In the following report, Hanover Research (Hanover) analyses 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.
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 **$16.5 billion**. This includes **$3.2 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:**

**$16.5B**

**Demand-Side Economic Impact:** **$3.2B**

**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
The University of Calgary has a total economic impact of $16.5 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.

<table>
<thead>
<tr>
<th>Component</th>
<th>Direct ($M)</th>
<th>Induced/Dynamic ($M)</th>
<th>Total Economic Impact ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional Spending</td>
<td>$1,450.0</td>
<td>$725.0</td>
<td>$2,175.0</td>
</tr>
<tr>
<td>Student Spending</td>
<td>$683.5</td>
<td>$341.8</td>
<td>$1,025.3</td>
</tr>
<tr>
<td>Alumni Education Premium</td>
<td>$3,182.5</td>
<td>$1,591.3</td>
<td>$4,773.8</td>
</tr>
<tr>
<td>Visitor Spending</td>
<td>$166.0</td>
<td>$83.0</td>
<td>$249.0</td>
</tr>
<tr>
<td>Research</td>
<td>--</td>
<td>$8,234.6</td>
<td>$8,234.6</td>
</tr>
<tr>
<td>Total</td>
<td>$5,482.1</td>
<td>$10,975.6</td>
<td>$16,457.7</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Induced Effect</th>
<th>Direct Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Local business-to-business spending and local, individual household purchases impacted by direct expenditures</td>
<td></td>
</tr>
<tr>
<td>• Initial spending on payroll, operations, and capital purchases.</td>
<td></td>
</tr>
<tr>
<td>• Spending by out-of-area students.</td>
<td></td>
</tr>
</tbody>
</table>

SCOPE

AREA OF ANALYSIS: Alberta, Canada

YEAR OF ANALYSIS: 2019

DEMAND-SIDE ANALYSIS

OVERVIEW

The overall estimated annual demand-side economic impact of the University of Calgary is about $3.2 billion.\(^1\) The University of Calgary’s externally funded spending supports 22,493.1 jobs in the area. This reflects an input-output multiplier of 1.5. In other words, for every dollar of spending by the University of Calgary and its students in Alberta, there is an additional impact of $0.5 on the Alberta economy, or a total impact of $1.50. The input-output multiplier for all spending is 1.5.

The externally-funded demand-side economic impact of the University of Calgary is about $402.5 million. The University of Calgary’s externally funded spending supports 8,608.2 jobs in the area. This reflects an input-output multiplier of 1.5.

\(^1\) Note that dollar values are reported in 2019 dollars.

<table>
<thead>
<tr>
<th></th>
<th>EXTERNAL FUNDING</th>
<th>ALL FUNDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL IMPACT</td>
<td>$315,095,841</td>
<td>$3,200,315,620</td>
</tr>
<tr>
<td>DIRECT SPENDING</td>
<td>$210,063,894</td>
<td>$2,133,543,747</td>
</tr>
<tr>
<td>MULTIPLIER EFFECT</td>
<td>1.5x</td>
<td>1.5x</td>
</tr>
<tr>
<td>JOBS SUPPORTED</td>
<td>11,531.0</td>
<td>22,493.1</td>
</tr>
</tbody>
</table>
DEMAND-SIDE ANALYSIS: TOTAL FUNDING
In fiscal year 2019, the University of Calgary’s activities yielded an estimated gross output impact of at least $3 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 induced spending of $1,066,771,873 in Alberta.

### Breakdown of $2.1 Billion Direct Effect:
- $683,544,694 Student Spending
- $1,233,584,747 Operating Expenditure
- $216,415,005 Capital Expenditure
Representing a key subset of gross output, the University of Calgary's total operating, capital, and student spending generated an estimated $1.8 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 and $595,759,057 in induced effects.

In terms of employment impact, University of Calgary's operating, capital, and student spending supported an estimated 22,493 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 7,498 jobs supported by induced spending.
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.

