Beyond Chalkboards:

CASA's 2016 Innovation Agenda Submissions

CASA | ACAE

Executive Summary

Students are the innovators of the future, and to succeed they need access to modern, high-quality programs at Canadian educational institutions. Universities and colleges are built to educate students, develop global citizens, support research, and foster a sense creativity that will benefit Canadian society both socially and economically.

These institutions also play a central role in partnering with the private sector, civil society and government. These partnerships support research and skills development for students ensuring that they have hands-on experience and the chance to develop new ideas before entering the workforce of tomorrow. If the federal government is to advance its innovation agenda, investments in post-secondary education must be at the core of its plans.

The federal government must play a central role in ensuring all Canadians have access to high-quality education and skills development in order to create a more innovative and entrepreneurial citizenry. That is why the Canadian Alliance of Student Associations (CASA) is calling on the federal government to invest in students and post-secondary education as a means of making Canada a global innovation leader.

Recommendations:

» Expanding student financial aid and experiential learning
» Attracting and retaining international students
» Research funding reform
» Investing in comprehensive labour market information
» Transitioning graduates to the workforce
» Investing in education through digital infrastructure
» Supporting open educational resources
» Protecting student intellectual property

How do we work together to equip youth with the right skills for the future economy?

The Canadian Alliance of Student Associations (CASA) believes that equipping youth with the right skills for the future means ensuring all Canadians have access to quality post-secondary education. Canadians continue to turn to universities and colleges in order to enhance their skills, and the government must continue to take an active role in ensuring that education is accessible for all.

The government has already taken a strong role in promoting post-secondary access when it increased funding to the Canada Student Grant Program (CSGP) by 50% in Budget 2016. As of fall 2016, CSGP will support over 338,000 college and undergradu-

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ate students with non-repayable up-front grants. While the CSGP has helped ease debt burdens for many undergraduate and college students, debt levels have been steadily increasing for graduate students. The rising debt level is particularly worrisome, as insufficient financial aid for graduate studies has long been identified as a key factor in the high dropout rates of these programs.

Canada is falling behind peer competitor countries in producing masters and PhD graduates. The Conference Board of Canada rates Canada's PhD graduation rate as a "D", ranking second-last among peer competi-

"37% of unpaid interns received a job offer out of their bachelor's degree, compared to 35.2% of those who didn't participate in an internship at all."

tor countries[1]. Graduate degrees have proven economic value, with graduates enjoying higher incomes and lower unemployment rates. Despite this, too many students are

unable to gain access to or complete these programs due to financial barriers, with 4 in 10 students reporting financial concerns impacting their decision to attend graduate school[2].

The federal government must ensure it is adequately and equitably supporting all students, including those who choose to pursue graduate studies. These programs must be made accessible for any qualified student. **CASA recommends that the federal government invest $47 million per year into the CSGP and allow master's and doctoral students to access the program.**

Once in-study, Canada can do more to ensure all students have the ability to engage in compensated experiential learning opportunities, regardless of their program of study. These experiences provide students with the opportunity to gain valuable on the job skills they need to be successful in the workforce. That is why paid internships, apprenticeships, and co-ops continue to be linked to strong employment outcomes.

The National Association of Colleges and Employers revealed that just 37% of unpaid interns received a job offer out of their bachelor's degree, compared to 35.2% of those who didn't participate in an internship at all. In contrast, over 63.1% of those who participated in paid internships received a job offer post-graduation[3]. This data suggests that unpaid internships serve little benefit for those working them and often prove to be exploitative in nature.

Past government initiatives have focused on targeted training in certain subjects or areas of the economy. **Rather than shifting priorities in an attempt to predict economic trends, the federal government can better support students through stable and broad-based programs that are widely accessible.** Compensated co-op and internship opportunities are imperative in ensuring students get the skills they need to transition to the workforce.

How can Canada become the best country in attracting and developing talent?

We live in a world that is becoming ever more interdependent, interconnected and complex. To secure Canada's place amongst its global neighbours, we must do more to ensure Canada's post-secondary institutions are attracting talented international students and supporting them in their transition to citizenship. In doing so, Canada will ensure its competitiveness on the global economic stage.

In 2013, there were more than 221,000 international students at Canadian post-secondary institutions[4]. This represents a vast pool of highly skilled and motivated potential Canadians who already have the education and skills to thrive in this country. A highly educated and skilled workforce undeniably drives innovation. Attracting and retaining international students is essential to Canada's ability to meet the skills challenges of the future and to establish itself as a competitive force. [5] Yet, Canada continues to trail other OECD nations in their actual support of international students.

