

THE RESEARCH UNIVERSITIES' COUNCIL OF BRITISH COLUMBIA

SUBMISSION TO THE
SELECT STANDING COMMITTEE ON FINANCE
AND GOVERNMENT SERVICES

Skills, Talent and Innovation *for a* ***Prosperous British Columbia***



October 9, 2018

Thank you for the opportunity to participate in the Committee's consultation process on behalf of the members of the Research Universities' Council of British Columbia (RUCBC), The University of British Columbia, the University of Victoria, Simon Fraser University, the University of Northern British Columbia, Royal Roads University and Thompson Rivers University.

We appreciate the important role of the Committee and would like to thank you for past recommendations that the Committee has made and are now making a difference to learners in BC.

We would like to begin by acknowledging the very significant recent BC Government investments in three areas:

- An additional 2,900 technology student spaces in high demand areas such as computer science and engineering,
- Enhanced flexibility to self-finance 5,000 student housing units creating affordable campus housing for students, and
- New one-time scholarship funding of \$12 million to retain and attract outstanding graduate students to BC.

Together, these are tremendous investments that will benefit our students and the province.

Supporting Student Success

This year, RUCBC will also be part of a Joint Submission to the Select Standing Committee by the province's 25 post-secondary institutions requesting funding to support student success in the following areas:

- New pathways for Indigenous learners
- Mental Health Services
- Work-Integrated Learning



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This is the third year that BC's research universities are joining with all 25 BC public post-secondary institutions in a separate submission requesting funding to support student success.

Institutions have responded to the increasingly complex needs of students in many areas. This includes creating new pathways for Indigenous learners and our shared commitment to respectful dialogue and partnerships with Indigenous peoples consistent with the Truth and Reconciliation Commission of Canada's *Calls to Action*.

It is also reflected in the new programs and services to meet the complex needs of today's students in areas such as mental health and sexual violence and misconduct, and in supporting students to achieve their career goals by delivering more practical, work-integrated learning such as co-ops.

However, much more needs to be done to meet students' needs. BC's post-secondary institutions are asking for the restoration of a \$50 million reduction in funding that occurred over the period from 2012 to 2015 be directed to these areas.

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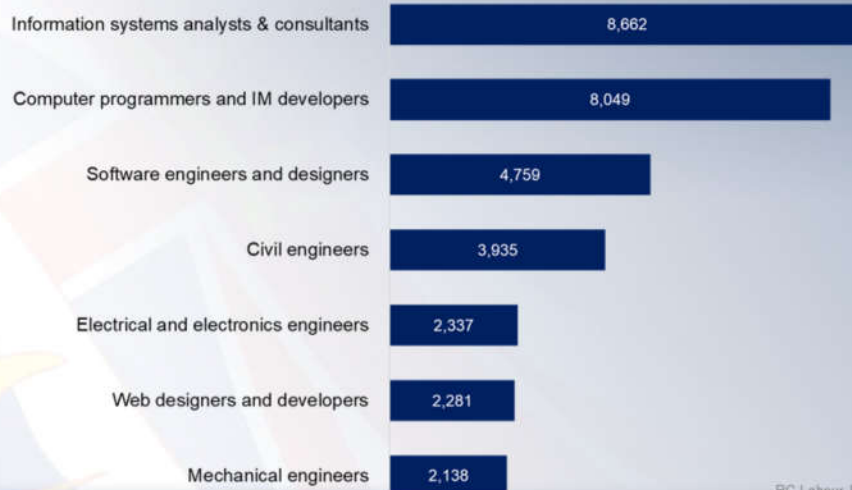
The research universities are recommending three priority areas for investment that are vital for a prosperous and innovative British Columbia.

- Develop and retain talent in BC
- Attract and retain outstanding students
- Increase research and innovation impact



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Projected Labour Market Demand Examples