<table>
<thead>
<tr>
<th>IMPACT TYPE</th>
<th>DIRECT EFFECT</th>
<th>INDIRECT EFFECT</th>
<th>TOTAL EFFECT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross Output</strong></td>
<td>$2,133,543,747</td>
<td>$1,066,771,873</td>
<td>$3,200,315,620</td>
</tr>
<tr>
<td>Operating</td>
<td>$1,233,584,047</td>
<td>$616,792,024</td>
<td>$1,850,376,071</td>
</tr>
<tr>
<td>Capital</td>
<td>$216,415,005</td>
<td>$108,207,503</td>
<td>$324,622,508</td>
</tr>
<tr>
<td>Student Spending</td>
<td>$683,544,694</td>
<td>$341,772,347</td>
<td>$1,025,317,041</td>
</tr>
<tr>
<td><strong>Labor Income</strong></td>
<td>$1,191,518,115</td>
<td>$595,759,057</td>
<td>$1,787,277,172</td>
</tr>
<tr>
<td>Operating</td>
<td>$848,160,854</td>
<td>$424,080,427</td>
<td>$1,272,241,281</td>
</tr>
<tr>
<td>Capital</td>
<td>$80,507,336</td>
<td>$40,253,668</td>
<td>$120,761,004</td>
</tr>
<tr>
<td>Student Spending</td>
<td>$262,849,925</td>
<td>$131,424,963</td>
<td>$394,274,888</td>
</tr>
<tr>
<td><strong>Employment (Number of Jobs)</strong></td>
<td>14,995.4</td>
<td>7,497.7</td>
<td>22,493.1</td>
</tr>
<tr>
<td>Operating</td>
<td>5,886.0</td>
<td>2,943.0</td>
<td>8,829.0</td>
</tr>
<tr>
<td>Capital</td>
<td>1,105.4</td>
<td>552.7</td>
<td>1,658.1</td>
</tr>
<tr>
<td>Student Spending</td>
<td>8,004.0</td>
<td>4,002.0</td>
<td>12,006.0</td>
</tr>
</tbody>
</table>
DEMAND-SIDE ANALYSIS: EXTERNAL FUNDING
In fiscal year 2019, the University of Calgary’s activities funded from external sources yielded an estimated gross output impact of $315.1 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 induced spending of $105,031,947 in Alberta. Therefore, the direct output effect of the University of Calgary’s operating, capital, and student spending generated an estimated $315,095,841 in additional economic activity among businesses and households in Alberta.

Breakdown of $210 Million Direct Effect:

- $149,635,259 Student Spending
- $50,797,833 Operating Expenditure
- $9,630,801 Capital Expenditure
Representing a key subset of gross output, the University of Calgary’s externally funded operating, capital, and student spending generated an estimated $142,153,910 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 $47,384,637 in induced effects. Therefore, the University generated an estimated $142,153,910 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 11,531 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 3,844 jobs supported by induced spending.
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.

<table>
<thead>
<tr>
<th>IMPACT TYPE</th>
<th>DIRECT EFFECT</th>
<th>INDUCED EFFECT</th>
<th>TOTAL EFFECT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gross Output</strong></td>
<td>$210,063,894</td>
<td>$105,031,947</td>
<td>$315,095,841</td>
</tr>
<tr>
<td>Operating</td>
<td>$50,797,833</td>
<td>$25,398,917</td>
<td>$76,196,750</td>
</tr>
<tr>
<td>Capital</td>
<td>$9,630,801</td>
<td>$4,815,401</td>
<td>$14,446,202</td>
</tr>
<tr>
<td>Student Spending</td>
<td>$149,635,259</td>
<td>$74,817,630</td>
<td>$224,452,889</td>
</tr>
<tr>
<td><strong>Labor Income</strong></td>
<td>$94,769,273</td>
<td>$47,384,637</td>
<td>$142,153,910</td>
</tr>
<tr>
<td>Operating</td>
<td>$33,645,907</td>
<td>$16,822,954</td>
<td>$50,468,861</td>
</tr>
<tr>
<td>Capital</td>
<td>$3,582,701</td>
<td>$1,791,350</td>
<td>$5,374,051</td>
</tr>
<tr>
<td>Student Spending</td>
<td>$57,540,666</td>
<td>$28,770,333</td>
<td>$86,310,998</td>
</tr>
<tr>
<td><strong>Employment (Number of Jobs)</strong></td>
<td>7,687.4</td>
<td>3,843.7</td>
<td>11,531.0</td>
</tr>
<tr>
<td>Operating</td>
<td>5,886.0</td>
<td>2,943.0</td>
<td>8,829.0</td>
</tr>
<tr>
<td>Capital</td>
<td>49.2</td>
<td>24.6</td>
<td>73.8</td>
</tr>
<tr>
<td>Student Spending</td>
<td>1,752.2</td>
<td>876.1</td>
<td>2,628.2</td>
</tr>
</tbody>
</table>
DEMAND-SIDE ANALYSIS: METHODOLOGY
DEMAND-SIDE: METHODOLOGY DETAILS (1 OF 2)

FISCAL PERIOD

Hanover’s analysis is based on data for fiscal year (FY) 2019 as provided by the University of Calgary. This is an update from the 2009-10 data included in the March 2013 Economic Impact Report produced by the University of Calgary.

