

November 04, 2020

CAFA's Submission to McKinsey & Company's Alberta 2030 Review

1) Impressions of Alberta's Advanced Education System

CAFA believes that Alberta has a strong and varied university system that all Albertans should be proud of—including two globally highly ranked research universities (University of Alberta and University of Calgary), Canada's premier distance learning university (Athabasca University), a strong regional research intensive university (University of Lethbridge) and two very well attended undergraduate university (MacEwan University and Mount Royal University). This breadth of educational and research opportunities should serve all Albertans as we navigate the post-COVID world and into the future.

While CAFA is very proud of all our institutions, we have noticed over the last decade that the national and international perception of our system has been decreasing. Our two largest research intensive universities have slipped down the international rankings in recent years: so much so that it is stretching the truth to claim that Alberta has two truly top 200 universities in 2021.¹ While many professors would take issue on how the internationally rankings truly reflect the teaching and research done in their field or institution, the slow and steady decrease in rankings should be worrisome—especially to governments and senior university administrators that highly value these international rankings. The regional and undergraduate universities have also undergone significant changes in their structures and reputation in the same time period.

CAFA does not believe an apparent reduction of quality has anything to do with the abilities of professors, researchers and administrators but rather with the loss of funding over the same time period and how universities in other jurisdictions have increased their funding in the same period. We believe that in order for Alberta's universities to regain their national and international importance, changes to the Campus Alberta Grants (the funding model) need to occur, in a manner that increases financial stability in the system. Other than the restoring of the Alberta Campus Grants to, at minimum, the 2018 levels, the Government of Alberta should focus on providing long term predictable funding (3 to 5 years into the future) that provides predictable funding to the institutions independent of economic and political factors.

Lastly, CAFA believes that universities should not be run on a business model: since this does not fit with the purposes of universities, including those in Alberta. CAFA sees universities as institutions that impart and nurture life-long competencies that enable and promote our graduates' future work careers, and their lives as active and engaged citizens. Some of our activities (such as research) are engines of innovation and creativity, that should remain unfettered for continued success. Attempts to manage such activities in a corporate structure, and

with the intention of short term commercial gain, will do irreparable harm to the future of innovation at Alberta's universities.

2) Producing Highly Skilled and Globally Competitive Graduates for the Future

CAFA believes that universities are not just for producing highly-skilled graduates, instead we believe that universities are a place to develop workers with an envelope of competencies as well as engaged critical citizens. The mission of universities is not to be vocational schools that teach a narrow band of skills, but rather impart a series of competencies that allow graduates to learn and grow in different jobs over the course of their career. This approach to student development is essential, since job-specific skills tend to have a shorter window of usefulness: as specific technologies and demand for many forms of employment are constantly changing. Strong development of core and transferable competencies allow university educated workers to adapt and grow with new workplace demands and changing economic environments. It is this flexibility and capacity for growth that employers are, or should be, searching for in future employees for the 21st century.

CAFA is concerned that a focus on specific vocational skills over competencies by the Alberta government, is short-sighted and will substantially diminish opportunities for university graduates. Competencies provided by a university education include higher impact soft skills and communications skills that are in significant demand in the labour market. Critical thinking, written communication skills, and knowledge of a second language are all in demand attributes that Albertan employers are looking for, but funding to non-STEM programs that emphasize such skills, are constantly under attack. Competencies in all fields are needed to diversify the Alberta economy and to make sure we have a variety of highly skilled workers within the province.

From the round tables of Alberta 2030, the government's own data shows that 92% of employers were satisfied or very satisfied with graduate skills preparedness in the 2018 Graduate Outcomes survey. In any university grading system, 92% would come out to an "A" and be described as "excellent - superior performance, showing a comprehensive understanding of subject matter."² While CAFA's membership would always look to improve their pedagogical methods, we believe that this high level of employer satisfaction demonstrates that the competencies taught in Alberta's universities are preparing students for future employment.

