



ECONOMIC IMPACT ANALYSIS

Prepared for The University of
Calgary

December 2020

In the following report, Hanover Research (Hanover) analyzes the economic contribution of the University of Calgary to the province of Alberta. The analysis includes both a supply-side and demand-side analysis, which employs a regional input-output model to estimate the direct, indirect, and induced impact of the University of Calgary's operations on the Alberta economy.



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EXECUTIVE SUMMARY

Hanover Research's Economic Impact Analysis is organized into two main components:

Demand-Side Analysis: The demand-side analysis estimates the effect of University of Calgary's spending on the province of Alberta. The effect represents both the initial spending by the University of Calgary (typically referred to as the direct effect) and the additional economic activity in other areas of the economy triggered by this initial spending (indirect and induced effects).

Supply-Side Analysis: The supply-side analysis focuses on the University of Calgary's impact in:

- Educating individuals whose skills benefit the provincial economy.
- Generating alumni who become community and business leaders.
- Stimulating business development through research and community partnerships.
- Sponsoring educational and sports events.

Both analyses seek to estimate and illustrate the many important contributions the University of Calgary makes to the province of Alberta. The quantifiable annual economic impact of the University of Calgary is **\$17.3 billion**. This includes **\$4.0 billion** in demand-side economic contributions and an estimated **\$13.3 billion** in supply-side contributions.

These estimates do not fully account for the total economic impact generated by the University of Calgary, such as the exact economic activity generated by about 150,000 alumni in the province, multiple on- and off-campus research facilities, or the variety of initiatives and events led by the University.

TOTAL ESTIMATED ECONOMIC IMPACT:
\$17.3B

Demand-Side Economic Impact: \$4.0B

Supply-Side Economic Impact: \$13.3B

Additional Contributions:



149,753 Alumni in Alberta



360 new research inventions and innovations



Involvement in building out University Research Park



Variety of University-sponsored and student-led events and activities

ECONOMIC IMPACT SUMMARY

The University of Calgary has a total economic impact of \$17.3 billion on the provincial economy as a result of its operation. The table below provides a summary of the direct and induced impact within various categories.

Component	Direct (\$M)	Induced/Dynamic (\$M)	Total Economic Impact (\$M)
Institutional Spending	\$1,450.0	\$1,238.0	\$2,688.0
Student Spending	\$683.5	\$647.4	\$1,330.9
Alumni Education Premium	\$3,182.5	\$1,591.3	\$4,773.8
Visitor Spending	\$166.0	\$118.4	\$284.4
Research	--	\$8,234.6	\$8,234.6
Total	\$5,482.0	\$11,829.7	\$17,311.7

Note: Direct research expenditures are included within the institutional spending category

DEMAND-SIDE ANALYSIS

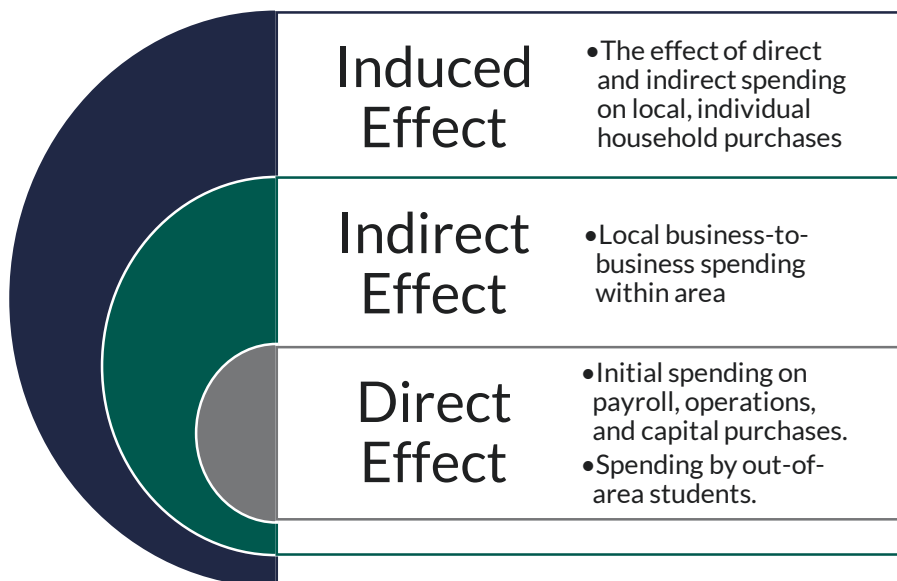
DEMAND-SIDE ANALYSIS

OVERVIEW

As part of the demand-side economic impact analysis, Hanover Research analyzes the contributions of the University of Calgary to the economy of Alberta using an **Input-Output Model**. This model estimates the **direct**, **indirect**, and **induced** effects on Alberta's economy including:

- The impact of the University of Calgary's operating and capital spending.
- Funding/spending generated from out-of-area sources.

TYPES OF DEMAND-SIDE ECONOMIC IMPACT



SCOPE

AREA OF ANALYSIS: Alberta, Canada

YEAR OF ANALYSIS: 2019



Source: [Wikipedia](#)

DEMAND-SIDE ANALYSIS





OVERVIEW

The overall estimated annual **demand-side economic impact of the University of Calgary is about \$4.0 billion**.¹ The University of Calgary's externally funded spending supports **24,113 jobs** in the area. This reflects an **input-output multiplier of 1.88**. In other words, for every dollar of spending by the University of Calgary and its students in Alberta, there is an *additional* impact of \$1.88 on the Alberta economy, or a total impact of \$2.88. **The input-output multiplier for all spending is 1.88.**

The externally-funded demand-side economic impact of the University of Calgary is about \$402.5 million.¹ The University of Calgary's externally funded spending supports 8,608.2 jobs in the area. This reflects an input-output multiplier of 1.92.

¹ Note that dollar values are reported in 2019 dollars.

DEMAND-SIDE ECONOMIC IMPACT

	EXTERNAL FUNDING	ALL FUNDING
 TOTAL IMPACT	\$402,505,839	\$4,018,921,619
 DIRECT SPENDING	\$210,063,894	\$2,133,543,747
 MULTIPLIER EFFECT	1.92x	1.88x
 JOBS SUPPORTED	8,608.2	24,113

DEMAND-SIDE ANALYSIS: TOTAL FUNDING

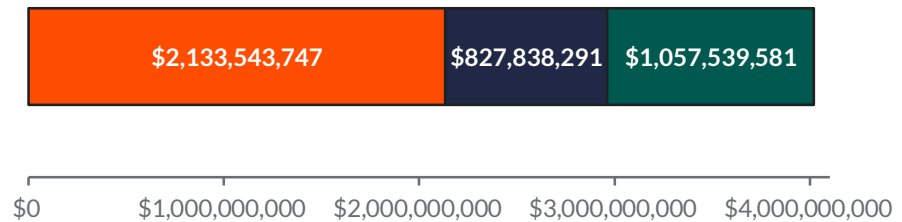
DEMAND-SIDE: GROSS OUTPUT (TOTAL)

In fiscal year 2019, the University of Calgary's activities yielded an estimated gross output impact of at least \$4 billion on Alberta. This impact is based on *all* spending by the University and its students living off-campus. As this impact is not based on out-of-area sources alone, it is possible that *some of this economic activity would still occur in the absence of the University*. Nonetheless, the amount represents a distinguished impact on the Alberta economy overall.

