

Pre-Budget Submission to the House of Commons
Standing Committee on Finance

August 2016

As the 150th anniversary of the nation's founding approaches, Canada must continue to advance as a global leader in science, technology and innovation to stimulate economic growth and foster the development of the highly-qualified individuals whose innovative ideas bolster the quality of life of all Canadians.

The University of Alberta has a reputation for excellence in translational and discovery-driven research, scholarship and creative activities across diverse areas of impact in science, humanities, social sciences and fine arts. U of A alumni have founded more than 70,000 organizations, creating millions of jobs and generating annual revenues of \$348.5 billion. The research output and economic activity generated by students and alumni directly affect growth in industries across Canada, stimulating innovation across sectors and encouraging job creation.

Investments in the post-secondary sector produce tangible economic benefits and enhance the overall well-being of Canadians. The Conference Board of Canada recognizes the post-secondary sector as a vital growth industry that generates more than \$55 billion in economic activity and supports approximately 680,000 jobs.ⁱ As the proportion of job openings requiring advanced degrees grows, this sector will deliver increasing rates of return for Canadians and Canada's social, cultural and economic development.ⁱⁱ

The Government of Canada has recognized the important role of this sector, as demonstrated recently through critical Budget 2016 investments in Canada's research and innovation ecosystem, including an additional \$95 million per year to the granting councils and the creation of the \$2-billion Post-Secondary Institutions Strategic Investment Fund. With the goal of maximizing the contributions of all Canadians to this nation's inclusive and sustainable economic growth, the U of A presents the following recommendations in advance of Budget 2017.

FOSTERING A DYNAMIC, INCLUSIVE AND GLOBALLY-COMPETITIVE NATION

In order to build an innovative, sustainable and prosperous nation, Canada must have a robust innovation ecosystem where individuals have the opportunity and resources to discover, develop and advance diverse, innovative ideas and translate these into the technologies, processes, products and services that fuel growth and contribute to the public good. Canada's universities are a critical component to building this thriving environment.

CANADA'S RESEARCH AND INNOVATION FOUNDATION

While the federal government has placed research, innovation and higher education at the centre of its policy agenda, Canada still has considerable progress to make to position itself at the forefront of global innovation. Canada's total higher education expenditure on research and development (HERD) has increased but other nations are outpacing Canada in their investments to their research and innovation foundations. In terms of HERD intensity (HERD as a percentage of GDP), Canada's international position has fallen from third in 2006 to seventh in 2014.ⁱⁱⁱ

An ongoing commitment on the part of the federal government to support university-based research is synonymous with a commitment to Canada's present and future prosperity. Canada's granting councils are the drivers of discovery and applied research through which universities are able to foster a rich research environment. By continuing to increase levels of unfettered investment, Canada can close this HERD gap and regain an international competitive edge.

1. Recommendation: Close the gap on global HERD intensity through sustained and unfettered support for the federal granting councils.

The Canada Foundation for Innovation (CFI) is a critical pathway through which industry and advanced research institutions collaborate to maximize the impact of knowledge resource output for all Canadians. The state-of-the-art research infrastructure funded by CFI positions universities to “attract, retain and train the top researchers from around the globe and fosters collaboration among the academic, private, public and non-profit sectors on a range of projects and across many disciplines.”^{iv} It provides university researchers with the necessary foundation to fuel innovation.

Over the last 10 years, the U of A has received approximately \$150 million from CFI for major infrastructure purchases, which has directly leveraged approximately \$225 million from other sources.^v Investments like the recent \$23 million from the John R. Evans Leaders Fund allow universities across Canada to strengthen research capacity and allow the best and brightest minds to continue developing the technology, knowledge and innovations needed to address global challenges.

2. Recommendation: Maintain current levels of support for the Canada Foundation for Innovation to support its programming, taking into account inflationary pressures.

INNOVATION CLUSTERS AND GLOBAL COMPETITIVENESS

In an increasingly globalized environment, there is a higher degree of pressure on research institutions and businesses to compete on a global level. Enhancing international collaboration opens doors to new knowledge and capital, stimulates the global labour market by creating jobs and filling labour market shortages, and can foster deeper trade relations, creating a larger market for Canadian goods and services.