We would like to point out that the lower scores on the metrics that the Ministry of Advanced Education tracks are more technical skills that might be employer specific. For example, 'specialized tool, machine, equipment or software' has only a 79% preparedness rating. While this is lower than the average, CAFA believes it is a reflection on the specifics of the skills in demand: i.e. a university graduate might not have the proper software skills for a specific job because they were trained on a competing software program, or the employer is using a proprietary software program. By tailoring university education to provide the software skills that a few employers need is equivalent to choosing the winners; as other employers would still need to train their employees on their software needs and giving an advantage to certain companies over others. While academics pride themselves on teaching expansive competencies, we think such technical

skills should be part of employers' workplace training, since some of these technical skills will be employer specific.

CAFA strongly objects to the idea that employers and industry should shape or dictate the educational programs at Alberta's universities. Having industry choose the technical skills that graduates must learn, could actually damage Albertan students: since once they have graduated those companies or industries might not be hiring and the students' skills would be tailored to those companies or industries. Students learning fundamental, durable and adaptable competencies inherent in a current university education prepares them to meet the challenges of a rapidly transforming economic workplace, without potential detrimental restrictions imposed by parochial interests of specific employers or industries. Secondly, many programs have specific accreditation programs that must be academically controlled by appropriate personnel (such as nursing, social work, and pharmacology). In these fields, it is academically trained experts that must design the course materials and testing system, in order for our graduates to be able to gain their qualifications and be able to enter into their chosen field here in Alberta or in other provinces.

CAFA strongly believes in the academic freedom of all of our members. Part of this freedom is being able to teach what they believe is vital and pertinent information and skills in their field of expertise. Furthermore, our academic freedom is protected in our collective agreements and is standard practice in all jurisdictions across Canada. Academic programs and their quality are overseen by the General Faculties Council (GFC)—part of the collegial governance structure in which academics participate and where academic decisions are made. Academic proposals are introduced at GFCs in order for academic debates to occur. The merits of proposals are debated and votes are taken by academics present with respect to adoption.

CAFA believes in the value of work-integrated and experiential learning, as long as it meets the learning objectives set out by the GFC and the individual departments. We do see two issues that develop in relation to internships through the universities. First, if the program does meet the qualifications of the learning objectives, businesses often find themselves continuously training temporary workers. This leads to intern fatigue: in which the company does not see the value they are getting from these student-employees since the majority of the time, they are being trained and not working independently. The other issue is tied to work placements that are below the skill level of the student-employees. This often occurs in non-waged internships that have university students performing clerical and administrative functions that a college or high school graduate should be able to accomplish. While both of these types of work placements do provide the student-employee with opportunities to network, often they do not lead to a stable job post-graduation. CAFA supports work-integrated and experiential learning when those placements both involve meeting the learning outcomes designed by GFCs and have remuneration for the student-employees.

3) Creating A More Cost-Efficient System

Any definition of cost-efficiencies must not just include the expenditures in isolation, but whether

those expenditures produce the desired outcomes. CAFA cautions the Government of Alberta against too narrowly defining the outcomes to just the commercialization of research and vocational training for specific companies. These are just two of the many outcomes that universities produce for all Albertans, and others include: creative artistic pursuits, health & educational policy, fundamental research, and preparing our graduates for a full and active civic life. Any cost-efficiency model should take into consideration these variety of issues, all of which cannot be simplified to a simple dollar and cents formula.

CAFA believes there are ways for the PSE system to increase revenue without placing the burden solely on students and their parents through drastic tuition increases. CAFA supports our students' long-held position that their tuition increases should be capped at the Alberta Consumer Price Index (CPI) as this would enable students and their families to budget and financially plan for their education.³ Other ways to increase revenue, would be to increase the number of undergraduate students at our institutions and to harness the creative and innovative energies in the process of discovery research.