BC Labour Market Outlook: 2018 Edition

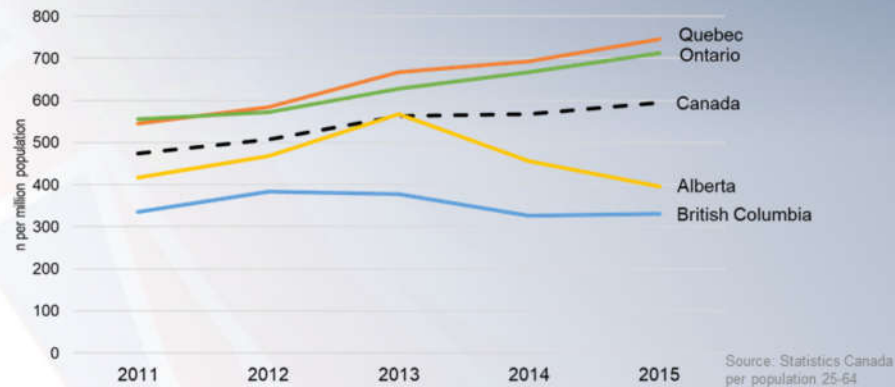
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The most recent 2018 BC Labour Market Outlook continues to show demand for university undergraduate and graduate degrees in Science, Technology, Engineering and Math (STEM) as well as for professional and technical programs supporting these credentials. There is also an increasing awareness of the need for Arts and Design, or “STEAMED” programs for future occupations.

There is clear evidence that BC falls short in the number of graduate students in these areas and that there is high demand for undergraduate students in specific regions of the province. We recommend expansion of both graduate and undergraduate students spaces be included as part of a new comprehensive BC Technology Strategy.

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STEM Graduate Degrees Granted by Year and Province



We are in an era of economic disruption, where yesterday's rules no longer apply. Traditional jobs are disappearing and new jobs are emerging due to the rapidly changing digital economy. These extreme economic shifts require talented, adaptable students who can put leading-edge knowledge into practice.

Unfortunately, compared to other Canadian provinces, BC is losing ground in graduate degrees awarded each year. As shown in this slide, BC falls below the national average for graduate degrees in Science, Technology, Engineering and Math (STEM) and this will have long term social and economic implications.

Provincial government funding is provided for approximately 11,000 graduate student spaces; however, the research universities have created an additional 5,000 graduate spaces from other revenue sources, including research revenue brought into the universities from outside BC. The gap with other provinces would be even more significant had there not been this commitment by the research universities to offer more students access to graduate programs.

In recent years, other Canadian provinces such as Ontario and Quebec have increased the number of graduate degree spaces, recognizing that these graduates are future innovators, entrepreneurs and technology leaders.

To keep pace with other provinces and help drive our economy, an additional 1,900 graduate spaces are required in BC. We are recommending a five-year plan to increase graduate student spaces in the STEM disciplines.

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Provincially Funded Graduate Scholarships

- BC has been at a disadvantage in driving innovation and building advanced skills as other provinces actively recruit talented graduate students with high levels of provincial government financial support
- The new BC Graduate Scholarship Program is a welcome first step but stable, increased funding is required to ensure BC retains its own students and attracts other outstanding students



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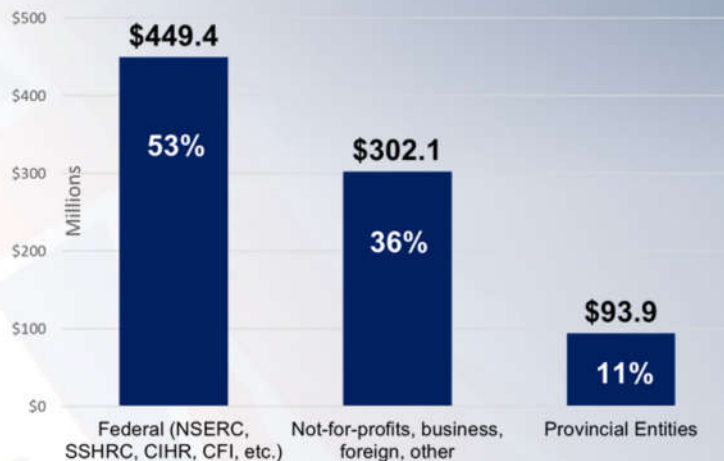
Recruiting and retaining graduate students and building a critical mass of talent is a key to a BC economic development strategy.

Research universities have placed a high priority on providing financial assistance to attract graduate students with institution specific scholarships, bursaries and prizes; however, universities across the country compete for graduate students, and particularly in Ontario and Quebec with high levels of provincial financial assistance.

The Province of Ontario provides 3,000 graduate scholarships each year to students, with many students recruited from BC. The new BC Graduate Scholarship Program will provide 800 scholarships over a three year period. The BC Program is a very important first step, with \$12 million in one-time funding, but increased and ongoing funding is necessary if BC is to meet the demand for graduate students that is coming increasingly from business and industry as they make decisions on whether to locate in BC.

