



Unleash Polytechnic Talent and Innovation for Smart Growth

**Submission to the House of Commons
Standing Committee on Finance Pre-budget Consultations**

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Text conforms to word limits established by the Standing Committee on Finance.

EXECUTIVE SUMMARY

There is untapped human potential in Canada; this talent is vital for the Government's innovation ambitions. The next federal budget must seek new and innovative ways to maximize the growth potential of workers and employers.

Polytechnics Canada presents a **suite of ten measures** that respond to the Finance Committee's call for ideas to improve outcomes for individual Canadians, businesses and communities. **Six of our recommendations focus on people and talent**, so necessary for real innovation gain. **Four of our recommendations focus on accelerating business innovation** through improved collaboration with polytechnics and colleges.

A polytechnic education builds a resilient and resourceful workforce. Canada needs more of this kind of applied education. Budget 2017 can help scale-up support to make optimal use of polytechnics and colleges for Canada's talent and innovation needs.

In a period of slow growth, Canada needs policies and programs that squeeze out as much productivity as possible, while fully utilizing all our available talent. Canada faces rapid pace of change in technology and jobs as well as persistent rates of youth unemployment and underemployment. Canadians need a better match-up between education and the workplace, along with improvements to the performance of both the education system and the business community.

Gaps and mismatches have arisen over several decades in the supply of talent, the quality of the learning experience, and in vitally important innovation skills. An alarming absence of critically important data about the Canadian workforce further compounds the problem, leading to flawed decision-making about supports for learners and for employers' need for talent. In addition, high-skilled and entrepreneurial tradespeople are left out of the hunt for innovative talent.

The March 2016 federal budget announced new spending for Canada's Innovation Agenda and skills training (annual increases of \$200 million for innovation, \$175 million for training for the unemployed and underemployed). Our recommendations can be supported through these new funds. Targeted and deliberate action can make a difference now.

THE CONTRIBUTION OF POLYTECHNIC TALENT AND INNOVATION

Polytechnic education is advanced applied technological training, designed to respond to employer needs for highly qualified and skilled workers. Polytechnics¹ and colleges have employment at the very core of their education mission – new entrants to the labour force, and re-skilled workers for the new economy, are our primary clients. Learners should be front and centre in all federal policies and programs aimed at talent and innovation.

¹ The term "polytechnics" applies to degree granting, research intensive colleges and institutes that are either designated as polytechnic institutions by certain provinces or differentiate themselves from traditional community colleges that do not offer degrees or conduct applied research.

[Polytechnics Canada](#) represents leading research-intensive, publicly-funded polytechnics and colleges located in key economic regions of Canada. All our members grant Bachelors' degrees, and offer industry-aligned post-secondary credentials, including trades training.

Over the past two decades, these institutes have also grown their capacity to help firms and community organizations to scale-up their own innovation activity through applied research, technology development and productivity enhancement projects. A large portion of our members' current applied research activity is supported through federal research funds primarily targeted to improve small business innovation outcomes.

Canadians, businesses and communities all benefit from access to the talent and innovation solutions of a polytechnic education.

In 2014/15 the [eleven members](#) of Polytechnics Canada:

- Educated and trained 193,600 post-secondary students;
- Contributed 70,000 new graduates to the Canadian workforce;
- Delivered in-class training to 45,873 apprentices, helping 12,000 of these apprentices to complete their certifications;
- Offered 122 stand-alone four year Bachelor's degrees to 17,354 students; and
- Were the destination of choice for 30,564 international students.

In 2015/16, our applied research offices:

- Serviced the commercialization needs of 1,814 companies and community partners;
- Involved 10,518 students in applied research activities; and
- Built over 769 prototypes for companies wanting to launch innovative products and services.

TALENT FOR GROWTH

Canada needs a talent strategy for growth. Within our publicly-funded post-secondary institutions, we need to focus federal supports to produce "made-in-Canada" talent: the highly qualified and skilled workers businesses and communities seek. This means generating both knowledge and know-how; workers with ideas, and workers who know *how* to use those ideas in real-world applications such as revitalizing infrastructure and contributing green solutions for the economy. We should not perpetuate the notion that there are only good jobs for one type of credential, or one type of education. Rather, we need an approach to talent that recognizes that economic success requires cross-cutting credential collaboration.

Both the federal and provincial governments invest heavily in post-secondary education, but Canada has to do a better job of providing data on the outcomes of our publicly-funded higher education systems and institutions. Timely and accurate data will improve job

creation and retention, building careers where we need them most. Without better labour market forecasting, Canada cannot build an inclusive talent pool for the 21st century workplace.

MEASURES FOR CANADIANS – LEARNERS AND EMPLOYERS

The federal government should:

- ✓ *Direct Statistics Canada to create, deliver and disseminate high-quality, current, relevant and comparable labour market information by increasing its budget by \$50 million per year.*

This information will benefit learners and employers and encourage informed choices about careers and jobs by providing data on skills-in-demand, employment outcomes by education type, demand for work-integrated learning, apprenticeship completion rates.

- ✓ *Create a \$15 million per year innovation-focused internship program connecting polytechnic and college undergraduate students with firms and non-profit organizations.*

This work-integrated learning initiative will build applied research and innovation skills, as well as enhance graduate employment outcomes, while also addressing employer need for workers with innovation skills. Mechanisms such as Mitacs Accelerate may be able to deliver this new investment.