International students who aspire to pursue a Canadian post-secondary education face many barriers. They must pay international tuition fees which are triple those of domestic students[6]. International students from lower income backgrounds are not eligible for public or private loans, nor do they qualify for most federal scholarships or grants. In addition to higher tuition fees, international students need to spend hundreds of dollars in visa costs just to apply for the opportunity to study and work in Canada. If our country is to continue attracting top-quality international students, we must invest in reducing barriers for those international students, including those who are unable to afford the up-front costs.

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There are significant numbers of international students who would benefit from needs-based and merit-based support for their studies. In Europe, the Erasmus Mundus program has a budget of near-ly $460 million Euros to support over 10,000 international students who demonstrate merit and need. Existing scholarships for international students in Canada focus on particular political and economic partners[7], and high-level research, however, there is little emphasis on support for students struggling financially. **That is why the Canadian Alliance of Student Associations (CASA) is calling on the government to create international student bursaries to support international students from low-income backgrounds while they complete post-secondary education in Canada.**

Canada must also do more to ensure international students have clear pathways to permanent residency and citizenship. In January 2015, Citizenship and Immigration Canada (CIC) introduced a new system for processing applications from skilled immigrants, called "Express Entry". Under this system, points are awarded to applicants based on a number of factors including age, education, skills, work experience, and language abilities. Candidates who accrue more points will be given a higher priority for immigration. Work on campus, however, is often not counted as work experience even when it is directly related to the areas in which a graduate would choose to work – experience such as teaching assistantships or research assistantships.

International graduate students have already shown themselves as being adaptable to living and working in Canada. They have done this through their studies and have gained the skills necessary to successfully continue living here. If the goal of the Express Entry system is to identify skilled immigrants with the highest chance of thriving in Canada, value should be assigned to previous experience living and working in Canada during their studies.

In 2011, more than 57,000 newcomers were admitted under the FSWP, making it the preferred pathway for newcomers to apply to work and stay in Canada[8]. Under Express Entry, only 13,214 newcomers were invited in 2015 to apply for perma-

nent residency in Canada[9]. In that same timeframe, over 191,000 individuals completed an Express Entry profile.[10] It is clear that this policy shift has made it more difficult for individuals to settle in Canada and contribute to the economy.

To fulfill the goal of retaining as many highly trained individuals who received graduate degrees from Canadian insti-tutions, there are several ways in which Express Entry could be improved. These include ensuring that on-campus work such as teaching or research assistant-ships are recognized as "employment" for Ph.D. students on a study permit; and revising the point system to consider the relevant experience living and studying in Canada of graduate students.

How do we make best use of our science and research strengths?

Fostering a strong national research and innovation system is crucial to sustaining Canada's economic prosperity and long-term growth. That is why the federal government must take steps to reform the tri-council granting agencies (Canadian Institutes of Health Research (CIHR), Natural Sciences and Engineering Research Council (NSERC), and the Social Sciences and Humanities Research Council (SSHRC)). These reforms will maximize the government's investments in research, and benefit researchers across the country.

A number of reforms are necessary to ensure a more fair and supportive process for student research applicants. Specifically,

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the Canadian Alliance of Student Associations (CASA) recommends tri-council granting agencies adopt policies on harmonized application approaches, feedback on applications, and non-discriminatory anonymous application rules. These low-cost reforms would have a major impact on the ability of students to plan for their academic years, reduce the stress and anxiety associated with the application process, and increase fairness in the disbursement of funds among these research agencies.

For master's students, there is the "Canadian Graduate Scholarship – Master's" Program (CGS-M) that supports up to 2500 students across Canada each year and is managed jointly between the three tri-council granting agencies[11]. Each year, institutions are allocated a certain number of CGS-M scholarships they can award from each tri-council agency. Students must apply on a harmonized research portal website created for the tri-council agencies[12].