Canada must be strategic in how best to attract and retain international investment and collaboration. University-driven, high-density innovation clusters are ideal for directly connecting international partners to the key players and experts, from discovery to market, in any given sector, signalling Canada’s readiness and capacity to collaborate in a long-term and mutually beneficial way. World-class research universities at the centre of clusters provide potential partners with direct access to a wide variety of competitive advantages, including access to pools of highly-qualified talent and state-of-the-art facilities.

The U of A is home to Canada’s largest energy-related research cluster and is a hub for local and international collaborations on energy-related solutions to the pressing issues of emissions reduction and climate change. This expertise spans various disciplines and is the foundation for many industry and international partnerships, including the the Sino-Canadian Energy and Environment Research and Education Initiative (SCENEREI) and the energy-focused collaboration with the Helmholtz Association, Germany’s largest and most prestigious research organization.

3. Recommendation: Enhance and strengthen the reach and impact of Canadian innovation clusters by providing a federal funding program for universities to attract and expand international partnerships.

BUILDING AND SUPPORTING CANADA'S HIGHLY-QUALIFIED WORKFORCE

Universities are incubators for an adaptable future workforce able to perform the complex tasks needed to thrive in the ever-evolving production system and increasingly competitive global environment. To provide the greatest returns for Canadians, universities build and foster supportive learning and research environments that attract and retain world-class faculty, students and staff.

EARLY CAREER RESEARCHERS

As other nations continue to develop their knowledge and innovation ecosystems, greater pressure is placed on Canadian post-secondary institutions to attract international talent and retain domestic researchers, faculty and students. To compete in this environment, Canada must provide its highly-qualified researchers at the outset of their careers with access to the necessary resources and support to ensure their potential is fostered. This talented, energetic and ambitious cohort of young researchers, which includes graduate students and post-doctoral fellows (postdocs), is the cornerstone of Canada's talent agenda.

Early career researchers are operating in a highly-competitive environment, often competing with comparatively experienced and more established researchers for limited grant funding. Existing funding that accounts for differences in experience, including NSERC Discovery Grants, is immensely valuable but limited in scope and often does not support particularly resource-intensive research projects or those utilizing multiple graduate students.

The most recent *Canadian Postdoc Survey*^{vi} from the Canadian Association of Postdoctoral Scholars and Mitacs shows that postdocs face complex issues including employment status ambiguity and poor compensation and benefits. Additionally, a recent cross-Canada survey from the Association of Canadian Early Career Health Researchers showed that 46 per cent of early career health researchers are considering leaving Canada, research or academia due to the challenging funding environment.^{vii} Canada cannot afford the loss of its burgeoning talent; more can be done to foster a supportive financial environment for young researchers to thrive and reach the top of their respective fields. The time to invest in early career researchers is now.

4. Recommendation: Invest in Canada's future innovators and job creators by creating and funding an Early Career Researchers Fund to be administered by the granting councils.

INVESTING IN THE POTENTIAL OF INDIGENOUS CANADIANS: CLOSING THE EDUCATION GAP

Canada's Indigenous population continues to face long-standing and pronounced inequalities. Improving the social and economic well-being of this population is a critical investment that will enable Indigenous peoples to realize their potential to fully contribute their talents to the economic, cultural and social prosperity of this nation.

The single most effective means by which the persistent conditions of disadvantage can be addressed is through education. Statistics Canada data shows an educational attainment gap in all levels of post-secondary, with the most pronounced difference at the university level; only 9.8 per cent of Indigenous peoples aged 25 to 64 hold a university degree compared to 26.5 per cent for the non-Indigenous population.^{viii}

Closing this gap is a vital investment that will generate huge returns for the Canadian economy through mechanisms that include lower unemployment, increased labour productivity, increased tax revenue, higher GDP growth and reduced strain on social and health services. The Centre for the Study of Living Standards estimates that closing the educational attainment gap by 2031 would result in national annual employment growth of 2.86 per cent and cumulative GDP gains of \$261 billion.^{ix}

OVERCOMING FINANCIAL BARRIERS

Financial barriers to education continue to be pervasive for Indigenous students, often cited as a significant reason for not completing their post-secondary education.^x In order to begin tackling barriers to full participation in all sectors of the Canadian economy, particularly in leadership positions, Indigenous students must be provided with sufficient financial support to obtain meaningful education. Budget 2016 contained important investments in primary and secondary education for First Nations children, providing a critical foundation for Indigenous Canadians to realize their full potential.