- The **direct effect** of the University of Calgary's operation was **\$2.1 billion**, which includes operating expenditures and capital expenses of \$1,233,584,047 and \$216,415,005, respectively, as well as student off-campus spending of \$683,544,694.
- Taken together, the total operating, capital, and student spending triggered additional **indirect business-to-business spending of \$827,838,291** and **induced household spending of \$1,057,539,581** in Alberta. Therefore, the output effect of the University of Calgary's total spending generated an estimated **\$1.9 billion** in additional economic activity among businesses and households in Alberta.

Gross Output \$4,018,921,619

■ Direct Effect ■ Indirect Effect ■ Induced Effect



Breakdown of \$2.1 Billion Direct Effect:

- \$683,544,694 Student Spending
- \$1,233,584,747 Operating Expenditure
- \$216,415,005 Capital Expenditure

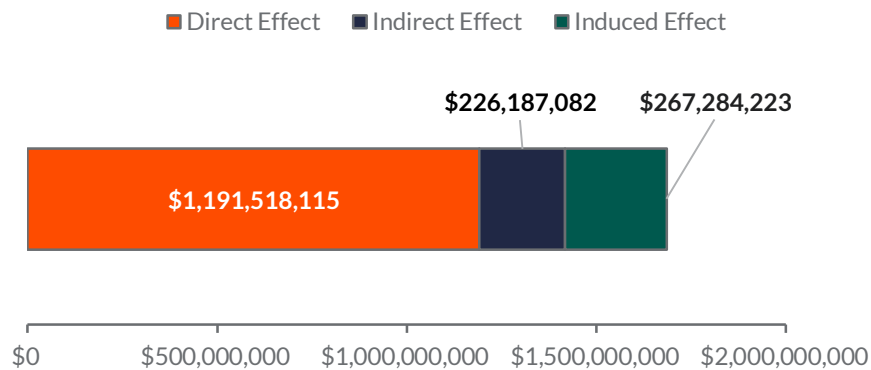
DEMAND-SIDE: LABOR INCOME & EMPLOYMENT IMPACT (TOTAL)

Representing a key subset of gross output, the University of Calgary's total operating, capital, and student spending generated an estimated **\$1.7 billion in labor income**. This includes salaries, wages, and benefits earned by employees and business owners throughout Alberta.

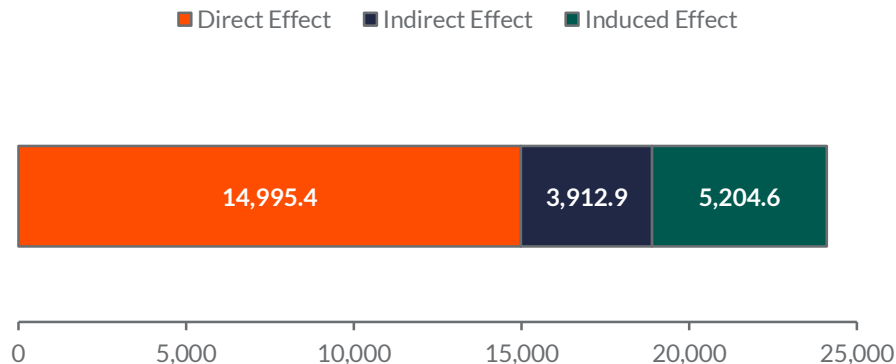
- This labor income value includes a direct effect of \$1,191,518,115, \$226,187,082 in indirect effects, and \$267,284,223 in induced effects. Therefore, the University of Calgary generated an estimated **\$493,471,304** in additional economic activity among households and businesses in Alberta.

In terms of employment impact, University of Calgary's operating, capital, and student spending supported an estimated **24,113 jobs** throughout the province during the 2019 fiscal year. This figure comprises 14,995 jobs supported by direct spending from the University and its out-of-area students, as well as 3,912 jobs supported by business-to-business (indirect) and 5,204 jobs supported by household (induced) spending.

Labor Income \$1,684,989,419



Employment Impact 24,113



DEMAND-SIDE: DETAILED RESULTS (TOTAL)

The table below summarizes the impact of the University of Calgary's total operating and capital spending, and spending by off-campus students, segmented by type of effect.

IMPACT TYPE	DIRECT EFFECT	INDIRECT EFFECT	INDUCED EFFECT	TOTAL EFFECT
Gross Output	\$2,133,543,747	\$827,838,291	\$1,057,539,581	\$4,018,921,619
Operating	\$1,233,584,047	\$327,871,029	\$700,232,068	\$2,261,687,145
Capital	\$216,415,005	\$122,024,959	\$87,860,583	\$426,300,547
Student Spending	\$683,544,694	\$377,942,303	\$269,446,930	\$1,330,933,927
Labor Income	\$1,191,518,115	\$226,187,082	\$267,284,223	\$1,684,989,419
Operating	\$848,160,854	\$90,677,533	\$176,977,758	\$1,115,816,145
Capital	\$80,507,336	\$37,206,192	\$22,206,022	\$139,919,550
Student Spending	\$262,849,925	\$98,303,357	\$68,100,442	\$429,253,725
Employment (Number of Jobs)	14,995.4	3,912.9	5,204.6	24,113.0
Operating	5,886.0	1,611.5	3,446.1	10,943.6
Capital	1,105.4	551.1	432.4	2,088.9
Student Spending	8,004.0	1,750.4	1,326.1	11,080.4

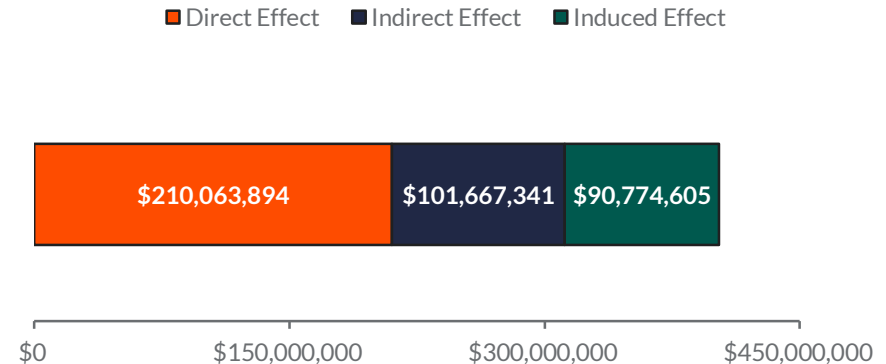
DEMAND-SIDE ANALYSIS: EXTERNAL FUNDING

DEMAND-SIDE: GROSS OUTPUT (EXTERNAL)

In fiscal year 2019, the University of Calgary's activities funded from external sources yielded an estimated gross output impact of \$422.4 million on Alberta. Based exclusively on spending funded by out-of-area dollars, these economic activities would otherwise be unlikely to occur in the province without the University of Calgary.