The idea to increase enrolment should be examined in relationship to both domestic students and international students. CAFA has some worries that the high cost of international tuition might cause administrations to favour international students over Canadians that wish to study in Alberta—this might produce a situation where qualified Alberta students are delaying their education (possible indefinitely) or travelling to other provinces to attend their programs of choice. This would be detrimental to our economy since this would stall our own economic recovery and send domestic student spending into other jurisdictions. Either way, increasing undergraduate enrolment would increase revenue, but would also increase expenditures. More students in the classroom means more capital costs (in terms of physical buildings, software, and IT support), and more instructional costs (English as a second language centres, more teaching staff, and more student services). While increasing enrolment does increase revenue in both the long and short term, all of the possible benefits of this strategy will not appear in the short term as these higher capital and instructional costs will mean more front-loaded expenditures as they are being set up.

Another way to increase university revenue is to increase protections in the Intellectual Property (IP) regimes at our institutions. During commercialization, the IP rights (and future royalties) are split three ways: the investigator/researcher, the university, and the investors. The details of this division are individually negotiated among the parties based on the costs of research and development and the commercialization process. For universities to increase their revenue, they must make sure their IP rights are protected and enshrined: that the money the university invests into the research (matching grants, lab space, patents, recruitment costs) need to be recouped and additional royalties are needed in order for the university to replicate this commercialization process and bring in more alternative revenue streams to their institution. Decreasing the IP rights of investigators and the institution itself will create a negative feedback loop where the best economic ideas are not developed here in Alberta; or if they are, that the institutions will not receive their proper share of royalties in order to reinvest in our province's research and development.

CAFA is very concerned about the consequences of further reducing costs or expenditures when our institutions are undergoing a roughly 20% reduction of Alberta Campus Grant in just three years. This massive reduction in government funding will mean serious structural changes that will likely not improve the quality of education in our province: more students in a class (online or in person) means less instructional and one-on-one time for students to spend with their professors, and less support staff to help with research or funding proposals in discovery research or commercialization. CAFA does not see these expenditure reductions as cost-efficient because while they reduce expenditures, they also are less likely to produce the research and learning outcomes that Albertans seek in their PSE system.

One area where CAFA believes there might be cost efficiencies is around senior administration costs. The current trend of seeing administrative cost constantly grow, just redirects government funding away from the classroom or research activity. The *Blue Ribbon Report* suggests that non-bargaining staff have their compensation rates unfrozen and increase these managers' overall compensation.⁴ This would further increase the expense of the senior administrators in Alberta, while Alberta already has salaries and compensation higher than our comparator provinces of BC and Ontario.⁵

CAFA does not believe that performance-based funding (PBF) is appropriate or a viable model for the PSE sector.⁶ We believe there is little to no scientific evidence that PBF produces the results desired by governments, and when those results are economic based they fall outside the traditional role of universities and dependent on the cyclical nature of the economy. Most recently a meta-analysis of all PBF studies has claimed that the effectiveness of outcome based funding "reveals null or modest effects of PBF on institutional outcomes primarily targeted by the policies."⁷ The Government of Alberta has proposed metrics for their PBF that falls mainly outside the university and reflect changes to the economy: this is very unusual as most PBF is structured around academic concerns (competition rates, international rankings, the number of patents held, etc.), while the Government of Alberta seeks to tie PBF to economic matters (graduate wages, graduate employment rate, employment in a related field, etc.) that are completely based on the external economic ecosystems, outside the control of any PSE institution. This short-sighted policy will create a situation where PSE funding is attached to the levels of foreign capital investment and the international price of oil, rather than the needs of Albertans.

4) Strengthening Post-Secondary Participation Rates and Accommodating Growing Enrolment

CAFA believes that Alberta's PSE participation rate is lower than other provinces because of our historically strong economy and our high level of market participation rates.⁸ When this is combined with Alberta's domestic migration patterns (more Canadians move to Alberta with the educational credentials attained in other provinces) this produces a skewed lower than average PSE participation rate when Alberta is compared against other provinces. In our current economic reality, with the international price of oil likely not to rebound to record levels, we believe that

over the next few years, Alberta's PSE participation rate will gradually fall in-line with the national average in Canada.

