



UNIVERSITY OF CALGARY

**SUBMISSION TO THE HOUSE OF COMMONS
STANDING COMMITTEE ON FINANCE**

Prepared for:

HOUSE OF COMMONS STANDING COMMITTEE ON FINANCE

August 5, 2016

Introduction

The University of Calgary would like to thank the House of Commons Standing Committee on Finance for the opportunity to provide input into Budget 2017. The university recognizes and appreciates the government's commitment to strengthening Canada's university research capacity in Budget 2016. The government's investments in university research and in research infrastructure have created excitement on campuses across the country. Federal funding acts as the foundation stone of Canada's research ecosystem, creating opportunities and leveraging significant dollars from other governments, industry, the not-for-profit sector and other sources. Funding supports both ground-breaking discoveries and builds infrastructure that creates immediate economic stimulus and longer-term prosperity. Budget 2017 is an opportunity to make significant transformative investments that will foster innovation, enhance productivity and, over the long term, improve the livelihood of all Canadians.

The University of Calgary is celebrating its 50th anniversary this year. Located in one of Canada's most entrepreneurial, energetic and livable cities, the university's annual economic impact is almost \$8 billion. The university attracted \$358 million in sponsored research income in 2014-15 and has a very active knowledge translation program through Innovate Calgary. Our vision is to be an even greater university with global reach, while fulfilling our community's expectations by delivering academic and research excellence and societal impact. The university set the goal in its *Eyes High* vision of becoming one of Canada's top five research universities and has put in motion a major leap forward through our comprehensive Academic Plan and Strategic Research Plan.

Universities are drivers of research and development that provide significant societal, industrial, and economic benefit through the training of highly qualified individuals, development of new ideas, transfer of knowledge and commercialization of inventions and discoveries. Universities are at the centre of cluster economies that lead and foster adoption of innovative ideas and technologies, create better underlying conditions to grow companies, and reduce the costs for businesses to operate. The productivity growth that universities support strengthens all aspects of society and creates the conditions necessary for inclusive economic growth that benefits all Canadians.

Research and Innovation

Investment in research and innovation, from discovery science to the pilot stage, underpins Canada's ability to improve productivity across all sectors of society. University research contributes significantly to the development of new products and services, new ways of doing things and new job opportunities for Canadians. These outcomes build the knowledge economy of today and tomorrow, create clean growth and anchor competitive economic clusters – the University of Calgary for example, is at the heart of Calgary's emerging clean energy technology cluster. Canada's universities performed more than \$12 billion in research and development in 2014, accounting for 40 per cent of total Canadian R&D. Since the year 2000, Canada's universities have doubled the value of research collaboration with business and now conduct close to \$1 billion in research for businesses every year.

Strengthening the Canadian innovation ecosystem means building on the strong foundation outlined in Budget 2016. Investments in research and supporting infrastructure create the capacity for economic change and advance the national innovation agenda. Continued investments in research funding are needed to reverse Canada's decline in OECD rankings of Higher Education Expenditures on Research and Development (HERD). As Canada's competitors continued to invest in innovation, Canada fell from 3rd place in 2006 to 8th place in 2013, in terms of HERD intensity. The Government of Canada should reclaim Canada's 3rd place spot in the OECD for HERD investment intensity.

Recommendation:

1. The government should set the goal of reclaiming the 3rd place spot in the OECD for HERD investment intensity.

Tri-Council Agencies

The Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC), and the Social Sciences and Humanities Research Council (SSHRC) continue to play a foundational role in funding university research. Through the granting councils and their programs, such as the Canada Excellence Research Chairs and the Canada First Research Excellence Fund, the government invests in today's and tomorrow's research leaders. In 2014, the University of Calgary successfully recruited the university's first Canada Excellence Research Chair to lead the development of clean energy technology. Leading nanotechnology researcher Steven Bryant focuses on materials engineering for unconventional oil reservoirs—studying methods of improving both the environmental performance and productivity of Alberta's oil sands. NSERC supports researchers with the university's Calgary Advanced Energy Storage and Conversion Research Group (CAESR) and Centre for Advanced Solar Materials who continue to push the frontier of technology development for clean and efficient energy storage and conversion of electricity. This and similar support from the Tri-Council Agencies is creating the groundwork for a new low carbon economy, fueled by productivity growth and low environmental impact. Ensuring meaningful and unfettered growth in the funding of the Tri-Council Agencies in support of increasing Canada's HERD intensity will create the environment needed for the innovation agenda to flourish.

Continuing the upward trajectory of Canadian innovation as a new generation of researchers begins their careers is of utmost importance to the long term success of Canada as an innovation nation. Special attention must be focused on supporting the early careers of researchers as the country grows the talent pipeline for continued research excellence.

Recommendations:

2. Provide sustained, enhanced, unfettered funding to the Tri-Council agencies as a component of a suite of funding in support of Canada reclaiming 3rd place spot in the OECD for HERD investment intensity.

3. Enhance support for early career researchers.

Canada Foundation for Innovation (CFI)

The Canada Foundation for Innovation provides crucial support for the university research ecosystem. Investments by CFI make a difference. For example, the University of Calgary's McCaig Institute Mobility and Joint Health Facility (MoJo), supported with \$4,739,000 from CFI, links research with clinical practice to develop new techniques that can be employed in diagnostic imaging clinics, improving outcomes for Canadians while reducing healthcare costs. As Canada's research ecosystem grows, support for research infrastructure must grow with it.

