

THE Research  
Universities' Council  
OF BRITISH COLUMBIA



# MAXIMIZING BC'S POTENTIAL

2017/18 RUCBC BUDGET PROPOSAL TO THE GOVERNMENT OF BRITISH COLUMBIA

January 2017

## CONTEXT

BC is leading the nation in job creation and economic growth. The province has positive economic prospects as a global trade hub, through major infrastructure and resource projects and through a rapidly growing technology sector.

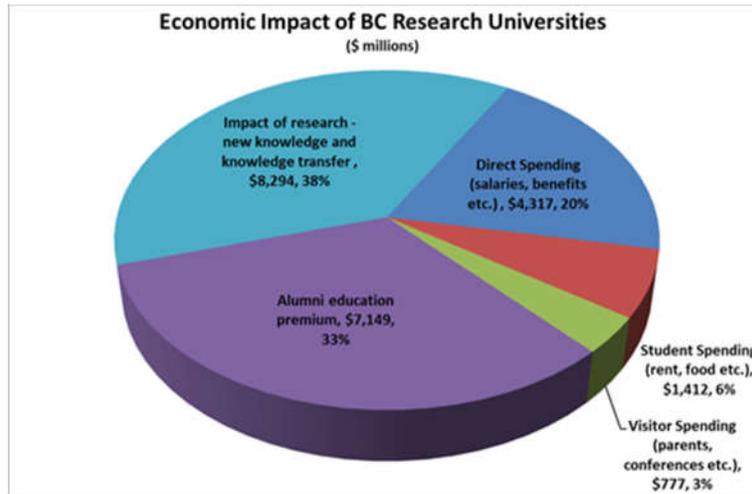
At the same time, the global marketplace and business environment is rapidly changing, due not only to demographic shifts but also to the accelerating rise of the digital economy and continuing globalization. Jurisdictions now are now competing for capital, high-value business activity and talent.

BC's economy will increasingly depend on a workforce with post-secondary education. As of March 2016, 70 percent of BC's jobs were filled by workers with post-secondary education, while as recently as 1991 the share of jobs held by individuals with post-secondary education and those without was evenly split. The trend for a more highly educated workforce will continue and by 2025, an estimated 77 percent of BC jobs will be taken up by workers with a post-secondary education, with demand encompassing all industries and sectors across BC's regions.

BC employers consistently agree that long term success is dependent upon access to a skilled workforce and that accessing talent is the most significant challenge they face. Now, more than ever, an economy's greatest asset is the skills and talents of its people.

An educated, highly-skilled workforce with the ability to adapt to changing economic and social circumstances and opportunities is key to sustaining BC's economy, to pursuing new opportunities and enabling BC to achieve its full economic potential. BC's research universities are producing many of the skilled graduates that make up the provincial workforce and the graduates who become leaders in knowledge development and transfer that is at the core of innovation and economic growth. In addition, the overall economic impact of BC's research universities is significant.

The total revenue for the research universities was \$4.0 billion in 2014/15, with \$1.1 billion in operating funds contributed by the provincial government, and a return to the province in an annual economic impact of \$21.9 billion, or 9.5 per cent of BC's GDP. Much of this return comes from the extraordinary transmission of new knowledge and technology into the BC economy, in addition to effect of direct, student and visitor spending, combined with the premium associated with higher wages earned by university graduates.



## STRATEGIC INVESTMENTS IN HIGH DEMAND OCCUPATIONS

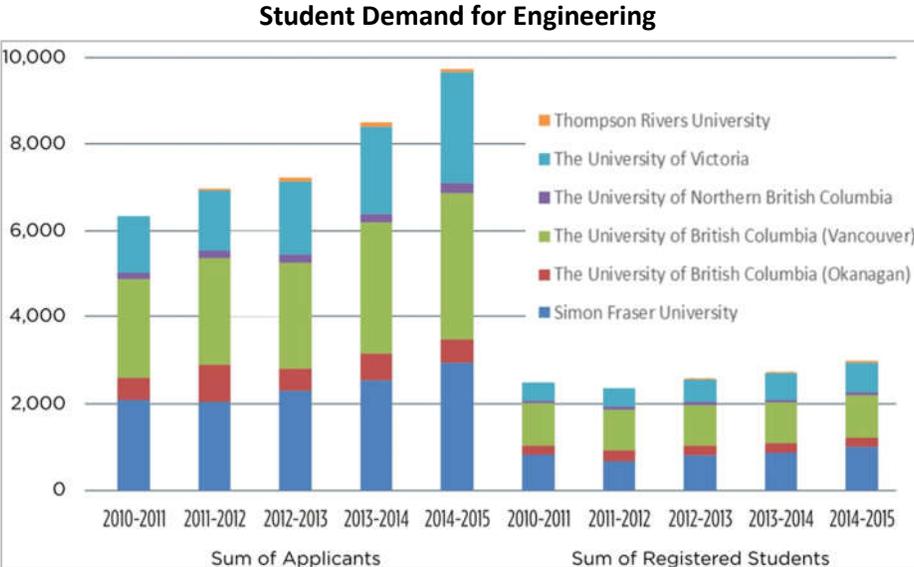
Innovation and new technology developments are key to growth in all sectors of BC's economy, from forestry, mining and agri-foods, to information and communications technology, clean technology and creative industries. This growth is highly dependent on the skills and knowledge of computer science and engineering graduates who take new ideas, methods and technologies into these sectors.