CAFA strongly believes that if the Government of Alberta wants to understand the unique needs that rural, indigenous and BIPOC (Black, Indigenous and People of Colour) students face in our PSE system, they should be actively engaged with these stakeholders. We understand that this type of consultation is time consuming, but CAFA strongly recommends that the Government of Alberta have meaningful consultation with multiple stakeholders from these groups to find out what ideas they have and what programs may meet their needs to improve access to the system by these underrepresented groups.

Lastly, CAFA is concerned with the idea that technology and remote learning can be “leveraged” in growing enrolment or increasing completion rates. As academic staff, we support new and innovative pedagogical approaches at our universities including online instruction, but this approach cannot be applied as one size fits all in our PSE system. Shifting classes to an online format has substantial costs, more than governments and administrators are often willing to acknowledge. Distance learning classes is not as simple as just recording a lecture; there are multiple ways in which the instructional staff has to change assignments and curricula in order to make a remote learning course. For example, Alberta's distance education university, Athabasca University, does not just assign a single professor to develop their online class. Instead there is an ecosystem of employees that develop the course together, including: the professors, academic coordinators, editors, learning designers, copyright officers, and multimedia web specialists. The tendency to move classes online assumes that the university can do more with less funding, but to maintain quality in the online setting often means more funding is needed. As teachers and lab instructors, CAFA associations regularly hear from our students about the issues of online courses, and how they prefer an in-person learning environment—we caution the Government of Alberta that increasing remote learning will likely lead to a decrease in completion rates as students find universities less hospitable and less accessible.

5) Commercialization of Research

Research is an engine of innovation and future economic diversification, but Alberta often funds research in a limited number of fields: specifically, those that have commercial and practical applications in the oil and gas fields. The Government of Alberta provides a generous amount of provincial research funding, often through Alberta Innovates, but these funds are far more directed than our comparator provinces' research funding. This unevenness of provincial funding is one of the reasons why our researchers do not capture more federal funding. If non-oil and gas research was much better funded by the province, this would help researchers build up funding track records and get projects off the ground—which in turn would put our researchers in a better position to obtain federal and non-governmental research funding. This is also true for our graduate students. Alberta needs to set up a system comparable to Ontario's Trillium Scholarship, which would allow young researchers to start building up a funding portfolio of their own while contributing valuable resources to the exceptional labs and projects they already work within.

The government of Alberta needs to move away from a primarily commercialization approach to research funding and towards a system that also substantially funds basic discovery research in all fields. Some basic research does not produce commercial products immediately but can establish critical building blocks that will drive a more robust economy in the future. Other basic research is in fields of social value but may not have the same commercial value. Examples of the latter would be in education, social policy, or health policy research that will be valuable to many Albertans and could possibly save the government from substantial amounts of future expenses. Research projects in the humanities not only enrich our society, but also contribute to processes where critical thinking, communications competencies, and research skills are taught and imparted to the next generation of employees and scholars.

The most important recommendation that CAFA would make to increase both basic discovery research and commercialization would be a peer-reviewed system of provincial research funding. Instead of economic lobbyists or companies directing research funding, the most novel and innovative breakthroughs develop out of projects that the researchers' peers, national and/or international experts, recognize as important. Commercialization is an important part of research, but in order to create new and globally competitive industries, and commodities for the market, there must be basic research to develop novel ideas and unique primary materials. Often a metaphor of a pipeline is used: in which basic discovery research is needed to constantly be refilling the pipeline that leads to new commercial products and innovations. Continuing to fund commercialization research over basic research will lead to a situation where there is little to nothing left of basic and fundamental innovation and discovery to turn into new products and services—both aspects of research, basic discovery and commercial need to be fully supported and funded by the provincial government. This new system of research funding needs to include an adjudication of projects based on peer-review; a system that encourages both basic research and commercialization research; and funding for a broad spectrum of fields and disciplines, including humanities and social sciences, not just STEM disciplines or oil/gas development.