This harmonized approach for master's students is successful in reducing confusion; however there are aspects that remain in need of improvement. In the 2015-2016 academic year, CGS-M scholarships were due at various institutions by December 1st, 2015 but the next correspondence that students would receive would be on April 1st, 2016 when they would be informed of the result of their application[13]. For four months, there is no correspondence to applicants. **All CGS-M applicants would benefit from the creation of a more transparent evaluation process, which would engage students and inform them of the status of their application on an ongoing basis.**

While having the centralized research portal website is useful for master's candidates and administrators to navigate, the application process for doctoral students is not nearly as streamlined. Doctoral scholarships within the tri-agencies are not jointly managed, with each different council agency having different criteria, timelines, and available awards. Wide variability also exists in how doctoral awards are processed, with some applicants applying directly to the granting agency and in other cases, through their home institutions. The application process should be stream-

lined and consistent for all students across Canada, similar to the harmonized CGS-M application process and Research Portal for master's students.

Furthermore, a critical step in the evaluation process is still missing across all levels of tri-council agency scholarship awards: feedback. Very little, if any, feedback is given to unsuccessful tri-council agency award applicants regarding their application. This feedback could be critical for students who decide to apply for next year, as well as, valuable feedback for master's candidates who then go onto become doctoral students.

Improving anonymity in applications is an important reform for resolving two areas of concern for many student applicants. First, this would assist in eliminating personal bias that may arise from personal relationships in academic settings, and secondly it would help to eliminate the chance of other biases based on race, gender, or cultural background, by keeping those aspects of the applicant confidential and separate.

Anonymity is important because the student's home department does the first evaluation on a student's application. Graduate students can develop strong personal relationships with faculty in their department and it is due to those relationships that applications cannot be objectively evaluated at the department level.

Studies have also shown that scientists (both female and male) have shown bias when reading CVs based on the assumed gender of the applicant as well as on names that are 'non-anglicized'[14]. In a popular study where the same CV was randomly assigned a male or female name, both men and women who evaluated the CV were considerably more likely to hire the male candidate than the female candidate[15]. The introduction of a blind or anonymous CV/application process would mean there is a less likelihood of bias in the assessment.

In conclusion, it is important that the federal government review and update its tri-council agency evaluation protocol for funding applications. CASA values the significant investments in research made by this government in Budget 2016, but believes those dollars will be best allocated if they are coupled with an updated funding system.

How can we increase demand for science, technology, engineering and math graduates?

Making informed career decisions has always been challenging for youth who are at the beginning of their professional lives. Balancing academic interests, program affordability, and job prospects is becoming more difficult in the twenty-first century

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workforce. Compounding that is the reality that we live in an era where labour shortages continue to exist while thousands of young Canadians find it difficult to find a

job. Comprehensive labour market data is needed for young people to make informed career decisions as well as to inform government in their own policy development. This data could influence the quality of education, workforce investments and perceptions regarding the 'skills gap' between the needs of employers and the education provided to recent graduates.

Details of suggested reforms can be found in the report entitled "Working Together to Build a Better Labour Market Information System for Canada", and include measures such as an improved job vacancy survey, stronger local labour market analysis in Service Canada, and other measures.

Further to these reforms, there are several unknown and misunderstood factors in the area of youth employment. We do not have

consistent, nationwide data pertaining to the factors that influence Canadian employers' choices with regards to hiring youth. Nor are we equipped with detailed breakdowns as to which youth populations face the greatest difficulties in finding employment, limiting our ability to reach out to the right youth, in the right way, in order to build relevant programs and implement intelligent social policy. We also lack data on local, regional, and provincial contexts that impact the state of youth employment.

Existing labour market indicators suggest that there is already a high demand for science, technology, engineering and math graduates (STEM), but growth is hampered by insufficient supply of graduates in these fields[16]. Rather than looking for methods to increase the already high demand for these individuals, government should examine ways to reduce barriers to individuals who have traditionally not participated in these areas of study to increase the supply of trained graduates to fill those jobs.

Government must have the pertinent resources made available to them in order to make data driven decisions. In doing so, it can shape policy that will influence education and the private sector based on the reality of the day. Government must also ensure that the decisions it makes in regards to the labour market are proactive rather than reactive. Labour demands are ever changing and government policy should reflect that. **That is why CASA has continued to call on the federal government to continue to invest in comprehensive labour market information systems.**

How can businesses, institutions, and governments attract talent and investment?

Transitioning and integrating young Canadians into the labour market means investment is needed from government, post-secondary institutions, and the private sector. Not all young people are able to successfully make the transition into the labour market despite having education and qualifications. In Canada and other OECD countries, this group is identified as "Poorly Integrated New Entrants", or (PINEs), and they represent a potential source of talent for companies wishing to hire and expand, but companies and youth need assistance in making those connections between young people and jobs.