Recommendations:

4. Provide sustained, enhanced, unfettered funding to the Canada Foundation for Innovation as a component of a suite of funding in support of Canada reclaiming 3rd place spot in the OECD for HERD investment intensity.

Big Science: Canada and the World

The Government of Canada should encourage international research partnerships—like the European Space Agency's Swarm Magnetic Field Mission partnership with the Canadian Space Agency and the University of Calgary—and ensure Canadians have the resources necessary to make significant contributions to international collaborations, at all stages of development in a timely manner, including as host nation when appropriate. Making the resources available for big science both in Canada and abroad, and ensuring they are significant, will have immediate benefits in spin-offs to the Canadian economy by developing new industries and capabilities. The federal government should develop a national strategy for major science investments, led by the Canada Foundation for Innovation and backed by sustained and enhanced funding. Such a strategy would add clarity and predictability to Canada's innovation ecosystem.

Recommendation:

5. Make available within the reinvestment in the Canada Foundation for Innovation resources to enhance it to develop, implement and fund a national strategy on big science in support of Canada reclaiming 3rd place spot in the OECD for HERD investment intensity.

Creating Opportunity for Canada's Indigenous Peoples

Education has the power to transform the futures of individuals, their families and communities.

By improving the education opportunities available for Canada's Indigenous peoples, we enable individuals to acquire the skills for success in today's economy. At the same time, student and faculty benefit from integrating Indigenous knowledge and perspectives into curricula, research, programs and services while continuing the journey towards reconciliation. Almost one-tenth (9.8%) of Indigenous Canadians had a university degree in 2011. In comparison, 26.5% of the non-Indigenous population aged 25 to 64 had a university degree.¹ The federal government should take the initiative to close this gap by increasing student financial assistance for Indigenous students in a comprehensive manner that supports the next generation of Indigenous leaders, as well as build a cohort of Indigenous faculty at universities across the country.

The University of Calgary is developing a comprehensive Indigenous Strategy, which reflects the needs of the community and harnesses institutional strengths. The strategy will build on the university's existing programs like the Learning Circles Bachelor of Social Work program, offered at Grande Prairie Regional College, Red Deer Regional College and other post-secondary campuses in Alberta. Working with First Nations institutions, the program is modified in collaboration with the community to include regional Indigenous traditional knowledge in teaching and learning.

Supporting access to education for Canada's Indigenous peoples will help close the gap in education outcomes that exists between Indigenous and non-Indigenous Canadians. This support must include collaboration with K-12 educators, creating bridge programs to facilitate transition to post-secondary education, and supporting individual students in their chosen career paths. Canada's universities are committed to ensuring Indigenous student access, retention and success. The University of Calgary offers an access program for Indigenous students called, Aboriginal Student Access Program—this credit-based transitional program provides enhanced cultural and academic support for Indigenous students.

Recommendations:

6. Increase student financial assistance for Indigenous students.
7. Provide access to new scholarships in support of graduate and post-doctoral studies for Indigenous students.
8. Create a program to support development of institutional-level programs and initiatives that support Indigenous student access, retention, and academic success.

Opportunities for Youth

¹ Statistics Canada. Education in Canada - attainment, field of study and location of study: National Household Survey, 2011

Great potential exists to provide career-boosting opportunities for Canadian students through work-integrated learning placements. By supporting pathways between universities and the workplace, more students will be equipped with the tools they need to transition into the workforce. Enrolment in co-op programs at universities jumped by 25% from 53,000 students in 2006, to 65,000 students in 2013. New initiatives such as a voucher program or a federal tax credit to support internships and the hiring of co-op students by the private sector and not-for-profits would pay dividends for society by further accelerating this growth.

An exciting opportunity exists to grow Canadian students' experience both in Canada and abroad. Canadian students engage in international exchanges at a level below our peer competitors, and in exchanges within Canada at a very low level. At the University of Calgary we have set the goal that 50% of our students will have an international experience before they graduate. These experiences will help students develop new skills and the knowledge of other cultures they need to succeed in today's workforce. As part of the coming celebrations of Canada's sesquicentennial, the Government of Canada should announce its support for 50,000 international student exchanges annually. This will not only equip a generation of Canadians with the cultural competencies to navigate our globalized world, but also create an enduring presence of student ambassadors for Canada around the world.

Recommendations:

9. Create a voucher program or a federal tax credit to incentivize the creation of work-integrated learning placements by the private sector and not-for-profits.
10. Create a student experience support fund to encourage student mobility abroad for 50,000 Canadian students annually by 2022.

CONCLUSION

Canada is presented with the opportunity to make substantial investments in our nation's future as we approach our sesquicentennial. Transforming Canada into the world's most innovative country, with more connections within our nation and abroad, while expanding opportunities for our Indigenous peoples are goals that are complementary. Each are worthwhile in their own right, but together they will contribute to the growth of Canada in ways that are more than a simple sum of their parts. Innovation creates a virtuous circle in our society: improving Canadians' quality of life, not only by greening our economy while increasing productivity, but by embracing social innovation and improving healthcare outcomes. When Canadians come together we can solve great problems, proving to ourselves and to the world that as a nation we are at the forefront of developing the society we need to lead the charge against the challenges of the coming century.