Another important element of commercialization is maintaining the existing Intellectual Property (IP) regime: where IP is split between the investigator, the university and the investors. Alberta's faculty associations' collective agreements all have IP rights and procedures in them, and we think this model provides the flexibility to respond to every situation because all commercialization agreements are individually negotiated by all three parties. A standardized IP system would force all the parties into a contract that would not reflect that each commercialization process has different costs for the universities, investigators, and investors.

Any rollback or removal of the investigator/researchers IP rights would have a devastating impact on Alberta's universities to attract and retain talent, and especially among top tiered talent. Since every other jurisdiction in North America and Europe has IP rights for researchers, any shift away from these standard practices would mean researchers would choose other more IP-friendly jurisdictions to live and work in. CAFA is concerned that these types of changes would increase the likelihood of a brain drain as federally funded researchers pack up their labs and projects to move to other jurisdictions that protect their IP rights.

One of the issues CAFA has identified as a barrier to commercialization is the lack of well-informed investors willing to invest in Alberta’s universities and colleges, rather than Alberta’s fate of lower than average federal funding. In the *Fair Deal Report*⁹, they correctly point out that the Government of Alberta provides more research funding per capita than our comparator provinces (see Chart 1).

Chart 1: Alberta and Comparators for Government Research Funding

	2017 Population ¹⁰	2017-18 Federal Research Dollars	Federal Per Capita Funding	2017-18 Provincial Research Dollars	Provincial Per Capita Funding	2017-18 Total Research Funding	Total Research Funding per capita
Alberta ¹¹	4,286,134	327,115,000	\$76.32	253,889,000	\$59.23	937,833,000	\$218.81
Ontario ¹²	14,193,384	1,356,136,000	\$95.55	304,116,000	\$21.42	3,002,528,000	\$211.54
BC ¹³	4,817,160	482,178,000	\$100.10	89,404,000	\$18.56	903,320,000	\$187.52
Quebec ¹⁴	8,394,034	900,554,000	\$107.29	445,611,000	\$53.09	2,023,982,000	\$241.12

Using the same time scale as the *Fair Deal Report* and using the same source data cited in the *Fair Deal Report*, the disparity between Alberta and its comparator provinces runs far deeper than just in federal research funding. While Alberta attracts a significant amount of donations and grants by individuals (on par with Ontario), Alberta does lag farther behind on donations and grants from non-profit organizations and especially businesses (see Chart 2).

Chart 2: Alberta and Comparators for Private and Non-Profit Research Funding

	2017 Population ¹⁵	2017-18 Donations and Grants made by Business Enterprises	Business Funding Per Capita	2017-18 Donations and Grants made by Not-For-Profits	Nor-for-profit funding Per Capita	2017-18 Donations and Grants made by Individuals	Individual Funding per Capita
Alberta ¹⁶	4,286,134	109,428,000	\$25.53	134,986,000	\$31.49	7,305,000	\$1.70
Ontario ¹⁷	14,193,384	511,755,000	\$36.06	657,721,000	\$46.34	23,961,000	\$1.69
BC ¹⁸	4,817,160	83,519,000	\$17.34	184,053,000	\$38.21	784,000	\$0.16
Quebec ¹⁹	8,394,034	224,218,000	\$26.71	351,105,000	\$41.83	5,033,000	\$0.60

These data, along with information shared at the Alberta 2030 Guiding Coalition and Roundtable, demonstrates that Alberta has an investor problem concerning financing that comes from the private and non-profit sectors. CAFA suggests that both basic discovery research and commercialization could be improved by the Government of Alberta setting up an educational program highlighting the benefits of investing in Albertan universities for businesses and non-profits. We would hope the goal of such project would be to bring Alberta up to the levels of funding that Ontario and Quebec experience in relation to business and non-profit funding.