- The **direct effect** of the University of Calgary's operation that was funded by external dollars was **\$210,063,894**, which includes operating expenditures and capital expenses of \$50,797,833 and \$9,630,801, respectively, as well as out-of-area student off-campus spending of \$149,635,259.
- Taken together, this externally-funded operating, capital, and student spending triggered additional **indirect business-to-business spending of \$101,667,341** and **induced household spending of \$90,774,605** in Alberta. Therefore, the direct output effect of the University of Calgary's operating, capital, and student spending generated an estimated \$402,505,839 in additional economic activity among businesses and households in Alberta.

Gross Output \$402,505,839



Breakdown of \$210 Million Direct Effect:

- \$149,635,259 Student Spending
- \$50,797,833 Operating Expenditure
- \$9,630,801 Capital Expenditure

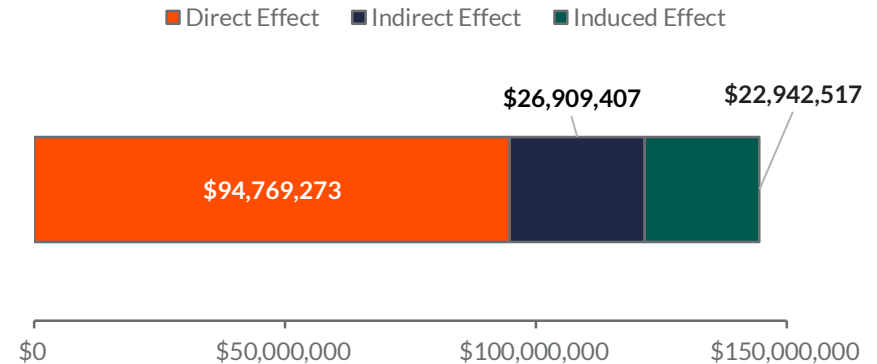
DEMAND-SIDE: LABOR INCOME & EMPLOYMENT IMPACT (EXTERNAL)

Representing a key subset of gross output, the University of Calgary's externally funded operating, capital, and student spending generated an estimated \$144,621,197 in labor income. This includes salaries, wages, and benefits earned by employees and business owners throughout Alberta.

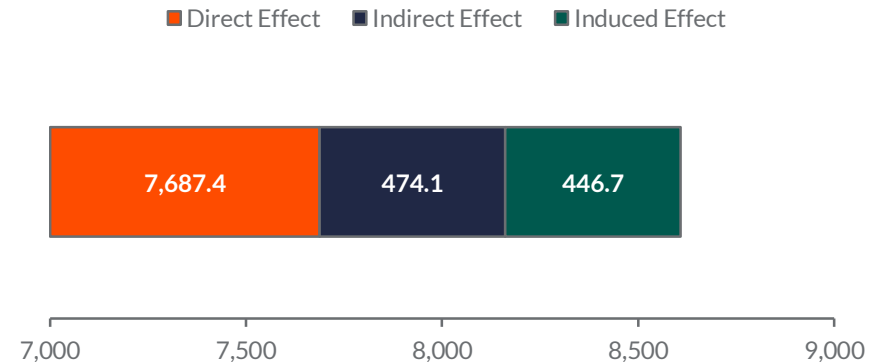
- This labor income value includes a direct effect of \$94,769,273 coupled with \$26,909,407 in indirect effects, and \$22,942,517 in induced effects. Therefore, the University generated an estimated \$144,621,197 in additional economic activity among households and businesses in Alberta.

In terms of employment impact, the University of Calgary's externally funded operating, capital, and student spending supported an estimated 8,608 jobs throughout the province during the 2019 fiscal year. This figure comprises 7,687 jobs supported by direct spending from the University and its out-of-area students, as well as 474 jobs supported by business-to-business (indirect) and 446 jobs supported by household (induced) spending.

Labor Income \$144,621,197



Employment Impact 8,608 Jobs



DEMAND-SIDE: DETAILED RESULTS (EXTERNAL)

The table below summarizes the impact of the University of Calgary's externally funded operating and capital spending and spending by out-of-area students, segmented by type of effect.

IMPACT TYPE	DIRECT EFFECT	INDIRECT EFFECT	INDUCED EFFECT	TOTAL EFFECT
Gross Output	\$210,063,894	\$101,667,341	\$90,774,605	\$402,505,839
Operating	\$50,797,833	\$13,501,421	\$27,879,853	\$92,179,107
Capital	\$9,630,801	\$5,430,299	\$3,909,931	\$18,971,032
Student Spending	\$149,635,259	\$82,735,621	\$58,984,821	\$291,355,700
Labor Income	\$94,769,273	\$26,909,407	\$22,942,517	\$144,621,197
Operating	\$33,645,907	\$3,734,016	\$7,046,398	\$44,426,321
Capital	\$3,582,701	\$1,655,733	\$988,202	\$6,226,636
Student Spending	\$57,540,666	\$21,519,658	\$14,907,917	\$93,968,241
Employment (Number of Jobs)	7,687.4	474.1	446.7	8,608.2
Operating	5,886.0	66.4	137.2	6,089.6
Capital	49.2	24.5	19.2	93.0
Student Spending	1,752.2	383.2	290.3	2,425.6

DEMAND-SIDE ANALYSIS: METHODOLOGY

DEMAND-SIDE: METHODOLOGY DETAILS (1 OF 3)

GEOGRAPHY AND FISCAL PERIOD

This analysis differs from the 2013 study in several ways, beginning with the geographic region considered. While the previous analysis was based on the Calgary Census Metropolitan Area, Hanover's analysis is based on the province of Alberta. Hanover's analysis is based on data for fiscal year (FY) 2019 as provided by the University of Calgary, updated from 2014-15 data in the previous report.

