



a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

Submission to
the House of Commons Standing Committee on Finance

Pre-Budget Consultations 2014

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The University of British Columbia

Introduction

In 2017, Canadians will celebrate 150 years of Confederation. At the outset, a defining goal of Confederation was to connect Canadians from coast to coast through the most advanced technology of the day: rail. But rail was only the means to an end, ensuring mobility of Canadians and linking them economically to create a shared sense of purpose. Today, Canada continues to embark upon nation building projects that deepen connections between Canadians through strategies such as Digital Canada 150, the Building Canada infrastructure plan, and significant new investments in Canada's post-secondary system.

Canada's research universities have been remarkably successful in purposefully and meaningfully connecting with communities, businesses and entrepreneurs in Canada and around the world. Our universities produce ground-breaking results and are pivotal in Canada's social and economic development.

The Government of Canada has recognized the important role globally competitive institutions play in our collective success. For example, in Budget 2014 the government made the bold decision to spur greater Canadian leadership in global research and innovation through a \$1.5-billion, ten-year commitment to the Canada First Research Excellence Fund. The Fund builds on notable commitments to science and innovation during an economically challenging period. Despite the strains posed by the downturn in the global economy, the federal government has pursued policies supporting the robust innovation environment that underpins long-term prosperity and growth. Through the Science and Technology strategy, the Jenkins panel, and successive budgets that have balanced R&D investment and fiscal restraint, the government has acknowledged that a country's success is rooted in its ability to discover and innovate.

Celebrating its 100th anniversary in 2015, The University of British Columbia is intrinsically linked to the social and economic fabric of Canada and thus to all six themes outlined in this year's pre-budget consultation. This submission focuses on the following themes:

- Supporting families and helping vulnerable Canadians by focusing on health, education and training
- Increasing the competitiveness of Canadian businesses through research, development, innovation and commercialization
- Ensuring prosperous and secure communities, including through support for infrastructure
- Maximizing the number and types of jobs for Canadians

Consistently ranked as one of the top 25 public universities in the world, UBC has built a reputation for teaching and research excellence and a powerful capacity to connect Canadians with one another across our country's expansive geography and with our counterparts and communities around the world. With an estimated annual economic impact of \$12.7 billion, UBC has become an important economic engine for Canada, an attraction for international teaching and research talent, and a driver of innovation.

With nearly 60,000 students, UBC confers more than 10,000 degrees per year. More than 300,000 talented UBC alumni live and work in communities throughout Canada and around the world – communities as diverse as Vancouver's Downtown Eastside, BC's fertile Okanagan Valley and the bustling tech sector in Bangalore, India. UBC graduates work in industries that span economic sectors

in roles that are vital to keeping the economy moving and growing, such as mining, oil and gas, forestry, engineering, biotechnology, ICT, finance, business services, law, social and environmental services, healthcare, transportation, public administration, Aboriginal relations and community development.

Attracting over \$500 million in research funding annually, UBC's researchers are helping to grow Canada's international reputation and economic competitiveness while also working to improve the lives of Canadians. The contributions of approximately 4,000 researchers form the basis of UBC's research excellence. From education and healthcare, to clean energy and creative industries, to natural resources and nanotechnology, UBC advances innovations, solutions and partnerships that strengthen the quality of life and economic prospects of people across Canada—and beyond.

To help ensure UBC and Canada's other world-class research universities continue to leverage their strengths to further enhance Canada's socio-economic well-being, for Budget 2015, UBC recommends that the Government of Canada:

- Continue to build on Canada's research excellence through sustained funding for the Granting Councils
- Ensure state-of-the-art research infrastructure through predictable, multi-year funding for the Canada Foundation for Innovation
- Address Canada's shortfalls in productivity, talent development and entrepreneurship by working with universities to create a national strategy that better deploys university research and teaching strengths
- Enhance the national and international mobility of Canadian students, fostering networks and bonds across Canada and the world to bolster national unity and Canada's place in the world

Granting Councils

Research, discovery and innovation are fundamental to building a strong, globally competitive nation. While the Government of Canada has increased overall funding for the granting councils, total Canadian research spending is not keeping pace with international competitors (Canada ranks 21st of 36 OECD countries) or economic growth. Canada's university sector, by contrast, is ranked 6th in the world for the overall impact of its university-generated science and technology.

The Granting Councils are one of two foundational elements supporting this area of Canada's global strength. In supporting leading-edge research across disciplines, from graduate student scholarships to major grants for world-renowned scholars, the Granting Councils allow researchers to make new discoveries, form innovative ideas and address pressing challenges.

Countless Granting Council-funded projects at UBC have contributed to Canada's economic and social development. For example, James Olson's NSERC-funded research projects at UBC's Pulp and Paper Centre partnered with industry to revolutionize pulp processing equipment, leading to massive reductions in energy consumption, saving money and reducing greenhouse gas emissions across an important sector.

The Granting Councils are also an essential source of funding for discovery research that yields enormous social and economic benefits. UBC computer scientist David Lowe's research on computer vision, for instance, resulted in an algorithm that is now used by more than 20 companies and agencies in applications ranging from smartphone cameras to supermarket check-outs, robotics, and combatting Internet child exploitation.