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2016/17 Total Sponsored Research by Source, RUCBC Universities



Source: CAUBO.

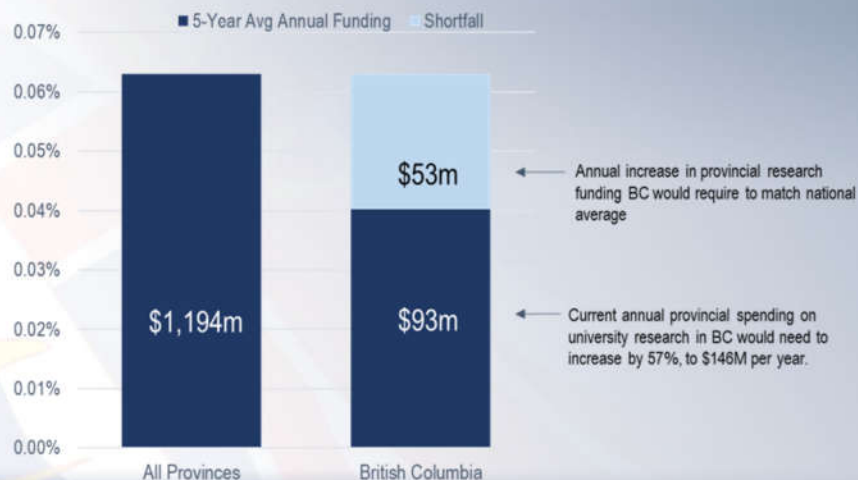
BC's research universities have positioned the province as a hub for world-leading research, producing measurable increases in GDP and employment.

In 2016/17, the research universities attracted approximately \$750 million into BC from federal, business and not-for-profit sources, representing 89% of total institutional research revenue. BC has performed above the Canadian average in funding per capita from the Federal granting bodies. In addition, many of the province's leading biotechnology and high tech companies are direct spin-offs from university-based research. In turn, jobs have been created, productivity has increased and economic gains have been realized.

Provincially funded research has comprised a relatively small share of total research funding to BC universities, however, it is crucial in demonstrating support for BC research and in leveraging federal matching funding. It is also fundamental to building BC's research and innovation ecosystem and developing new technologies in traditional industries, such as forestry and mining.

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Provincially Funded University Research as Percentage of GDP



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Jurisdictions with more innovation activity have higher rates of productivity and economic growth.

The provincial government has made important investments in research and innovation, including the BC Knowledge Development Fund, which enables universities to leverage another 60% in matching funding. However, overall provincial government research funding to universities has declined as a percentage of GDP, and BC is behind Alberta, Quebec, Ontario and Canada over the period 2011 to 2015.

We are recommending a multi-year provincial investment strategy of \$53 million that would bring BC to within the national average and be focused on the areas of highest need and value.

One strategic investment would include new Digital Research Infrastructure capacity required to create and apply to new and existing technologies, with the potential to impact virtually all economic sectors. Another would be in developing BC's research and innovation ecosystem helping start-ups to become sustainable and attracting new investments in BC-based companies.

RUCBC universities have grasped the opportunity to partner and collaborate with the newly created Canada Digital Technology Supercluster and partners in Washington State through the Cascadia Corridor, recognizing the opportunities in data science, machine learning, artificial intelligence and large scale simulations and geographic information systems, moving from research through to commercialization.

Greater investment in these areas promises to be a source of leading-edge ventures that will grow BC-based medium and global-sized companies with a talent pool that will drive innovation, leading to economic growth and resilience for BC.

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Conference Board of Canada Innovation Report Card, 2018

- Canada ranks 12th of 16 peer countries—down three positions from the previous report card—and earns a C on innovation
- BC drops from a B to a D, falling below the Canadian average

“B.C. needs to turn its performance around quickly before a low-innovation equilibrium becomes the norm.”

Conference Board of Canada, May 2018

In summary, we are asking that the Committee recommend investments:

- Supporting student success
- Developing BC talent through new graduate and targeted undergraduate student spaces in STEM programs
- Retaining and attracting outstanding students through graduate scholarships
- Implementing a staged investment in provincial research and innovation as part of a BC economic development strategy