6) System Governance

CAFA strongly believes that the Government of Alberta needs a hands-off approach to our governance structures to respect and support institutional autonomy, which is the bedrock of the

academy. While this is true, we do acknowledge that there are a few places where the provincial government could make meaningful contributions to governance in the PSE sector: specifically, in the membership of the Boards of Governors (BoG) and how government representatives are trained.

We feel that each post-secondary BoG in Alberta must have multiple members who have been academics at the type of post-secondary institution that the particular BoG is responsible for. This can be academic emeriti of PSE institutions from within or outside the province. The point is that the Boards have arms-length members with strong academic backgrounds who understand how PSE institutions run, are familiar with best practices, and support the collegial governance culture of PSE institutions generally. Boards are currently overpopulated with those from the corporate world, a culture that is not innately supportive of collegial governance practices necessary in PSE institutions. Only one or a small minority of members of the Board with a corporate background would be required to provide oversight on financial matters.

As well, BoG members and chairs need to be better trained as to their roles and functions in the academic environment. It would seem from experience, that some BoG members see their role is to rubber stamp the president's plans. The BoG is supposed to oversee the actions of the president, making sure the senior administration is responsible to the people of Alberta and can remove the president if acting irresponsibly. The provincial government should institute a mandatory training program for all government appointees to BoGs that outlines their roles and responsibilities to the institution and all Albertans.

Regarding the General Faculty Councils (GFC), CAFA is concerned that there is a tendency for these bodies to be constructed in a manner that limits debate and is dominated by the interests of the university executive. Since the GFC is responsible for the academic matters (program, requirements, credentialing, etc.), one suggestion would be that the GFC is chaired by an experienced academic at the university, rather than the university president. The president could speak from the floor, but since not presiding, would not control debate. Another suggestion would be to include more academic staff representatives on the GFCs through dedicated positions for their important roles at the university—for example, there are often specific roles for tenure-track faculty (i.e. statutory faculty members and the appointments that represent academic staff associations), but there are far fewer roles for sessionals, lecturers, librarians, professional officers and trust researchers.

While in theory we have a bicameral governance structure, the university president chairs and presides over the GFC, and is also a voting member of the BoG. This concentrates exceptional power and influence in a single individual and risks, in the worst circumstances, both bodies serving their interests rather than Albertans and the academy. Reducing the power of the university executive and returning it to the BoG and the GFC would greatly increase the effectiveness and legitimacy of the collegial governance structure of the academy.