British Columbians expect high quality services in construction, electricity production, water and sanitation, transportation, and other services which also depend on engineering knowledge and skills being available across BC. Today, engineering and computer science alumni from BC's universities hold positions in every sector of the province's globally connected and rapidly changing economy.

Across Canada, BC has the highest projected demand for graduates in these fields over the next ten years and engineering and computer science occupations dominate the top required jobs in the BC Government's *2025 Labour Market Outlook*. Traditional engineering has expanded into fields such as mechatronics, chemical, biological, and environmental engineering and in emerging fields such as satellite systems, power systems, and biomedical engineering. Coders, designers and developers are all in high demand by BC employers.

BC's research universities have responded to this growing student and labour market demand by reallocating resources and increasing the number of engineering and computer science seats by 57.4 percent in the period 2006 to 2013, with more spaces allocated through the Province's *Skills Gap Plan*.

However, industry leaders, including the BC Tech Association and the BC Business Council, are concerned that the province’s economic growth will be increasingly limited by a shortage of engineering and computer science graduates, and that this situation will worsen unless urgent action is taken. There are now five qualified applicants for each engineering seat in BC, with a dramatic corresponding increase in entry level Grade Point Averages (GPAs). BC is turning away bright and committed students and is significantly behind Alberta, Ontario and Quebec in terms of the number of engineers produced per capita.



**Proposal**

Engineering and computer science capacity in the province is at a critical point. BC requires new strategic investments in these programs in order to produce graduates with the advanced skills required for new resource sector-based growth, and for new digital, creative and technology-based industries.

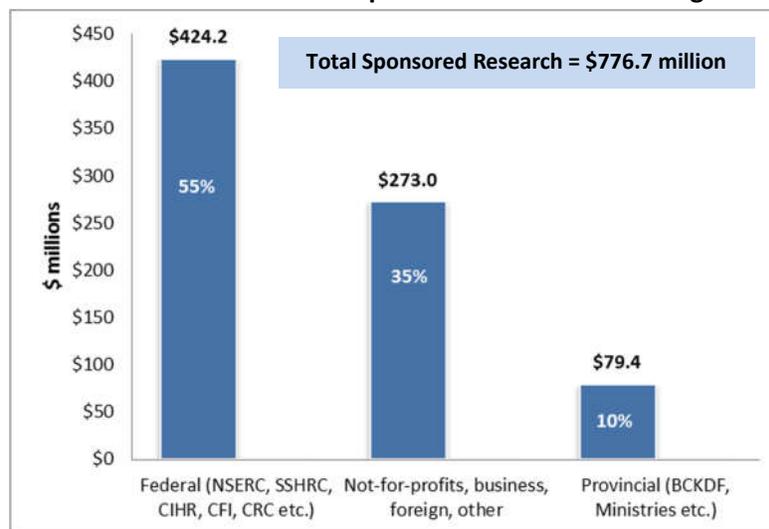
The introduction of a new, phased-in strategic initiative in engineering and computer science would add 3,300 new student spaces and related infrastructure over three fiscal years beginning in 2017/18. An investment of \$58 million in operating funding, plus associated capital funding, would be part of a long term vision which would see the creation of new spaces throughout the province, placing BC in line with other jurisdictions, such as Ontario, and providing the engineering and computer science capacity that is vital for sustained economic growth.

