows growth of 103.3% in salaries and benefits for administration and academic support functions over 2006/07 to 2020/21, while academic salaries as a share of total funds grew by only 70.3%. Academic salaries made up 47.3% of total expenditures on salaries and benefits in 2006/07, declining to 45.5% by 2020/21.
- In BC, these trends were more pronounced. Salaries and benefits for administration and academic support functions grew by 140.1%, while academic salaries grew by 78.5%. Academic salaries began this period at 48.6% of total salaries and benefits expenditure while ending it at 44.2%.
- Universities have increasingly restricted their hiring of new academic staff, particularly tenure-track positions. Full-time faculty numbers are largely stagnant as enrolments rise. Nationally, the number of assistant professors declined by 17.9% since 2006. In BC, assistant professors declined by 26.6% over that time. The number of positions below assistant professor (including full-time lecturers, instructors, and other teaching staff) grew from about 10% of full-time faculty appointments in 2006 to about 30% by 2019.
- Both Canada and British Columbia showed a high level of growth in the number of full-time faculty over 2008/09 to 2009/10. In British Columbia, this was due to the re-establishment of five college sector institutions as special purpose teaching universities in 2008, moving significant numbers of students and faculty out from the college and into the university sector. Over half (52.6%) of the growth in the numbers of full-time faculty across Canada over 2008-2009 was attributable to the changes in British Columbia.

Figure 5. Full-Time Faculty Numbers by Rank from 2006 and 2019, Canada and BC



Performance Indicators

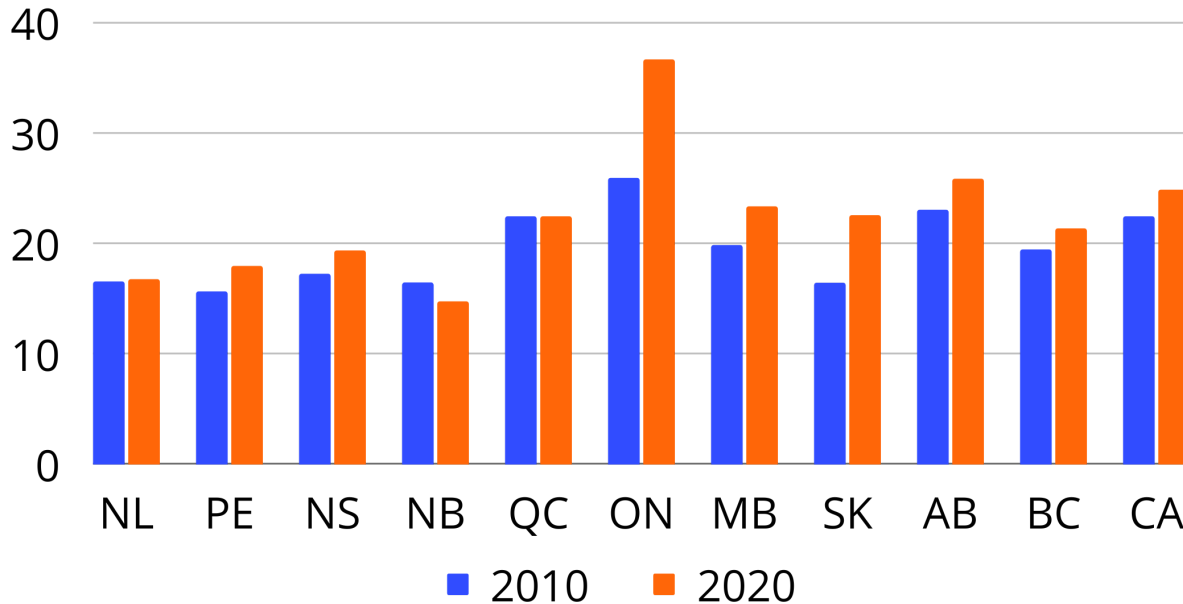
FACTS & FIGURES

FACULTY-STUDENT RATIOS AND CLASS SIZES

Hiring rates for full-time faculty are relatively stagnant, and more pronounced when compared with the significant increase in student enrolments. Class sizes are increasing to compensate for these hiring decisions.