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- ¹ QS's ranking of University of Alberta is ranked 119 and University of Calgary is ranked 245 in 2021. <https://www.topuniversities.com/university-rankings/world-university-rankings/2021>
The Times Higher Education World University Rankings has U of A ranked at 131, and U of C ranked at 200. https://www.timeshighereducation.com/world-university-rankings/2021/world-ranking#!/page/0/length/25/locations/CA/sort_by/rank/sort_order/asc/cols/stats
- ² Mount Royal University's Common Grading System. <https://catalog.mtroyal.ca/content.php?catoid=5&navoid=174>.
- ³ Council of Alberta University Students. *2020-21 Priorities: Supporting Students, Supporting the Economy*. Page 1. <https://static1.squarespace.com/static/5b95cd14697a9812941dd36f/t/5f80a05410eebd39c20790ea/1602265174414/V2+marketed+priorities.pdf>
- ⁴ MacKinnon, Janice et al. *Blue Ribbon Panel on Alberta's Finances*. 2019. Recommendation 10. Page 7. <https://open.alberta.ca/dataset/081ba74d-95c8-43ab-9097-cef17a9fb59c/resource/257f040a-2645-49e7-b40b-462e4b5c059c/download/blue-ribbon-panel-report.pdf>
- ⁵ The University of British Columbia. *Canadian University Comparators*. 2020. <https://bog.ubc.ca/accountability-at-ubc/financial-reporting/canadian-university-compensation-comparators/>
- ⁶ CAFA's Consultation Submission: Outcome Based Funding. February 2020. <https://cafa-ab.ca/wp-content/uploads/2020/02/CAFA%E2%80%99s-Consultation-Submission-Outcome-Based-Funding-Model.pdf>
- ⁷ Ortagus JC, Kelchen R, Rosinger K, Voorhees N. "Performance-Based Funding in American Higher Education: A Systematic Synthesis of the Intended and Unintended Consequences." *Educational Evaluation and Policy Analysis*. 2020;42(4):520-550. Page 541.
- ⁸ According to Statistics Canada, in Sept 2020 Canada's labour market participation rate was 65.0% and Alberta's rate was 69.7%. This is a reflection of how Albertans, ages 15 and older, are participating in the economy and are not availing themselves of PSE opportunities. CAFA is concerned that the Government of Alberta might ignore labour market participation rates and focus solely on unemployment rates in their analysis of PSE participation and completion rates. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410028703>
- ⁹ Fair Deal Panel: Report to Government. May 2020. Recommendation 17, Page 39. <https://open.alberta.ca/dataset/d8933f27-5f81-4cbb-97c1-f56b45b09a74/resource/d5836820-d81f-4042-b24e-b04e012f4cde/download/fair-deal-panel-report-to-government-may-2020.pdf>
- ¹⁰ Statistics Canada. [2019]. *Canada at a Glance 2018: Population*. Table 1: Population estimates. <https://www150.statcan.gc.ca/n1/pub/12-581-x/2018000/pop-eng.htm>
- ¹¹ Statistics Canada. [2019]. *Revenues of universities and degree-granting colleges: Alberta*. Table: 37-10-0026-01. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710002601&pickMembers%5B0%5D=1.10&pickMembers%5B1%5D=2.1&pickMembers%5B2%5D=4.4>
- ¹² Statistics Canada. [2019]. *Revenues of universities and degree-granting colleges: Ontario*. Table: 37-10-0026-01. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710002601&pickMembers%5B0%5D=1.7&pickMembers%5B1%5D=2.1&pickMembers%5B2%5D=4.4>
- ¹³ Statistics Canada. [2019]. *Revenues of universities and degree-granting colleges: British Columbia*. Table: 37-10-0026-01. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710002601&pickMembers%5B0%5D=1.11&pickMembers%5B1%5D=2.1&pickMembers%5B2%5D=4.4>
- ¹⁴ Statistics Canada. [2019]. *Revenues of universities and degree-granting colleges: Quebec*. Table: 37-10-0026-01. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710002601&pickMembers%5B0%5D=1.6&pickMembers%5B1%5D=2.1&pickMembers%5B2%5D=4.4>
- ¹⁵ Statistics Canada. [2019]. *Canada at a Glance 2018: Population*. Table 1: Population estimates. <https://www150.statcan.gc.ca/n1/pub/12-581-x/2018000/pop-eng.htm>
- ¹⁶ Statistics Canada. [2019]. *Revenues of universities and degree-granting colleges: Alberta*. Table: 37-10-0026-01. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710002601&pickMembers%5B0%5D=1.10&pickMembers%5B1%5D=2.1&pickMembers%5B2%5D=4.4>

¹⁷ Statistics Canada. [2019]. *Revenues of universities and degree-granting colleges: Ontario*. Table: 37-10-0026-01. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710002601&pickMembers%5B0%5D=1.7&pickMembers%5B1%5D=2.1&pickMembers%5B2%5D=4.4>

¹⁸ Statistics Canada. [2019]. *Revenues of universities and degree-granting colleges: British Columbia*. Table: 37-10-0026-01. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710002601&pickMembers%5B0%5D=1.11&pickMembers%5B1%5D=2.1&pickMembers%5B2%5D=4.4>

¹⁹ Statistics Canada. [2019]. *Revenues of universities and degree-granting colleges: Quebec*. Table: 37-10-0026-01. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710002601&pickMembers%5B0%5D=1.6&pickMembers%5B1%5D=2.1&pickMembers%5B2%5D=4.4>