SPENDING

The economic impact analysis measures the effects of an institution's spending through **operating and capital expenditures**. These expenditures are measured by an institution's expenses in a given year, as reported as part of a college or university budget.

Operating Expenditures – Includes payroll and non-payroll operating expenditures.

- *Payroll* – Salaries/wages and benefits paid to non-student employees of the institution. Student employees are excluded from the analysis to avoid double-counting, as student employees also make payments to the university for tuition and other expenses.
- *Non-Payroll* – Expenditures by the institution to support its delivery of education, provision of student services (e.g., “student health clinics and recreational facilities, and auxiliary operations, such as university-operated bookstores, residence halls, and cafeterias...”), and conduct of research and development. This differs from the prior Emsi study, which excluded research-related spending.

Capital Expenditures – Expenditures by the institution for “new construction and purchases of equipment and software that are used for more than a year.”

The 2013 study assessed student spending for all full-time students. Hanover only considers spending by students living off-campus because the spending by on-campus students on room and board would largely flow back to the institution, funding institutional spending that is already included. Thus, the exclusion of on-campus student spending avoid double-counting. In addition, the economic impact guidelines suggest that regional Input-Output models include spending by students “who have temporarily moved into the region to attend university.” To estimate these expenditures, we multiply the average off-campus spending per student by the number of off-campus, out-of-province students to estimate out-of-area impact, then by all off-campus students to estimate the total economic impact on Alberta. Hanover estimates off-campus student spending based on the average single-resident shelter, accommodation, or housing cost in Calgary as cited by the Government of Alberta's [Cost of Living Comparison](#) tool as well as the estimated annual food, clothing, and miscellaneous costs the Government of Alberta reports for [prospective university students](#) moving into the area.

DEMAND-SIDE: METHODOLOGY DETAILS (2 OF 3)

Unlike the 2013 study, Hanover does not include visitor spending due to incomplete data. Visitor spending on-campus may be included within the University of Calgary's reported auxiliary revenues for bookstores, etc.

IMPLAN ANALYSIS

Hanover Research utilized IMPLAN software and supporting data to estimate the economic contributions of University of Calgary to Alberta. IMPLAN is an economic input-output (I-O) modeling software program offered commercially through IMPLAN Group LLC. The IMPLAN software allows Hanover to apply the appropriate "multipliers" to all dollars originally spent in an area by an institution (e.g., a university, its employees, and students). Multipliers account for the fact that a certain percentage of every dollar spent within a local economy remains in the economy and is, in turn, re-spent, generating additional income and expenditures in the process. Hanover also analyzes direct, indirect, and induced effects of spending in terms of employment, offering another means of visualizing the institution's contribution to its surrounding economy. IMPLAN's economic model for Canada is based on 2012 industry data from Statistics Canada. The prior study used Emsi's Canada Regional Input-Output modeling tool to estimate the multiplier effects. It is unclear what the differences are between the two sets of proprietary input-output models and modeling software.

The three types of impact that Hanover reports from IMPLAN results are as follows:

- **Gross Output (Output)** – Total gross value of the institution's economic activities; the "external" output category only includes activities that are funded by external revenues and of out-of-area students' spending.
- **Labor Income** – All forms of employment income, including employee salary/wages and benefits; the "external" labor income category only includes that supported by externally funded institutional expenditures and out-of-area students' spending.
- **Employment** – Number of jobs (full-time or part-time, not full-time equivalent) created by the institution's expenditures; the "external" employment figure only includes jobs that are supported by external dollars and by out-of-area students' spending.

This analysis yields three distinct types of impacts associated with an institution's expenditures:

- **Direct Effect:** This refers to an institution's initial spending on employee payroll, operations, and capital investments.
- **Indirect Effect:** These estimates track each dollar of local spending from one business to another until those dollars are spent outside the local economy. For example, Business A purchases a product from Business B, which uses that money to purchase products from Businesses C and D.
- **Induced Effect:** These estimates track the effects of direct and indirect spending on local, individual household purchases.

ESTIMATION OF EXTERNAL REVENUES

Hanover excludes the University of Calgary's spending that is funded by purchases from in-area businesses and households. This step is taken to avoid "double-counting" or overestimation of economic impact.

- We subtract student payroll (except for graduate stipends) and scholarship/aid from tuition and fees revenue and prorate the remaining amount by the percentage of out-of-area students.
- Bookstore revenues reported by the University of Calgary are also prorated by the percentage of out-of-area students.
- Gift revenue is excluded, as there is no data for how much of this revenue comes from in-area vs. out-of-area sources.

SUPPLY-SIDE ANALYSIS

SUPPLY-SIDE OVERVIEW

Hanover Research's Supply-Side Economic Impact Analysis is organized into three main components:

- **Academic Impact** analyzes the impact of the University of Calgary's academic programs on the Alberta province, including academic rankings, scholarships and bursaries, support for underrepresented learners, and notable academic programs.
- **Alumni Impact** evaluates the impact of the University of Calgary's alumni on the community, including estimated additional earnings as a result of receiving a degree at the University of Calgary and notable individual alumni.
- **Community Engagement and Research Impact** assesses the impact of the University of Calgary's programs and events on the Alberta community, including cultural events, conferences, public service, and other community partnerships.

Quantifiable contributions include **7,192 total degree conferrals** in 2019; an estimated **\$4.8 billion** in additional annual income earned by alumni in Alberta; an estimated **\$284.4 million** in visitor spending; an estimated **\$8.2 billion** in economic impact of research; and **\$110.4 million** in scholarships and bursaries awarded to students.

The University of Calgary also makes significant contributions to the Alberta community as well as the world through high-impact research in areas such as healthcare, clean energy and sustainability, and water resources.

SIGNIFICANT SUPPLY-SIDE ECONOMIC CONTRIBUTIONS



\$13.3B total estimated economic impact from alumni earnings, research impact, and visitor spending



7,192 degrees conferred 2019



Within the top 10 in Canada and top 250 globally in international rankings from Times Higher Education, US News and World Report, and Academic Ranking of World Universities



Estimated additional in-province alumni income of **\$4.7 billion** per year



Total **\$110.4 million** in scholarships and bursaries in 2019

SUPPLY-SIDE ANALYSIS: ACADEMIC IMPACT

RANKINGS AND SPECIAL PROGRAMS

NOTABLE RANKINGS

The University of Calgary has [ranked](#) in the top 10 within Canada across multiple reputable rankings including *Times Higher Education (THE)*, *US News and World Report (USNWR)*, *Academic Ranking of World Universities (ARWU)*, *Center for World University Rankings (CWUR)*, and *QS World University Rankings*. These rankings also placed University of Calgary between #150 and #250 globally.