## RESEARCH EXCELLENCE AND ECONOMIC BENEFIT

BC's research universities have played a key role in positioning the province as a hub for world-leading research, producing measurable increases in GDP and employment and exerting a continuing impact on the productivity of the BC economy. Many of the province's leading biotechnology and high tech companies are direct "spin offs" from university-based research, and BC's traditional resource industries now look to the research universities as a source of innovation and revitalization. In addition, BC's per capita share of federal government research funding rose by 148 percent from 2000 to 2013, almost double the Canadian average and placing BC as second in ranking for federal per capita research funding, ahead of Ontario and Alberta.

BC's research intensive universities attract hundreds of millions of dollars in research funding every year. In 2014/15, the research universities attracted approximately \$700 million in sponsored research funding into BC from federal, provincial, business and not-for-profit sources.

**RUCBC Universities Sources of Sponsored Research Funding 2014/15**



The Government of British Columbia has recognized the importance of research and development to the diversification of the provincial economy through the BC Knowledge Development Fund. This has allowed BC's research universities to attract and retain talent that has been instrumental in advancing new treatments in health and life sciences, in developing new technologies in traditional resource industries such as mining and forestry, and in supporting new innovations in clean tech and, the now burgeoning, high tech sectors of BC's economy.

BC's research universities have taken advantage of their research strengths to develop contracts with industry sponsors and to support successful new companies. This, in turn, has increased tech transfer, commercialization and attracted investment from outside the province. In addition, graduate students from research universities, through their involvement in research, are a key conduit for knowledge transmission and commercialization.

While BC's research capacity is recognized nationally and globally, there is now a growing concern that BC could lose ground in securing Federal funding at a time of increasing investment levels by other provinces to improve their competitive position. New BC provincial support for post-secondary research will be required if BC is to attract rapidly growing Federal funding that is being dedicated to post-secondary research and innovation. Actively investing in advanced education and research is at the core of new ideas and discoveries that not only have commercial and market applications, but broader economic and social benefits contributing to the well-being of British Columbians.

## Proposal

Investment in research and innovation is critical to BC's economic competitiveness with other provinces and countries around the world.

BC's research universities are seeking provincial government support and strategic investment to leverage federal funding from the Canada Innovation Fund and other Federal sources. In addition, there is the opportunity for Provincial Government support through the newly formed table of Ministers Responsible for Innovation and Economic Development. One example would be the Federal government's commitment to fund \$800 million over 4 years to develop Innovation Networks and Clusters. Industry sectors and the research universities are working collaboratively to develop a strong cluster strategy in BC and provincial support is critical to this proposal.

## POST-SECONDARY SYSTEM SUPPORT FOR STUDENTS

Central to the overall prosperity of the province is the success of young British Columbians in the public post-secondary system. The presidents of BC's colleges, institutes and universities recently made a joint submission to the BC Select Standing Committee on Finance and Government Services, reflecting the high degree of collaboration and common purpose among the province's post-secondary institutions in providing post-secondary education for students.

The submission speaks to the fact that while the foundation for preparing students for success has essentially remained the same in providing high quality, accessible education, the issues facing students in areas such as mental health and safety are more prevalent and require more substantive responses, with the demands for specialized services increasing year over year.

Earlier this year, a study of Canadian post-secondary students found that approximately 25 percent of students reported a mental health issue such as depression, anxiety, schizophrenia, post-traumatic stress disorder or other related disorders. Institutions have responded with additional counsellors, peer mentorship programs and new integrated health teams to better identify students in distress and offer the assistance they require. However, with an increasingly diverse student population, more tailored and supportive health and wellness services are required.

Safety is also a critical issue for students and, in accordance with BC's *Sexual Violence and Misconduct Policy Act*, institutions are committed to making campuses safe, respectful environments and are developing or updating policies and practices to address sexual assault and harassment. Initiatives that require additional support include education, prevention strategies and enhanced training for counsellors and residence staff to address sexual misconduct.

A positive and growing trend at post-secondary institutions is that education and employment outcomes have improved for Aboriginal learners. However, more must be done to ensure programs are relevant, effective and provide pathways to success. Consistent with the Truth and Reconciliation Commission recommendations, the goal of the institutions is to work with Aboriginal partners to increase the number of Aboriginal learners accessing and completing post-secondary education.

Another rapidly growing trend within institutions is the increase in work-integrated learning, such as co-op, internships or mentorships. For students and employers, real-world work experience is a valuable learning tool where skills are developed and relationships are strengthened.