- Comparing FTE university enrolment growth rates from 2010 to 2020, Canada had a 17.8% growth rate, BC had a 20.6% growth rate, while the labour force grew by 8.1% in Canada and by 14% in BC over the same period.
- Full-time faculty to FTE student ratios in British Columbia grew by nearly 14% since 2010, from 19.4 FTE students per full-time faculty member in 2010 and steadily rising to a peak of 22.2 in 2019 before declining in 2020 to 21.3. Both BC and Canada witnessed growth of about 10% in the size of this ratio.
- Student class sizes have increased in BC's research universities with undergraduate class sizes reaching an average of 60-70 students for UBC, 30-40 at SFU and UVic, and around 25 at UNBC. The ranges of class sizes vary significantly, from low tens to hundreds.

Figure 6. Full-time Faculty to FTE Students, Canada and the Provinces, 2010 and 2020



Performance Indicators

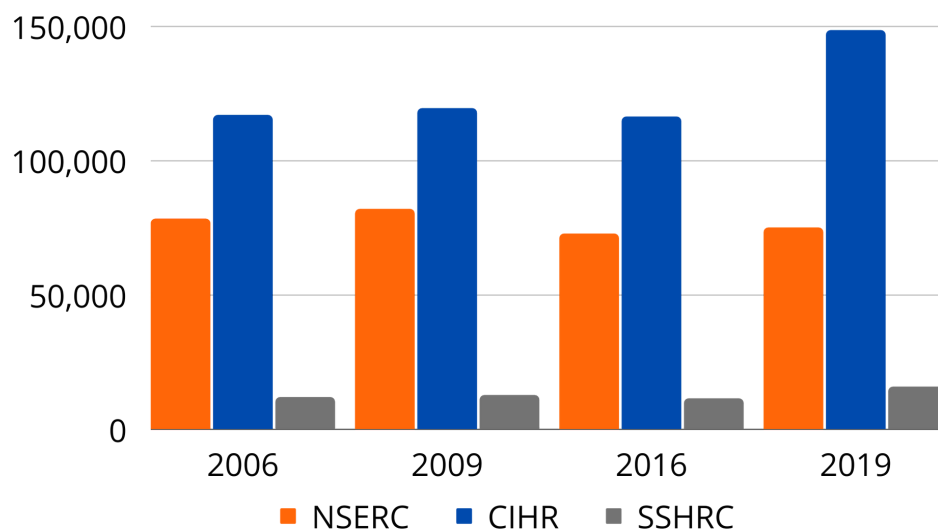
FACTS & FIGURES

RESEARCH INTENSITY

Research is underfunded in BC and Canada, and shows a downward trend, which has impacted universities' abilities to support faculty research needs, particularly the indirect and capital costs of research. It also affects much needed graduate student research support, which is relied on to support research programs in universities. Larger research universities receive a greater share of research funding compared with smaller research institutions. Recent funding prioritization in academic disciplines favours STEM disciplines over non-STEM ones like the social sciences, humanities, and fine arts.

- Despite demand for research, Canada lags behind other OECD countries in terms of research intensity as measured by the expenditure on research and development as a percentage of GDP. This lag impacts universities' abilities to fund research, particularly indirect costs and capital.
- Meanwhile, federal Tri-Council funding has remained relatively stagnant since 2006. As grant applications have increased, the rate of success has decreased, with only 15% of submitted applications receiving funding.
- Nationally, the proportion of faculty by disciplinary groups corresponding to the mandates of NSERC, CIHR and SSHRC were fairly constant over the 2006-2019 period. SSHRC-related disciplines comprised about 54% of full-time faculty, NSERC-related disciplines accounted for about 30% of faculty, and CIHR-related disciplines accounted for about 17%.
- The amount of federal granting council funding per full-time faculty member in SSHRC-related disciplines (\$15,794 in 2019) remains about one-tenth of the equivalent per full-time faculty member in CIHR-related ones (\$148,441), and about one-sixth of the NSERC-related disciplines (\$75,006).
- BC's total domestic expenditures on research and development as a share of GDP improved over the 2006-2018 period, rising from 1.3% to 1.5%, while Canada's declined from 1.9% to 1.6%. Both Canada and British Columbia are well below the OECD average, which has also steadily increased over time, from 2.1% in 2006 to 2.5% in 2019.
- The largest institutions in Canada typically receive nearly a quarter of all the available research funds. This presents an unbalanced funding pot that favours larger institutions.