The University of Calgary has also earned accolades as an employer, including ranking among [Alberta's Top 75 Employers](#) and [Canada's Best Diversity Employers](#) for the last four years. It also received the [WorldatWork](#) Alliance for WorkLife Progress Seal of Distinction for three years (2015-2017).

NOTABLE RANKINGS OF THE UNIVERSITY OF CALGARY

#8 (Canada)/
#201-250
(Global)

Ranking
[Times Higher Education](#)

#1 (Canada)/
#25 (Global)

Ranking
[Times Higher Education -
Golden Age](#)

#7 (Canada)/
#178 (Global)

Ranking
[US News and World Report](#)

#6-9 (Canada)/
#151-200
(Global)

Ranking
[Academic Ranking of World
Universities](#)

#6
Ranking
[Re\\$earch Infosource](#)

#9 Medical/
Doctoral
Ranking
[Macleans](#)

SCHOLARSHIPS AND BURSARIES

SCHOLARSHIPS, BURSARIES, AND OTHER AWARDS

The University of Calgary currently offers **more than 1,000 internal scholarships, bursaries, and other financial assistance awards** to new and continuing students. In 2019, the institution reported a total of **\$110,371,000** in scholarship expenditures.

Prestige Awards include more than seven individual awards for high-achieving entering students including:

- **Chancellor's Scholarship:** variable number of \$15,000 renewable awards.
- **UCalgary International Entrance Scholarship:** two \$15,000 renewable awards.

The University of Calgary also offers **Entrance Awards** based on high school grades and awards for **continuing, international, and graduating** students.

The **Indigenous Awards** for new and continuing students include:

- **Métis Scholars Undergraduate Award:** Three merit awards of up to \$5,000 each.
- **ii' taa'poh'to'p Excellence Award:** Varying numbers of entrance awards and eight continuing awards of \$10,000 each.
- **First Nations, Métis, and Inuit Bursary:** Three awards of \$3,000 each.

SCHOLARSHIPS AND BURSARIES



\$110.4 million total awarded in scholarships during 2019



More than 1,000 individual awards including 542 bursaries and 445 scholarships



Currently offers 28 awards for indigenous students, 20 scholarships and bursaries for women, and 8 awards for students with disabilities

RECRUITING AND SUPPORTING UNDERREPRESENTED LEARNERS

RECRUITMENT

The University of Calgary operates [recruitment initiatives](#) targeted at prospective students from underrepresented backgrounds.

The **Indigenous recruitment officer** builds relationships and supports students in the Treaty 7 region and across the province.

The **Community Liaison Advisor** connects with local community associations, cultural organizations, and social support service agencies to assist students from pre-application through the first day of classes.

For learners seeking **upgrading or ESL support**, the University's Continuing Education division provides language training and programming directed towards newcomers.

Pathways programs for students with **non-traditional backgrounds** include:

- The Cumming School of Medicine's **Pathways to Medicine program** supports and mentors students from low-income families, rural areas, non-traditional backgrounds, and Indigenous communities to consider a career in medicine.
- The Werklund School of Education's **Bridge to Teaching program** provides rural and indigenous students with a pathway to enter the Bachelor of Education degree.
- The Schulich School of Engineering's **Biology pathway to Engineering** is designed to increase access for underrepresented learners, who are more likely to have taken Biology 30 in high school rather than the standard Physics 30 requirement.

SUPPORT

Indigenous [support centres and programs](#) include:

- **SAGE UCalgary (Supporting Aboriginal Graduate Enhancement)** provides safe spaces for graduate students to connect with peers, mentors, and the campus community as well as develop professional, academic, and personal skills.
- The **Indigenous Student Access Program** allows Indigenous students who are not yet fully admissible to take university-level credit courses designed to improve academic success and gain access to faculty-based programs.
- A **dedicated career advisor for Indigenous students**.
- The **Writing Symbols Lodge** provides academic, personal and cultural support services and programs.

Student Accessibility Services facilitates an accessible learning environment for students with disabilities, including access to an accommodated Exam Centre (one of the largest in Canada), a dedicated access advisor and learning strategist, and the Nat Christie Adaptive Technology Centre. The **Inclusive Post-Secondary Education (IPSE) program** supports individuals with developmental disabilities.

The Students' Union's **Centre for Sexual & Gender Diversity (Q Centre)** is a safe space for the LGBTQA+ community, featuring a library and peer support services. Program coordinators and volunteers plan events and direct inquiries to relevant resources. The Queer Mentoring initiative strives to provide sexual and gender minority undergraduate students with opportunities to empower themselves.

NEW AND DISTINCTIVE PROGRAMS

The University of Calgary offers several unique programs and faculties. It is **one of only two Alberta institutions offering degrees in engineering, law, social work, and medicine** including a [unique three-year MD](#).

The University of Calgary continues to develop new and innovative programs. In the past two years, the University of Calgary established a number of **stackable graduate credentials** including:

- **Data science** graduate [certificate](#), [diploma](#), and master's degrees.
- **Data privacy and security** certificates ([Data Privacy](#), [Network Security](#), [Software Security](#)) and a [Master of Information Security and Privacy](#).
- **Leadership in Advanced Engineering Practice** certificate and diploma.
- **Social Work** [certificates](#) leading to the Master of Social Work.
- Proposed **Precision Health** graduate certificate, diploma, and master's degrees currently seeking government approval.

The University of Calgary has also established new [undergraduate embedded certificates](#) in Sustainability Studies, Mental Health and Resilience, Creative Writing, Entrepreneurial Thinking, Leadership Studies, and Canadian Studies with more in development.

Additional **new undergraduate programs** include:

- **Foreign-Trained Lawyer's Program**.
- Faculty of Science-wide **internship** program.
- Engineering [minors](#) in **Biomedical, Digital, Aerospace, and Energy and Environment** Engineering.
- A **Bachelor of Sciences in Biomedical Engineering** is currently seeking government approval.



SPOTLIGHT: OTHER UNIQUE AND NOTABLE PROGRAMS

Additional notable or unique programs at the University of Calgary include:

- [BLG Business Venture Clinic](#) in which law students provide free legal assistance to local entrepreneurs.
- [BHSc in Bioinformatics](#).
- The [Galapagos Extension Program](#) offers “a unique opportunity to study evolution, ecology and conservation, marine ecology as well as sociopolitical and environmental issues hands-on.”
- The Faculty of Kinesiology's **graduate specialization in [wearable technology](#)**.