The cohort of Indigenous students pursuing graduate and post-graduate studies will only increase as Canada engages in closing the Indigenous education gap at the primary, secondary and undergraduate levels. It is time to invest more robustly in Indigenous students who wish to become thought-leaders and role-models for Indigenous youth who do not see themselves reflected in the current face of academia. One way to achieve this is to provide increased financial support to Indigenous students who wish to become these leaders at the top of their respective fields, able to concentrate fully on their studies and partake in campus life unburdened by financial stress.

5. Recommendation: Create and fund scholarships targeted to Indigenous students pursuing graduate and post-doctoral studies.

SUPPORTIVE AND CULTURALLY-RELEVANT LEARNING ENVIRONMENTS

Indigenous students continue to face formidable non-financial barriers to educational attainment including poor preparedness for higher education, discrimination, cultural insensitivity, limited access to culturally-relevant curriculum, familial obligations, alienation and isolation. These barriers are particularly pronounced in first-year university students, as for many it is their first experience in an urban setting far from home in which they are a minority on campus. Readily accessible, culturally-sensitive academic and personal supports and bridging programs are essential to easing the transition into post-secondary and improving retention and completion rates for these students.

As the only university in Canada with a Faculty of Native Studies, located in a city and province with one of the largest, youngest and most rapidly growing Indigenous identity populations in the country, the U of A is deeply committed to Indigenous student success, including finding innovative ways to overcome the substantial obstacles they face in obtaining a post-secondary education.

One such innovative approach is the university's commitment to constructing the Maskwa House of Learning, which would be the physical manifestation of the institutional commitment to intercultural dialogue and reconciliation while also housing the full range of institutional support and services that Indigenous students need to meet their mental, emotional, spiritual and physical needs.

Successful support services includes the Transition Year Program (TYP), which provides First Nation, Métis and Inuit students who do not qualify for regular admission with the additional academic, social, cultural and emotional support needed to be successful graduates within their faculty of choice. Demand for this program increases each year and, with additional funding, programs and initiatives like this could greatly expand the number of students served and the quality of services offered.

6. Recommendation: Create a new funding stream to expand and enhance successful university programming and initiatives that support Indigenous student retention and success.

ⁱ The Conference Board of Canada, *The Economic Impact of Post-Secondary Education in Canada*, November 2014.

ⁱⁱ OECD, *Promoting Green and Inclusive Growth*, p.17, June 2016.

ⁱⁱⁱ OECD, *Main Science and Technology Indicators*, p.63, 2016.

^{iv} Canada Foundation for Innovation, "What Is CFI?" n.d. Available online at <http://www.innovation.ca/en/AboutUs/WhatCFI>.

^v University of Alberta, *2016 Comprehensive Institutional Plan*, p.94, 2016

^{vi} The Canadian Association of Postdoctoral Scholars and Mitacs, *The 2013 Canadian Postdoc Survey: Painting a Picture of Canadian Postdoctoral Scholars*, October 2013.

^{vii} Association of Canadian Early Career Health Researchers, *Early Career Investigators (ECIs) in health research: final report of a cross-Canada survey*, April 2016.

^{viii} Statistics Canada, *The educational attainment of Aboriginal peoples in Canada*, December 2015

^{ix} Centre for the Study of Living Standards, *Closing the Aboriginal Education Gap in Canada: Assessing Progress and Estimating the Economic Benefits*, June 2015.

^x Statistics Canada, *The Education and Employment Experiences of First Nations People Living Off Reserve, Inuit, and Métis: Selected Findings from the 2012 Aboriginal Peoples Survey*, November 2013.