Figure 7. Federal Granting Council Funding Per Full-time Faculty Member in Related Disciplines (\$ 2019)



Performance Indicators

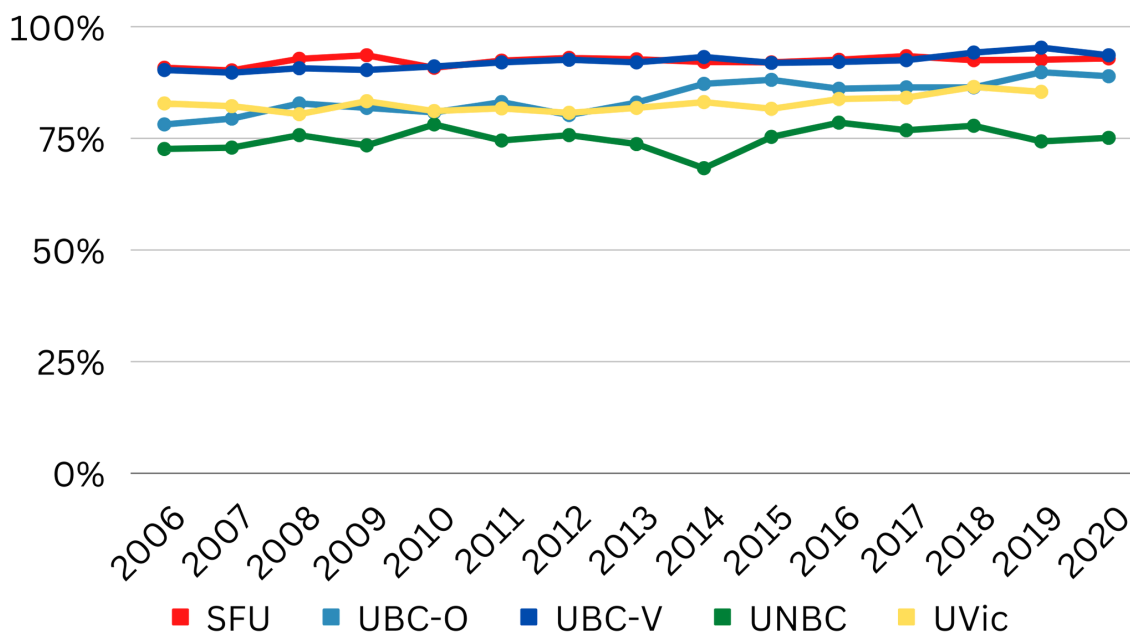
FACTS & FIGURES

STUDENT RETENTION, DROP-OUT, AND GRADUATE RATES

BC performs well in terms of student retention rates, though students may take longer than four years to complete a bachelor's program.