SUPPLY-SIDE ANALYSIS: ALUMNI IMPACT

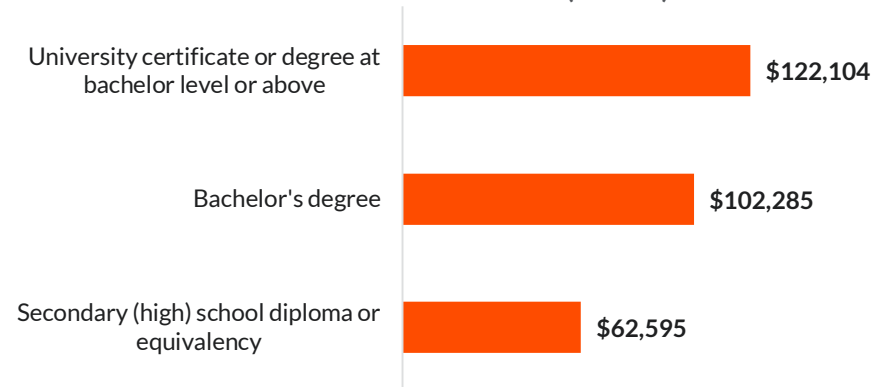
ECONOMIC “VALUE ADDED” ANALYSIS

The University of Calgary makes a significant economic contribution via increased economic mobility and earnings power for graduates. [Statistics Canada](#) finds that average income for workers in Alberta (and nationally) increases with each educational credential earned. According to the [2018 National Graduates Survey](#), the highest salaries are awarded to workers with a doctoral or professional degree.

Hanover conducts a province-level “value added” analysis, intended to provide a broad illustration of the potential monetary value that graduates of the University of Calgary programs receive via increased earnings. To estimate this value, Hanover cross-referenced in-area alumni as reported by the University of Calgary in 2019 with the differences between average income for bachelor’s or graduate degree holders and the average for individuals with only a secondary diploma or equivalency. This analysis makes several assumptions:

- All in-area alumni earn at least the provincial average.
- Hanover does not account for variations by specialization.
- Hanover estimates income premium based on median salaries for workers ages 15 and above by age group and gender using data provided by the University of Calgary.
- Hanover removes taxes from average salaries based on [federal](#) and [Alberta](#) provincial income tax rates and calculates a second education premium net of taxes. The final impact figure on the following page represents this after-tax estimate.

AVERAGE ANNUAL EARNINGS BY EDUCATIONAL ATTAINMENT IN ALBERTA FOR FULL-TIME WORKERS AGES 15 AND OLDER (2016)



SALARY PREMIUM BY EDUCATIONAL ATTAINMENT FOR ALBERTA WORKERS AGES 15 AND OVER, 2016

Educational Attainment	Premium
Bachelor's degree	\$42,009
University certificate, diploma or degree above bachelor level	\$62,986

Source: [Statistics Canada](#)

ECONOMIC “VALUE ADDED” ANALYSIS

The University of Calgary reported a total of 149,753 alumni in the Alberta province. Of these, 118,117 hold a bachelor’s degree, 936 hold a diploma, and 30,700 hold one or more degrees at the master’s and/or doctoral level.

Based on “value-added” analysis, the University of Calgary’s Alberta alumni represent approximately \$3.2 billion in additional annual income. Direct net educational premium after taxes for these alumni totals \$3.2 billion; estimating induced impact (1.5x) in line with prior EIA reports done by Canadian institutions, this suggests an overall impact of \$4.8 billion.

ESTIMATED AGGREGATE EARNINGS PREMIUM FOR UNIVERSITY OF CALGARY ALUMNI LIVING IN ALBERTA, 2019

Credential	Estimated Direct Impact (\$M)	Estimated Total Education Premium Impact (\$M)
Bachelor’s degree	\$2,347.6	\$3,521.3
Graduate diploma	\$16.4	\$24.6
Master’s degree or Doctoral/PhD	\$818.5	\$1,227.8
Total Education Premium	\$3,182.5	\$4,773.8

Source: [Statistics Canada](#) and University of Calgary alumni data; salary data adjusted from 2016 to 2019 dollars using Alberta [Consumer Price Index](#)

NOTABLE ALUMNI

The University of Calgary has produced many notable alumni residing within and outside of Alberta. Notable alumni include current and prior holders of political office, members of healthcare organizations, authors, consultants, athletes, and entrepreneurs. In addition to those highlighted on the right, other notable alumni include:

- [Warren Kinsella](#) ('87) – President, Daisy Group
- [Doug Hamilton](#) ('91) – Physician, Alberta Health Services; former Flight Surgeon at NASA and Canadian Space Agency
- [Ian Brodie](#) ('97) – Graduate Program Director, Centre for Military, Strategic & Security Studies at University of Calgary; former Chief of Staff to Prime Minister Stephen Harper
- [Kevin Boyles](#) ('98) – CEO and General Manager, Calgary Winter Club/Chair of the Board of Directors, Volleyball Canada
- [Gary Kovacs](#) ('99) – CEO, Accela/Board of Directors member, Make-A-Wish Greater Bay Area
- [Tara Hunt](#) ('01) – CEO, Truly Inc./Co-Founder and CEO, Phlywheel
- [Kelly Bechard](#) ('02) – Senior Banker, National Bank of Canada
- [Stephanie Gawlinski](#) ('02) – Director of Supply Chain Management, Crescent Point Energy
- [Garrett Camp](#) ('06) – Startup founder, Expa
- [Robert Thirsk](#) ('09) – Canadian astronaut (retired)
- [Harvey Locke](#) ('18) – Conservationist, writer, and photographer/Chair, Beyond the Aichi Targets Task Force at the IUCN World Commission on Protected Areas

Stephen Harper
Former Prime Minister of Canada

Diane Ablonczy
Member of Parliament

Naheed Nenshi
Mayor of the City of Calgary

Evan Adams
Deputy Chief Medical Officer, Indigenous Services Canada

Linda Taylor
Executive Director, Office of Administration of Justice at United Nations

Jeremy Gutsche
NYT Best-Selling Author/CEO of Trend Hunter

Erica Weibe
2016 Olympic Champion (Freestyle Wrestling)

SUPPLY-SIDE ANALYSIS: COMMUNITY ENGAGEMENT AND RESEARCH IMPACT

ECONOMIC IMPACT OF RESEARCH

ESTIMATED DIRECT ECONOMIC IMPACT OF RESEARCH

	Estimated Impact (\$M)
Alberta GDP Growth (1981-2018)	\$265,853
Total Factor Productivity (TFP) (x20%)	\$53,171
Domestic R&D (x69%)	\$36,688
Share of Domestic R&D by Alberta Universities (45.9%)	\$16,840
Share of Domestic R&D by University of Calgary (48.9%)	\$8,235
Research Impact (University of Calgary's share of domestic R&D)	\$8,235

Source: GDP growth numbers from [Statistics Canada](#) for 1981-2018; TFP from Martin (1998); higher education share of GDP from [Statistics Canada](#); University of Calgary R&D share from data submitted to CAUBO

The University of Calgary's estimated indirect research impact is **\$8.2 billion**. The table at left summarizes the results of a calculation using Total Factor Productivity (TFP) model which looks at the proportion of Alberta's domestic R&D growth which can be reasonably attributed to the University of Calgary.