Over the last six years, work-integrated learning opportunities, in disciplines such as engineering, computer science, business and science, have increased by approximately 40 percent. However, many employers, particularly small businesses, require assistance in order to offer work placements as more and more students seek to enroll in these programs. In addition, institutions need assistance to provide more integrated learning services for students as well as to facilitate new approaches for employers to quickly integrate students into the workplace. It is proposed that institutions receive funding that is 20 percent of the annual value of the support provided to employers for students.

All of these initiatives recognize and address changes and trends in the education system and represent a commitment to student success which goes well beyond the traditional ideas of post-secondary education. Investments in the success of our youth are investments in the province's future.

## Proposal

The request presented to the Select Standing Committee by the 25 post-secondary institutions included a reinvestment of the \$50 million reduction in provincial operating grants that was made to institutions over the period 2013/14 to 2015/16. While Government's Administrative Services Delivery Transformation project allowed for some cost alleviation, the net result was a decrease to operating budgets at a time of increasing pressure from students for services, placing a real risk to the quality and accessibility of programs.

With such a reinvestment, the research universities could commit to allocating their pro rata share towards four initiatives for students: mental health support, sexual violence support, support for Aboriginal learners and support for work-integrated learning. Each research university would develop a plan on how their portion would be allocated to these areas of support and report on that plan.

# FINANCIAL SUPPORT FOR STUDENT SUCCESS

## Graduate Student Scholarships

The significance of graduate programs to British Columbia's economy and to the labour market is often overlooked. Innovation in the province's industry sectors is highly dependent upon the advanced skills and knowledge of graduate students who take ideas and transfer new knowledge into the workplace, leveraging competitiveness and productivity.

BC is the only major province in Canada not to offer a graduate student support program and is at a disadvantage in attracting and retaining the students who will be BC's future innovators. As a result, the province is losing high quality students to other jurisdictions, such as Alberta and Ontario, which offer financial support for graduate students.

### Provincially Funded Graduate Scholarships

Through the Pacific Century Graduate Scholarship program (for which funding expired in 2011) the research universities were able to attract and retain some extraordinary students who might otherwise have chosen to study in provinces with well-funded scholarship programs. The scholarships also helped attract high-caliber international students who brought new perspectives to our universities and who formed academic and personal connections with BC students and researchers during their studies, connections which are increasingly important in our global economy.

## Proposal

A provincial graduate student scholarship is key to a student's decision to remain in or to leave BC to pursue their studies. Implementing a graduate student scholarship would allow undergraduate students to remain in the province for their graduate studies and take their skills into the BC workforce.

The introduction of 1,000 graduate scholarships at \$15,000 per scholarship, beginning in 2017/18, would attract and retain students who will take their advanced skills into the BC economy. The scholarship would be open to students who are enrolled in a graduate program at a BC research university and would be awarded based on merit.

## Student Financial Assistance Review

Student financial aid programs ensure that students across all income groups are able to access post-secondary education in the province.

To this end, the research universities offer support to students in financial need. In the past five years, despite a period of significant budgetary constraints, the research universities provided approximately \$120 million a year for student financial support, including bursaries, scholarships, and emergency assistance.

In Ontario, the government announced a new grant program in March 2016 that replaced a number of existing provincial assistance programs (including tax credit programs) with a single, targeted non-repayable grant. This change allows students from families with incomes of less than \$50,000 to receive assistance equivalent to average undergraduate tuition in Ontario. New Brunswick has adopted a similar approach this year.

## Proposal

A review of the provincial student financial assistance program as it relates to the accessibility and affordability of post-secondary education could lead to significantly improved opportunities for students in need. The recent improvements made to student financial assistance programs in Ontario and New Brunswick should be taken into consideration as possible models for BC.

## SELF-FINANCED CAPITAL PROJECTS

The Province has made a significant contribution to new post-secondary capital construction over the past decade. However, debt-related capital restrictions on British Columbia's research universities are limiting opportunities for economic growth and job creation.

British Columbia's research universities have delivered on their targets for international student growth and the provincial strategy in the BC Jobs Plan. At institutions across the province, international students are contributing to the learning environment and students' global awareness. They also contribute to the provincial economy through the goods and services they purchase. However, the physical capacity of institutions is constraining international student growth. Without the Province's approval to self-finance selected capital projects such as student residences through the universities' own revenue streams, growth in the number of international students will be limited.

## Proposal

Research universities are seeking approval to self-finance capital projects, such as student residences, through their own revenue streams. The resulting projects will help to meet student demand, stimulate regional job creation and economic growth through infrastructure development.