- On an international scale, Canada does well on student retention with a near majority (42%) of Canadian students graduating in four years from a bachelor's degree or equivalent program. About 32% of students take longer than four years and 13% left without graduating.
- In BC, about 29% of students graduate from a bachelor's program in four years while another 16% left without graduating.
- Unemployment rates are typically lower for those with an advanced education. This becomes especially pronounced in times of higher overall unemployment. In 2021, the unemployment rate of Canadians with a degree above bachelor's was 4.5%, with bachelor's degree holders having an unemployment rate of 5.0%. Holders of post-secondary certificates and diplomas below the bachelor's level had an unemployment rate of 6.5%, while secondary school graduates who didn't have a PSE credential had an unemployment level of 8.2%. The percentages in BC were comparable to national averages, with lower overall levels of unemployment.
- Prior to the pandemic, the proportion of 25-29 year-olds Canadians Not in Employment, Education or Training (NEET) ranged from 48% for those with less than an upper secondary education to 21% for those with upper secondary and post-secondary non-university, to 12% for those with a post-secondary university education. The percentages in BC were slightly below the national average.
- By 2020, more of the Canadian population aged 18-24 were in school (49%) compared to those who transitioned to the labour market and were employed (38%). The percentages in BC were slightly below the national average.

Figure 8. Year 2 Retention Rates at BC Research Universities (not RRU), 2006-2020



Note: UVic data missing for 2020/21

Performance Indicators

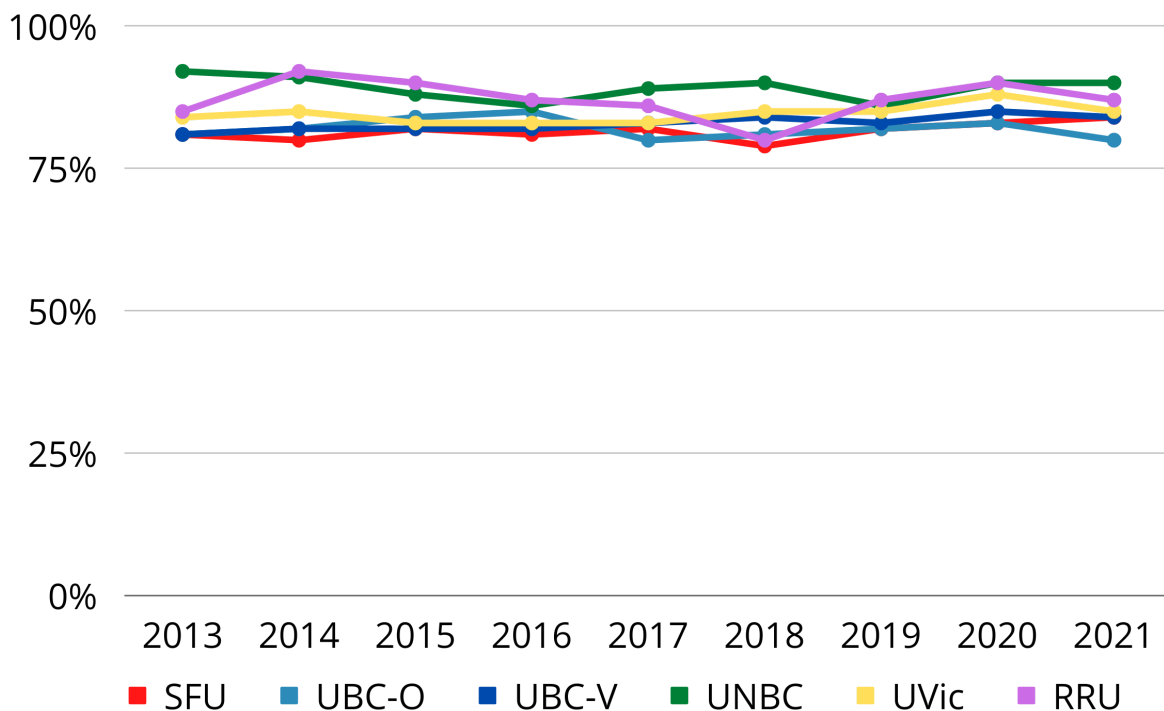
FACTS & FIGURES

STUDENT SATISFACTION

Students are generally very satisfied with the quality of education they receive and the resources available on campus.