Research dollars spent directly by the University of Calgary on operations (e.g., salary, equipment, etc.) are already incorporated within the demand-side analysis. This represents an additional indirect impact on top of that spending.

RESEARCH ENGAGEMENT AND IMPACT

The University of Calgary maintains multiple research facilities on and off its main campus including:

- The **Taylor Institute for Teaching and Learning**: the first in Canada dedicated solely to improving postsecondary teaching and learning. It houses both learning and research spaces.
- **Ward of the 21st Century**: a research and beta-test site for prototypical hospital design, novel approaches to health care delivery, human factors research, and innovative medical technologies.
- Spy Hill Campus houses the **Veterinary Sciences Research Station** and **Wildlife Research Station**.
- **University Research Park**: a 34-hectare research and incubation space developed in partnership with the Province of Alberta and City of Calgary.
- Kananaskis ecological field stations.
- **Kluane Lake Research Station**: one of the most valued, celebrated, and well-used highlights of the Arctic Institute of North America.

The University of Calgary also operates shared “**core facilities**” for research including the Embryonic Stem Cell/Targeted Mutagenesis Facility, Molecular Biology Core Facility, Clinical Research Unit, Micro CT Laboratory, Experimental Imaging Centre, Centre for Health Genomics and Informatics, Live Cell Imaging Facility, Behavioural Core Facility, Addictive Behaviour Laboratory, Human Performance Laboratory, UC Lab for Electron Microprobe Analysis, and Visualization Studio.

SIGNIFICANT RESEARCH CONTRIBUTIONS



513 postdoctoral scholars and 169 research chairs supported; 45 new postdocs recruited via Eyes High Postdoctoral Scholars Competition



360 new inventions and innovations



\$601,026 in gross license income



New research park announced in partnership with Province of Alberta

KEY HIGHLIGHTS FOR MAIN RESEARCH AREAS

Brain and Mental Health



Infections, Inflammation and Chronic Diseases



Clinical, Health Services and Population Health



Engineering Solutions for Health



- University-wide **Integrated Concussion Research Program (ICRP)** to address growing concerns about, and improve treatment and prevention of, concussions.
- Veterinary Medicine conducts **collaborative research** in anti-microbial resistance, zoonosis, and nutrition **alongside Science, Engineering, Kinesiology, Arts, and Medicine**.
- State-of-the-art precision medicine program** in Cumming School of Medicine.
- Investments in **Centre for Health Informatics** to leverage robust Alberta health data and improve provincial health outcomes.
- Knowledge translation from health research efforts **impact human health, agricultural production, environmental sustainability, as well as quality of life for rural communities**.
- Magnetic Resonance (MR) guided Focused Ultrasound Platform** enables incision-free neurosurgery and neuromodulation to areas of the brain as small as a grain of rice.
- Collaborates on clinical research initiatives and teaching centres with Alberta Health Services**, including:
 - Brain and Mental Health researchers lead AHS Strategic Clinical Networks to ensure clinical care of Albertans is informed by the latest research.
 - Joint teaching centres for family medicine residents serve Albertans' primary healthcare needs through access to family doctors.

KEY HIGHLIGHTS FOR MAIN RESEARCH AREAS

New Earth-Space Technology



- Developing an **open, unified Internet of Things framework** for research in climate change, air quality, ground water, and ecology.
- R&D, knowledge transfer, and community assistance in meeting water-related needs via **Advancing Canadian Wastewater Assets (ACWA)**.

Energy Innovations for Today and Tomorrow



- **Global Research Initiative in Sustainable Low Carbon Unconventional Resources (GRI)** resulted in seven spinoff companies, 131 inventions, and 52 partnerships across seven countries.
- Research supports **meeting provincial Clean Energy carbon targets**.

Human Dynamics in a Changing World



- Research yields urban design expertise for building health communities in Alberta and beyond.
- Involved in pan-provincial **Quantum Alberta** organization to position Alberta in the Quantum Canada landscape.

INNOVATION AND COMMERCIALIZATION

INNOVATE CALGARY

Innovate Calgary (IC) is a knowledge transfer and business incubation centre operated by the University of Calgary for 32 years. In the past five years, the University worked to strengthen and reinvigorate IC. Since its establishment, IC has overseen 901 secured patents, 549 revenue agreements, and 92 startup companies.

Startup companies out of IC include:

- [LivingWorks](#) suicide prevention training provider.
- [Circle Cardiovascular](#), a “global leader in cardiac imaging solutions.”
- [Trusted Positioning](#), a global positioning software company. In 2014, the company [sold for \\$36 million](#) to NYSE-listed technology service company InvenSense.
- [Parvus Therapeutics](#), a drug developer of Navacims, disease-modifying therapeutics for autoimmune diseases.
- Epimeron, a biotechnology company now [merged](#) into [Willow Biosciences Inc.](#) following a takeover of Makena Resources Inc. with BioCan Technologies Inc.
- [Neuraura](#), an implantable medical device company.



SPOTLIGHT: PARVUS THERAPEUTICS

Parvus Therapeutics, a spinoff company founded by Dr. Pere Santamaria in 2009 with support from Innovate Calgary, announced a [\\$1 billion collaboration and licensing agreement](#) with U.S. biotech firm Genentech. The agreement will support **development, manufacturing, and commercialization of drugs that treat celiac, autoimmune liver, and inflammatory bowel diseases.**

In 2017, Parvus entered a prior agreement with Novartis for development of treatments for Type 1 Diabetes.

HIGHLIGHTS



New talent/fellowship program
with 25 former postdocs and
graduate students



75% increase in start-ups during
2019



Involved in building out
University Research Park

IMPACT: COVID-19

The University of Calgary supports and conducts a range of research and community service efforts related to COVID-19, including maintaining a crowdfunded [COVID-19 Research Fund](#).

Research contributions to COVID-19

Development of new and improved testing interventions including a [hand-held device](#), a [rapid test](#) for areas with limited diagnostic equipment which can provide results in 30 minutes, and a [personal sensor](#) to support social distancing and contact tracing.

Researching how COVID-19 affects [healthcare workers](#), [immigrant workers](#), and the mental health of [pregnant mothers](#).

Research into an outbreak at [Alberta meat processors](#).

Researching potential [transmission among children](#).