- ✓ *Expand existing research talent programs at the Natural Sciences and Engineering Research Council (NSERC) to increase participation by polytechnic and college students.*

Evidence shows that real-world research is conducted by collaborative teams, across the credential spectrum. Yet, programs designed to mentor the next generation of researchers, are primarily used by graduate and post-doctoral researchers because of a narrow interpretation of terms and conditions. These programs should include the talent produced by polytechnics and colleges.

- ✓ *Create a grant program to fund students enrolled in post-secondary institutions to acquire vital entrepreneurial skills.*

Under the guidance of an instructor or mentor working on small-scale entrepreneurial projects, the outcome would be an expansion in the quantity and quality of entrepreneurial experience available to university and college students. Current federal support for young entrepreneurs exists as repayable loans; we propose a grant program for students.

- ✓ *Launch a \$20 million per year pilot program that identifies and establishes regional or sectoral consortia of firms, connecting apprentices to employers.*

Aimed at improving employer engagement with apprentices, this initiative will ease the administrative burden of finding and training apprentices for employers (particularly small firms), and contribute to improved apprenticeship completion rates.

✓ *Fund a Centre of Excellence for Vocational Training.*

With the objective of improving government action for skilled trades training, this Centre would identify global and Canadian best practices, inform decision-making, improve apprenticeship completion rates and place Canada on par with Germany, Australia and the U.K. in modernizing apprenticeship systems.

CONNECTING MORE BUSINESSES TO INNOVATION SOLUTIONS

Canada needs a well-functioning innovation ecosystem; at present, all indicators show that this is not so. Polytechnics are vital and under-utilized actors in this ecosystem.

Our [policy recommendations](#) for the Innovation Agenda outline in more detail the many barriers we face in making a bolder contribution to Canada's innovation needs. In addition to science excellence, excellence in commercialization and entrepreneurship will accelerate growth.

Polytechnics and colleges are not motivated by discovery science or curiosity driven research, as universities are and should be. Rather, we are motivated by applying science and technology to solve real-world problems. Polytechnics excel at working with industry partners on collaborative, near-to-market work such as prototyping, beta-testing, productivity enhancement or market validation. Given our urban locations and impactful applied research services, polytechnics and colleges are key entry points for many small and mid-sized enterprises seeking to innovate. Since 2007-08, 10,802 companies have collaborated with our members to solve and service their innovation needs.

For example, [Technology Access Centres](#) (TACs) at some of Canada's leading polytechnics and community colleges are vital hubs for growing innovation clusters and networks in key economic regions. TACs provide access to specialized technology, equipment, and expertise to local industry – particularly SMEs – partners, with the goal of enhancing their productivity and innovation.

There is only one permanent program within the many Tri-Council research granting programs that support demand-driven applied research activity for 107 eligible colleges and polytechnics. The NSERC administered College and Community Innovation Program (CCIP), which includes grants for TACs, stands at \$53 million a year. NSERC's annual budget is \$1.1 billion a year. When set against the federal government's annual spending on higher education R&D (HERD), this means that polytechnics and colleges are supported by only 1.7% of this spending allocation. Lack of adequate funding for CCIP means that numerous high quality peer-reviewed applied research projects are being rejected, leaving our industry partners to postpone or abandon their innovation activity.

MEASURES FOR BUSINESS AND COMMUNITY INNOVATION

As the Government's Innovation Agenda has clearly identified, the present challenge is to scale-up innovative small and mid-sized firms. At the same time, the Government asked "how can colleges play a larger role in the ecosystem?"

Below is our suite of recommendations that not only answer that question but in total presents a plan to ramp up the innovation impact of polytechnics and colleges.

In its next budget, the federal government should:

- ✓ *Increase funding to the College and Community Innovation Program (CCIP) administered by NSERC by \$15 million per year.*

This will help more SMEs innovate when they otherwise cannot, and help firms of all sizes accelerate their innovation. The priority for this new funding should be to increase the number of Technology Access Centres, which provide individual firms access to innovative talent, equipment and facilities.

- ✓ *Create a permanent \$7 million annual program at the Social Sciences and Humanities Research Council (SSHRC) based on the successfully completed College and Community Social Innovation Fund pilot.*

This program will enable polytechnics and colleges to continue to conduct social innovation research projects with community partners across some of Canada's most vulnerable communities.

- ✓ *Launch a \$25 million per year National Post-Secondary-Business Voucher Initiative delivered through all regional development agencies.*

Building on a successful earlier pilot at FedDev Ontario, the initiative will increase the number of firms making use of the R&D capabilities of Canadian higher education institutions. It will give SMEs access to the talent and equipment at post-secondary institutions in order to create new products, processes and services, while providing universities, polytechnics and colleges with predictable, stable funds to respond to industry needs at the speed of business

- ✓ *Increase the Research Support Fund by \$25 million per year to strengthen polytechnic and college applied research offices in delivering greater support to industry partners.*

Polytechnics and colleges are limited in their ability to serve industry partners with professionalized research support due to poor federal program design. Specifically, indirect costs of research incurred by institutions that deliver successful CCIP projects are not eligible for the Government's Research Support Fund. This measure would enhance the capacity of polytechnics and colleges in spurring business innovation, and provide industry partners with a smoother, quicker and predictable path to market.

CONCLUSION

Implementing any one of our recommendations would be a step forward, but if implemented as a whole, the impact would unlock the full potential of polytechnics for Canada's innovation and talent needs. We look forward to presenting more details and evidence to support our recommendations at the fall hearings of the Finance Committee.

At a time when the Government is searching for solutions that work, surely the time is now to scale up support for polytechnic talent and innovation? The membership of Polytechnics Canada is ready, willing and able to increase their role in fueling Canada's prosperity.