- Data from the Canadian Undergraduate Survey Consortium (CUSC) shows that at participating BC institutions (including the University of Northern British Columbia, Simon Fraser University and the University of Victoria), students are generally satisfied with the quality of instruction they receive throughout their first-year, middle-years, and upon graduating.
- Nine out of ten students that responded to the CUSC 2020 Middle-Years Student Survey reported that they were satisfied with their decision to attend their university. Most recently, 89% of the 2022 First-Year Student Survey respondents were similarly either satisfied (67%) or very satisfied (22%). For graduating students responding to the 2021 Graduating Student Survey, 86% were satisfied (66%) or very satisfied (20%) at the overall quality of education received at their university.
- Among the most recent cohort of first year students in 2022, there is a high rate of satisfaction with facilities of services (other than parking), ranging from a low of 69% for food services to a high of 96% for on-campus library facilities. At 95%, library electronic resources, athletic facilities, other recreational facilities and on-campus bookstores also scored quite highly.

Figure 9. Student Satisfaction with the Usefulness of Skills Learned in University to the Workplace for BC's Research Universities, 2013-2021



Performance Indicators

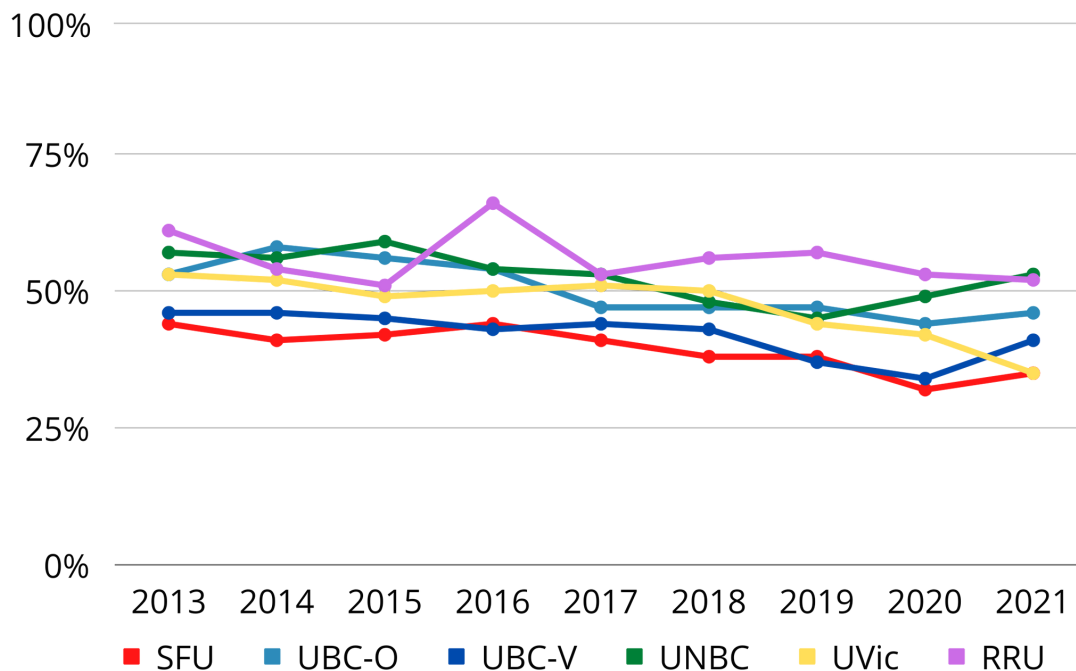
FACTS & FIGURES

STUDENT FINANCES AND DEBT

Less than half of undergraduate and graduate students carry debt, mostly in the form of government loans. The student aid system has increased student aid packages in the last two decades, and there are more grants now than loans in comparison to past practices. Education-related debt remains largely stable over time though reported at significant levels over \$20,000.