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.
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.

ECONOMIC MULTIPLIER

Based on a request from University of Calgary, Hanover Research used a multiplier of 1.5 (as used in the 2013 study) to estimate induced spending in Alberta driven by the University of Calgary’s direct institutional, student, and visitor spending.

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
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 **$249.0 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.
SUPPLY-SIDE ANALYSIS: ACADEMIC IMPACT
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).
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.
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.
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.

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.
- BHS 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
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)

<table>
<thead>
<tr>
<th>Educational Attainment</th>
<th>Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>University certificate or degree at bachelor level or above</td>
<td>$122,104</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>$102,285</td>
</tr>
<tr>
<td>Secondary (high) school diploma or equivalency</td>
<td>$62,595</td>
</tr>
</tbody>
</table>

### Salary Premium by Educational Attainment for Alberta Workers Ages 15 and Over, 2016

<table>
<thead>
<tr>
<th>Educational Attainment</th>
<th>Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor’s degree</td>
<td>$42,009</td>
</tr>
<tr>
<td>University certificate, diploma or degree above bachelor level</td>
<td>$62,986</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Credential</th>
<th>Estimated Direct Impact ($M)</th>
<th>Estimated Total Education Premium Impact ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor’s degree</td>
<td>$2,347.6</td>
<td>$3,521.3</td>
</tr>
<tr>
<td>Graduate diploma</td>
<td>$16.4</td>
<td>$24.6</td>
</tr>
<tr>
<td>Master’s degree or Doctoral/PhD</td>
<td>$818.5</td>
<td>$1,227.8</td>
</tr>
<tr>
<td>Total Education Premium</td>
<td>$3,182.5</td>
<td>$4,773.8</td>
</tr>
</tbody>
</table>

Source: Statistics Canada and University of Calgary alumni data; salary data adjusted from 2016 to 2019 dollars using Alberta Consumer Price Index.
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

<table>
<thead>
<tr>
<th>Description</th>
<th>Estimated Impact ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alberta GDP Growth (1981-2018)</td>
<td>$265,853</td>
</tr>
<tr>
<td>Total Factor Productivity (TFP) (x20%)</td>
<td>$53,171</td>
</tr>
<tr>
<td>Domestic R&amp;D (x69%)</td>
<td>$36,688</td>
</tr>
<tr>
<td>Share of Domestic R&amp;D by Alberta Universities (45.9%)</td>
<td>$16,840</td>
</tr>
<tr>
<td>Share of Domestic R&amp;D by University of Calgary (48.9%)</td>
<td>$8,235</td>
</tr>
<tr>
<td><strong>Research Impact (University of Calgary's share of domestic R&amp;D)</strong></td>
<td><strong>$8,235</strong></td>
</tr>
</tbody>
</table>

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.

Source: GDP growth numbers from [Statistics Canada](https://www.statcan.gc.ca) for 1981-2018; TFP from Martin (1998); higher education share of GDP from [Statistics Canada](https://www.statcan.gc.ca); University of Calgary R&D share from data submitted to CAUBO
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.
- 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.
KEY HIGHLIGHTS FOR MAIN RESEARCH AREAS

- 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 antimicrobial 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.
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.

**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

**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.
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

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

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
Estimates indicate that visitors to University of Calgary events contribute approximately $249.0 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 1.5x, this suggests a total induced impact of $249.0 million.

<table>
<thead>
<tr>
<th>Type of Expenditure</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Visitors</td>
<td>205,040</td>
</tr>
<tr>
<td>Average Length of Stay (Days)</td>
<td>2.2</td>
</tr>
<tr>
<td>Spending per Day ($)</td>
<td>$368</td>
</tr>
<tr>
<td>Total Direct ($M)</td>
<td>$166.0</td>
</tr>
<tr>
<td>Total Visitor Impact (Direct + Induced; $M)</td>
<td>$249.0</td>
</tr>
</tbody>
</table>

Source: Average length of stay in Alberta from Calgary area visitor profile; estimated spending per day adapted from Tourism Calgary Destination Report Q3 2019.
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:

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

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.
CONTACT

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