The Granting Councils also support development of public policy. Led by Vancouver School of Economics professor Craig Riddell and funded by a \$2-million SSHRC Strategic Knowledge Cluster grant, the Canadian Labour Market and Skills Research Network has partnered with government to tackle labour market, education and training, and public policy issues facing Canada.

Continued support for the Granting Councils is essential for achieving such outcomes and for maintaining and growing Canada's international standing and competitiveness.

Recommendation:

Building on its commitment to long-term, sustained research funding, we recommend government continue to grow Granting Council funding to ensure Canadian researchers can contribute the new ideas, discoveries and solutions that underpin Canada's social, economic and cultural advancement.

The Canada Foundation for Innovation (CFI)

Programs delivered by the Canada Foundation for Innovation are the second foundational element of Canada's research and innovation landscape. As the largest source of grants for critical, cutting-edge research infrastructure, CFI provides researchers the physical tools they need to put ideas into action.

Over the last few years, by encouraging greater coordination of research infrastructure, CFI funding has fostered unique research collaborations that go beyond the laboratory. For example, in February 2014, UBC and Vancouver Coastal Health Authority opened the Djavad Mowafaghian Centre for Brain Health. The Centre unites cutting-edge research with patient care, changing the way we treat and study those with brain disorders – a new approach that would not have been possible without significant support from CFI to build and equip laboratories.

Among the many breakthroughs made by UBC brain researchers is Neil Cashman's development of a potential treatment that targets proteins in the brain that are associated with Alzheimer's disease. Cashman's CIHR-funded research has spawned a research partnership and technology license with Canadian pharmaceutical company Cangene to develop new therapies and potentially an entirely new class of drugs.

Continued investment in Canada's research infrastructure is essential to achieving the types of outcomes promised by the Centre for Brain Health and hundreds of other initiatives at UBC and across Canada.

Recommendation:

We recommend government maintain its commitment to CFI by providing predictable funding with new disbursements beginning in Budget 2016. Maintaining the level of funding that government has provided since CFI's inception will be vital in the coming years as older research infrastructure requires renewal and new research areas emerge.

Forging new connections: a national strategy for collaboration on innovation

UBC is committed to continually expanding its economic impact through innovation and knowledge translation. In September 2013, UBC announced an innovation strategy aimed at strengthening UBC's role as a driver of economic and social development. The strategy includes an overhaul and expansion of the university's e@UBC entrepreneurship program, the creation of a "concierge" service for the business community to facilitate access to UBC researchers, and an optimized process to bring to market new discoveries and technologies. Since October 2013, UBC students and faculty have registered more than 100 new venture ideas in diverse fields like energy efficiency, robotics, medical devices and digital media.

A number of other institutions in Canada are also focusing efforts on how to better apply university research and teaching to some of Canada's most pressing problems. Making these vital connections is an important step in addressing shortfalls in productivity, talent deployment, and entrepreneurship, but we cannot do this one university at a time. Canada needs a broader, comprehensive strategy - led by universities - to more thoughtfully and proactively tackle these challenges.

Recommendation:

We recommend the government collaborate with universities to develop a national, university-led strategy to better leverage research and teaching strengths to address shortfalls in productivity, talent deployment, and entrepreneurship that are unique to Canada.

Student Mobility

Successfully navigating an increasingly complex and interconnected world requires an understanding of and ability to function in different contexts and cultural systems, whether in Canada's diverse social and economic landscape or in other countries, in different languages and among different customs. Universities can foster the development of these skill sets by immersing students in diverse cultures around the world, encouraging student mobility within Canada and attracting international students.

In Canada, and at UBC, we have been remarkably successful in attracting students from other countries. In 2013, for example, UBC registered more than 10,000 international students from over 150 countries, one-third of whom are degree-seeking graduate students. These international students

profoundly affect our campus culture and expose Canadian students to new ideas. Many students stay and contribute their talent and ideas to building a stronger Canada while others return to their home countries, acting as ambassadors for Canada. As just one example, in 2013 UBC alumnus Mr. Shi Hao moved from China to Canada to establish the first North American office of the Agricultural Bank of China – one of the world’s largest banks – in Vancouver. One of the principal reasons for Mr. Hao’s decision was his experience as a student at UBC.

While international students are eager to come to Canada, there must be a concerted effort to develop mobility programs for Canadian students to study abroad. Canada trails the United States, China, Australia, and other competitor jurisdictions in the percentage of its student body undertaking international educational experiences. In a world that is increasingly globalizing, this can potentially disadvantage Canada in significant ways.

In fact, this trend is seen even within Canada. Canadian students almost uniformly choose to study in their home province. The strength of Confederation, however, is based on mutual understanding, the respect of our diversity and the shared belief that by working together we will prosper. A basic tenet of nation building is the sense of a shared culture and there is no better way to develop this than for our youth to appreciate the vast richness of Canada’s social fabric through experiences in multiple regions of the nation. Greater national student mobility is not only desirable, it is a necessity so that an expansive group of Canadian citizens are ready to understand and defend the interests of all regions of the country. A national post-secondary mobility program for college, polytechnic, and university students in time for Canada’s 150th anniversary would showcase the country’s commitment to long-term nation building.

Recommendation:

We recommend the government work with post-secondary leaders in the coming year to establish a new student mobility program to facilitate the exchange of Canadian students across Canada and around the world.