- Student debt has been fairly stable since the 2000s.
- The amount of money given in financial aid to individual Canadians has nearly tripled over the past 25 years, accounting for inflation.
- The Canadian student aid system is less loan-based and more grant-based than ever, and aid packages have increased over the past two decades.
- The 2021 CUSC survey shows that nationally, almost half (46%) of undergraduate students are graduating with significant amounts of debt. For those reporting debt, the amount owing almost \$30,000, mainly in the form of government loans.
- On average, the cost of financing a typical academic year is just over \$17,000, relying on family (49% in 2021), employment (summer, 34% or current, 43%), and government loans (45%).
- Of first year students in 2022, 74% agreed with the statement that they had sufficient finances to complete their educational program.
- Of first year students in 2022, 61% reported that they received a financial award from their university, with one third of those reporting that they would not have been able to attend university without it.

Figure 10. Percentage of Students at BC's Research Universities that Incurred Debt During their Studies, 2013-2021



About CUFA BC



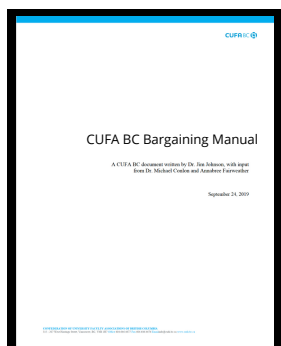
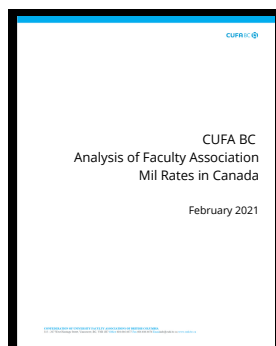
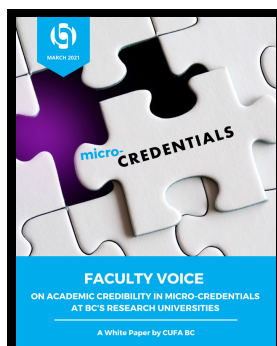
The Confederation of University Faculty Associations of British Columbia (CUFA BC) represents more than 5,500 faculty members (professors, lecturers, instructors, and academic librarians) through their unionized faculty associations at five research-intensive and doctoral universities in British Columbia: University of British Columbia, University of Northern British Columbia, University of Victoria, Royal Roads University, and Simon Fraser University.

For over fifty years, CUFA BC has promoted the value of post-secondary education and research in British Columbia. We advocate for the interests of members on a variety of issues affecting post-secondary education, including academic freedom, collegial governance, labour rights, and funding.

In this series:

<p>1 INTRODUCTION TO THE SERIES</p> <p>FUNDING FOR SUCCESS POST-SECONDARY EDUCATION IN BC</p>	<p>2 MEET BRITISH COLUMBIA'S RESEARCH UNIVERSITIES</p> <p>FUNDING FOR SUCCESS POST-SECONDARY EDUCATION IN BC</p>	<p>3 AN OVERVIEW OF BRITISH COLUMBIA'S POST-SECONDARY FUNDING</p> <p>FUNDING FOR SUCCESS POST-SECONDARY EDUCATION IN BC</p>	<p>4 ON REVENUE & EXPENDITURES AT BC'S RESEARCH UNIVERSITIES</p> <p>FUNDING FOR SUCCESS POST-SECONDARY EDUCATION IN BC</p>	<p>5 ON PERFORMANCE INDICATORS IN POST-SECONDARY EDUCATION</p> <p>FUNDING FOR SUCCESS POST-SECONDARY EDUCATION IN BC</p>	<p>6 RECOMMENDATIONS FOR BC'S POST-SECONDARY FUNDING MODEL</p> <p>FUNDING FOR SUCCESS POST-SECONDARY EDUCATION IN BC</p>

Other CUFA BC publications:



RECOMMENDATIONS FOR BC'S POST-SECONDARY FUNDING MODEL

FUNDING FOR SUCCESS POST-SECONDARY EDUCATION IN BC



Confederation of University Faculty Associations of BC

www.cufa.bc.ca | info@cufa.bc.ca | 604-646-4677 | 301 - 220 Brew Street, Port Moody, BC V3H 0H6