This group of youth often face stereotypes, diversity barriers, a lack of available career services, skills mismatches, and obstacles to earning and working while studying.[17] They find themselves frequently moving between temporary jobs or unemployment, even when the economy is growing.

In an extensive study on this specific group of youth, the Canadian Career Development Foundation makes the following 8 recommendations that the federal government should implement to support the reduction of Canadian PINEs:[18]

1. A well-coordinated, highly visible youth school-to-work transition strategy at the national level;
2. Further research into Canadian PINEs;
3. Consideration of a four-pronged approach to PINE reduction that would include post-graduate, early intervention, demand-side, and diversity strategies;
4. Increase access for all youth to career education and a range of work experiences;
5. Increase access to apprenticeships and to Vocational Education and Training (VET) and dual systems;
6. An employer Consultation and Engagement Strategy;
7. Focus on local labour market needs; and
8. Evaluate programs and policies with a database for all to share and learn;

(CASA supports these recommendations, and believes that implementing them will substantially help youth integrate into the labour market.

A better understanding of PINEs would help the government address issues around youth employment into the future,

but there are already made-in-Canada solutions available. For example, under the Quebec law to Promote Workforce Skills Development, employers are mandated to spend 1% of total payroll on training such as formal courses, apprenticeships, salaries to interns, and other workforce development programs. Those that do not

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meet those obligations are required to pay a contribution equal to the difference between 1% of its total payroll and the amount spent on training to the Workforce Skills Development and Recognition Fund[19].

The policy also ensures that this would not put a large amount of financial burden on small business; employers with a payroll of less than $1 million are not subject to the legislation. Employers can get a certificate that attests to the quality of their training initiatives and then not have to report training initiatives annually to Revenu Quebec. Research on the effect of this policy carried out by Benoit Dostie and Marie-Pierre Pelletier (SRI-2005) found that Quebec has more formal training than all other prov-

inces (with the exception of Saskatchewan) and that formal training has a greater positive impact on productivity than informal training[20].

This policy addresses what could be described as Canada's "employer training gap". Canada spends significantly less than the United States on learning and development for employees, roughly 64 cents for every dollar spent in the states. This would help to reverse the downward trend in spending on training by employers, as well. According to Conference Board of Canada statistics, spending (in constant dollars) has declined by about 40%. This peaked in 1993 at $1,207 per employee and dropped to $705 in 2013[21].

CASA believes that the private sector must play a larger role in attracting, developing and retaining talent. That is why CASA believes that the federal government should adopt the model used in Quebec to create a Canada Training Incentive. This would provide young people leaving their post-secondary educations with the necessary support to have a successful transition to the workforce.

What do we need from our digital infrastructure? How fast can we transition?

Digital infrastructure has become crucial in the delivery of post-secondary education in Canada, for those in the classroom and for those participating through distance education.

The success of a post-secondary institution depends on its facilities, services, and infrastructure almost as much as it does on teaching and research. A quality educa-

"By offering distance education options, the educational attainment gap faced by First Nations communities may begin to close."

tion requires not only excellence from the courses and instructors, but also from the facilities in which these courses take place.

Digital infrastructure includes internet data, hardware, and software, as well as other technical software mechanisms needed to allow them to work together. As digital infrastructure supports the use and connections between those components and physical content, it enables "exciting, new and more productive ways of teaching, learning, and doing research."[22]

As important as this infrastructure is, there still exists a "digital divide" where some areas (largely in or near urban centres) have better access to a quality internet connections than others. Although most Canadians live in cities with access to high speed internet connections at competitive costs, 19% of Canadians or about 6.3 million people live in rural or remote com-

munities that do not.[23] This lack of access to reliable, affordable connections that are capable of supporting modern online media leaves millions of Canadians potentially unable to fully participate in the growing field of online education.

The Truth and Reconciliation Commission's Report also identifies the need for improved IT infrastructure for First Nations communities that are often in these rural and remote locations. Supporting education in rural and remote communities will "allow First Nation community members to share information and learn as a collective."[24] By offering distance education op-

tions, the educational attainment gap faced by First Nations communities may begin to close.

Digital infrastructure is of paramount importance, especially for those pursuing education from First Nation and rural communities throughout Canada. Further investments must be made to close the digital divide seen between urban and rural communities. **That is why CASA is calling on the federal government to prioritize educational institutions when investing in digital infrastructure development for those in rural and remote communities.**

What are innovative ways to develop stronger digital skills among Canadians?