Conducting **treatment-related research** to [support vaccine production](#), identify [new drug leads](#), use [plasma for potential treatment](#), and assess effectiveness of interventions using existing medications such as [hydroxychloroquine](#).

Working to **produce and develop additional medical devices** such as an [emergency pandemic ventilator](#).

Other COVID-19-related Efforts

Supporting PPE availability through:

- Leading production and delivery of [12,000 COVID-19 face shields](#).
- Designing a process for [custom COVID-19 mask production](#) using face-scanning technology.
- Donating supplies to [community partners](#) in senior care.
- Volunteers helping to [repackage and distribute face coverings](#).
- O'Brien Institute for Public Health supported Street CCRED team [purchased and distributed PPE](#) to Calgary children and family shelters.

Offering a [refresher course](#) on proper PPE use.

Students operated a [free grocery delivery service](#) for at-risk Calgary residents who need to remain at home.

Undergraduate student [tutoring for K-12 students](#) to help address school closures.

EVENTS AND VISITORS

ATHLETIC AND CULTURAL EVENTS



Approximately 200 cultural and more than 180 athletic and community events in 2019



More than 50,000 attendees



\$650,000 in cultural events revenue

Annual Events	Date	Attendance
World Cup LT Speed Skating	Feb 7-9	1,000
HS Basketball City Championships	Mar 7	2,000
International Shotokan Karate Seminar	May 16-17	400
Canada Cup Wrestling	June 28-30	3,000
1 st Year Students BBQ	Sep 3	4,000
Dinos MW Soccer Playoffs	Oct 25-27	300
Alumni Christmas Skate	Nov 19-22	1,000
Calgary Firefighters Family Christmas Party	Dec 14	1,000

HOTEL ALMA

The University of Calgary operates **Hotel Alma**, an on-campus hotel with visitor rooms and meeting spaces. The hotel offers one-bedroom to three-bedroom apartments and dormitory rooms, with support for up to 1,222 guests. In fall and winter, Seasonal Residence provides short-term residences to teams, student groups, exchange students, and others. During 2019-20, Hotel Alma supported the following guests and associated revenue.

27,938

Total Room Nights



48,196

Total Adult Guests

\$2,998,604.74

Total Room Revenue



VISITOR SPENDING

IMPACT OF VISITOR SPENDING

Estimates indicate that visitors to University of Calgary events contribute approximately \$284.4 million to the Calgary area. In the absence of comprehensive visitor and expenditure data for all university activities, the number of annual visitors is estimated using a 1:8 ratio of the number of full-time undergraduate students to the number of visitor. Hanover uses average length of stay from the Alberta government's [tourism profile](#) for the Calgary area. The spending per day is estimated from [Tourism Calgary's](#) direct attendee spending by room night (appendix p3).

Based on tourism averages, the likely direct impact of visitor spending is \$166.0 million; estimating an induced multiplier of 1.71x, this suggests a total induced impact of \$284.4 million.

ESTIMATED IMPACT OF VISITOR SPENDING, 2019

Type of Expenditure	Value
Number of Visitors	205,040
Average Length of Stay (Days)	2.2
Spending per Day (\$)	\$368
Total Direct (\$M)	\$166.0
Total Visitor Impact (Direct + Induced; \$M)	\$284.4

Source: Average length of stay in Alberta from Calgary area [visitor profile](#); estimated spending per day adapted from [Tourism Calgary Destination Report Q3 2019](#); induced multiplier of 0.713 for the Accommodation and Food Services industry in Alberta from [Statistics Canada](#).

COMMUNITY SERVICE AND OUTREACH

COMMUNITY SERVICE

The University of Calgary's students provide thousands of hours of community service to the Calgary community as well as other province, national, and international communities. The University of Calgary also practices community outreach through [podcasts](#), [webinars](#), and [public events](#).

Service opportunities and programs include:

- **781 co-curricular activities**
 - Canadian Cancer Society [Relay for Life](#)
 - Canadian Centre for Advance Leadership (CCAL) in Business [Ambassador Program](#)
 - Club for Awareness of Human Trafficking (CAHT)
 - Adopt a Block
 - Amnesty International UC
 - [Autism Awareness Club](#)
 - [Campus Kiva: Pockets that Care](#)
 - [Community Garden](#)
 - [Get Out the Vote](#), U of C
 - Mentors in Action
- [Werkland School of Education](#) service learning, tutoring, and volunteer teaching
- Faculty of Veterinary Medicine equine care for indigenous communities
- Faculty of Nursing clinical practice
- Faculty of Law [Public Interest Law Clinic](#)
- [Campus Community Kitchen](#)
- Wellness and Health Awareness Team Peer Helpers

Community service activities conducted during 2019-20 for which participant numbers and hours are available include:

Event or Program	Student Participants	Service Hours
Co-Curricular activities	3,130	122,488
UCalgary Cares	137	3,311
Risk Management & Insurance Better Impact System	744	17,855
Werklund School of Education service learning	179	5,440
Werkland School of Education online tutoring	191	8,783
Werkland School of Education volunteer teaching	45	5,400

ADDITIONAL COMMUNITY OUTREACH



4 podcasts including COVIDcast



33 currently-available webinars



More than 10 community partners including Calgary Youth Science Fair and Alberta Ballet

SUPPLY-SIDE ANALYSIS: METHODOLOGY

SUPPLY-SIDE METHODOLOGY DETAILS

STUDENT AND ALUMNI DATA

The University of Calgary provided Hanover with alumni data, detailing the geographic location of alumni by country and Canadian province. Additionally, the University notes the distribution of high-profile alumni (i.e. those with notable positions like business owners, executives, directors, partners, etc.)

ADDITIONAL INCOME

Additional income is an estimated measure of the added earnings potential for the University of Calgary graduates. To calculate the added earnings potential to the economy by the University of Calgary, Hanover uses average alumni income data from the University of Calgary in conjunction with average earnings by individuals with a secondary credential according to Canadian Census data from [Statistics Canada](#).

We calculate the difference between the salary of individuals holding only a secondary credential and alumni of the University of Calgary. Then, by multiplying the difference by the number of graduates in a given year, we estimate a rough approximation of the added earnings potential for that year contributed by the University of Calgary. This approach provides only a single point estimate of added earning potential and does not account for students entering or exiting with varied educational attainment.

As alumni salary data supplied by the University of Calgary are based on recent graduates, Hanover also looks at salary information for individuals within the approximate age range of recent bachelor's completers or individuals pursuing a postgraduate credential immediately after their undergraduate degree. Likewise, Hanover does not calculate earnings for all alumni in the province as age information is not available for these alumni. As such, Hanover could not select comparable median earnings for individuals in certain age groups with only a secondary credential.



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