Open-education resources (OERs) are teaching, learning, and research materials that are part of the public domain under an intellectual property license that allows them to be used and repurposed free-

"The open and collaborative method in which OERs are produced encourages educational innovation, and it both supports and takes advantage of the development and use of emerging technologies."

ly.[25] Examples of OERs include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.[26]

Open resources provide non-discriminatory access to the resource, while allowing for sources to be adjusted, amended for specific teaching practices, and shared many in courses.[27] OER refers to "digitized materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research." This allows a greater number of learners to access educational materials easily and with lower costs.

Offering a wide range of opportunities for learning is a cornerstone of an effective educational system, and removing barriers to learning is a fundamental step in achieving an informed and capable society. With technological advancements, the landscape of learning has shifted and so too

have the methods for delivering teaching.

The flexibility of OERs allow for quality information to be more accessible, resulting in wider participation in higher education. OERs are also a factor in breaking down the barriers between formal and non-formal learning. The open and collaborative method in which OERs are produced encourages educational innovation, and it both supports and takes advantage of the development and use of emerging technologies.[28] Adoption of OERs in place of traditional textbooks in post-secondary settings has been correlated with increased student performance and increased student retention from having a better, customized learning resource and more flexible access[29].It not only fuels the further advancement of knowledge, it brings scientists and scholars the recognition that advances their careers.[30]

The OER movement is expanding globally. As of 2016, the Open Policy Network lists 3 Canadian Provinces and 26 US states that have already launched OER initiatives[31], and UNESCO adopted the 2012 Paris OER Declaration urging governments to promote the use of open resources globally[32]. In Canada, British Columbia has adopted the use of open textbooks for a number of courses, improving the quality of materials available to students and saving them money.

OERs are an opportunity to introduce timely, relevant, thorough and cost-effective learning tools to academic settings. These resources can produce better education and skills for learners and increase the standard of human capital for society. Government should have an interest in supporting OER projects because they increase access to learning for all of society and are capable of reaching non-traditional student groups, fostering participation by more citizens in higher levels of education.

CASA believes that Government has an invested interest in supporting OER projects because they increase access to learning for all of society and are capable of reaching non-traditional student groups. These projects improve the quality of materials and save students money while making programs more accessible. Supporting these projects at a national level would be an investment that reaps dividends in the long term.

How can regulations be designed to promote innovation across key sectors?

Canadian post-secondary institutions must do more to ensure they are supporting innovation amongst their faculty and students. One area in need of improvement is intellectual property (IP) in post-second-

"Protecting student IP rights is an important element in fostering an innovative process in the post-secondary education sector and society as a whole."

ary education. IP can be defined as the tangible products of research and creative intellect; the fixed expression of ideas including, but not limited to, inventions, compositions, software, music, art, designs, photographs and processes.

Students, in particular graduate students, often create IP in the course of their studies and research. University policies on the ownership of such property are not consistent, or widely circulated, and are often formed without the student's best interests in mind. The inconsistency of policy concerning IP at universities and colleges unnecessarily complicates the process of choosing a school or a program of study. These inconsistencies also create barriers for students in innovating and potentially partnering with the private sector. Within Canada, only two institutions have IP policies that support full ownership to the creators of intellectual property – Dalhousie and Waterloo[33], and even in these cases the division between instructors and students is not always clear.

It must also be acknowledged that students are not on an equal footing when negotiating IP rights with supervisors, departments or university administrators. These people often have influence over the student's access to funding, examination committee recommendations, teaching assistant assignments and letters of recommendation. The power dynamic between the student and their supervisor, department and administration is a direct result of the university structure, and therefore the university has an obligation to ensure that the interests of the student are protected.

Protecting student IP rights is an important element in fostering an innovative process in the post-secondary education sector and society as a whole. The incentive of sole ownership is an important motivator for students. Ownership rights allow students to seek out partnerships with the private sector in order to bring their IP to market. Improving IP protection for students must be seen as a means in which to create more entrepreneurs and innovative Canadians.

CASA proposes that government adopt a framework for the protection of student intellectual property rights. This framework would serve as set of criteria by which to assess the commitment of institutions to the intellectual property rights of students.

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Our Members

About CASA

Established in 1995, the Canadian Alliance of Student Associations (CASA) is a non-partisan, not-for-profit national student organization composed of 21 student associations representing 250,000 post-secondary students from coast to coast. CASA advocates for a Canadian post-secondary education system that is accessible, affordable, innovative, and of the highest quality.

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