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COVID-19 Pandemic
Short-term Response through College and Institute Applied Research

Submission to:
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By:
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Context

Short-term measures are urgently needed to help college and institute applied research offices and their research partners resume and accelerate R&D activities through the Covid-19 pandemic and business resumption period.

Local industries, SMEs, health care providers and community service organizations are all seeking help to re-open safely, adapt their operations to the new reality and begin work on the longer-term re-tooling and business transformations that will support recovery, provide jobs and enable growth in a changed economy.

To respond to this need and sustain applied research capacity, college and institute applied research offices and centres need flexible, nimble access to existing grant mechanisms, along with funding increases to assist partners who have suffered severe revenue losses, laid off key personnel and are facing a changed and uncertain business environment that threatens their survival.

The ability of colleges and institutes to mobilize these measures will also require short-term support to adapt research facilities and workspaces and purchase PPE to protect the health and safety of research staff, students and visitors.



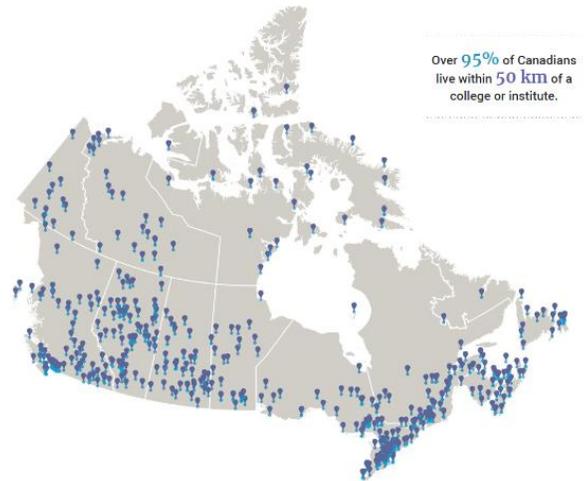
COVID-19 Pandemic

Short-term Response through College and Institute Applied Research

Colleges and Institutes Canada (CICan) recommends an investment of **\$85 million in applied research over two years** to help up to 2000 SMEs survive the challenges of the COVID-19 pandemic and pivot to meet the needs of a strong economic recovery.

This funding will support SMES and community organizations to:

- rapidly transition to online operations, redesign physical space, introduce new work methods and modes of service delivery to reduce risk to employees and clients;
- sustain recovery and position for growth in the medium-term by accelerating digital and technology adoption, retooling equipment, automating processes and developing new lines of business.



The investment will also ensure that the applied research capacity of colleges and institutes, built up over the past two decades and enhanced with new investments since 2015, is available to support the achievement of longer-term economic and social goals in all regions of Canada.

Recommendation 1: \$40M for rapid-response Engage Grants

- Equip applied research offices to respond quickly to industry and community partners who need innovation services to reopen, begin recovery and plan for growth.
- Reduce costs and wait-times associated with application and approval processes for company partners and applied research offices by bundling multiple Engage Grants in a single application.
- Enable partners in all sectors to address the impacts of the COVID-19 pandemic through college applied research.
- 135 grants of \$300K would support 1300 projects at \$30K each over two years.

Recommendation 2: \$15M to reduce company leverage requirements for regular CCIP Grants

- Maintain and strengthen the pipeline of new projects by reducing cash and in-kind contribution requirements for partners working with colleges and institutes on applications in the regular funding cycle.
- Top-up project budgets with grant funds where partners are no longer able to meet their contribution commitments and where shortfalls negatively impact the scope and outcomes of the project.
- Allow flexibility within CCIP to lift or lighten cash leverage requirements for companies who can no longer pay.



COVID-19 Relief in demand by SMEs

Minister Ng told webinar participants in a May 8 conversation with online newspaper, *The Logic*, that since the release of the Canada Emergency Business Account program, 600K firms received, one in 15 SMEs, have received a total amount of \$20.7B. Despite the government's response, need remains. CFIB's president, Dan Kelly recently noted: "Nearly 80 per cent of small businesses are fully or partially closed due to COVID-19 with little or no revenue coming in, while their bills continue to pile up."

Recommendation 3: \$20M for new projects across all CCIP grant types that enable digital adoption by SMEs as they reengineer their operations

- Ensure SME survival as the shift to online and digital platforms becomes more urgent and essential.¹
- Capitalize on the core strength of college applied research in technology transfer to meet increasing demand from companies and other partners for digital adoption services.

Recommendation 4: \$10M for ARTI grants to retool applied research facilities and equip applied research staff to meet physical distancing requirements

- Acquire new PPE and other equipment to protect staff, students and visitors.
- Reconfigure the layout of labs and facilities, retrofit alternative space and implement new lab and equipment protocols to allow for proper physical distancing.

Recommendation 5: Open the funding opportunities created by these new investments to partners from all sectors

- The benefits of the investments recommended above will flow primarily to SMEs which constitute over 60% of college applied research partners.
- To address the full breadth of economic and social repercussions of the pandemic, eligibility must include partners in community, non-profit and health care organizations and projects that improve services and quality of care for vulnerable groups including the elderly, persons with disabilities, Indigenous people and newcomers.
- The demand for grants through the recent CCIP COVID-19 Rapid Response and College and Community Social Innovation Fund competitions demonstrate strong need for college and institute support in these areas.

Mobilizing NSERC Applied Research Rapid Response to COVID-19

At **Vestechpro**, a research and innovation centre specializing in the development of intelligent clothing and textiles affiliated with the **Cégep Marie-Victorin**, the team [is mobilizing its partners to develop new models for medical protective equipment and clothing](#) that meets the needs of hospital workers and can effectively combat infection.

¹ Shopify, an Ottawa-based company took in \$470 million (USD) in revenue in the first three months of 2020, up from \$320 million in the same period a year ago as more companies move their operations online: <https://www.cbc.ca/news/business/shopify-earnings-1.5557473>

The COVID-19 pandemic has underscored the vital need for an innovation ecosystem capable of rapid technology transfer. In an economy dominated by SMEs dispersed over a vast geography and array of industries, the responsive capacity of colleges and institutes has never been more relevant. In their joint Budget 2020 submission, CIGan and college and institute applied research stakeholders from across the country recommended an additional annual investment of \$40 million to dramatically increase SMEs' access to the R&D enterprise. This investment is foundational to the long-term sustainability of the college and institute enterprise and its role in supporting regional economic development. CIGan will continue to vigorously advance this priority as the government examines the medium and long-term requirements for a full recovery and future growth.

“Many businesses are proving resilient in adapting to the crisis by altering products, services and production methods. The data shows a large increase in e-commerce, as well as many firms testing working at home practices.”
[Canadian Chamber of Commerce](#) on results from the Canadian Survey on Business Conditions

Background

- Canada is a nation of small and medium-sized businesses. Many SMEs lack the capacity, resources and networks needed to invest in research and business development. According to Statistics Canada, as of December 2017 there were 1.18 million employer businesses in Canada. Of these, 99.8% were small or medium businesses. In total, “SMEs employ 89.6% (10.7 million) of the private sector workforce, which highlights the important role SMEs play in employing Canadians.”
- Colleges and institutes have the mandate to contribute to economic development in their communities and regions and this extends to their applied research enterprises. With 95% of the Canadian population and 86% of Indigenous people living within 50 km of a college or institute campus, this significant reach has enormous potential for college applied research enterprises to support post-pandemic resumption and recovery in communities across the country, including in rural and Northern regions.

Indigenous-owned and visible minority-owned businesses have tested or used R&D at a higher rate (11.1% and 8.6%) than national average (5.7%)

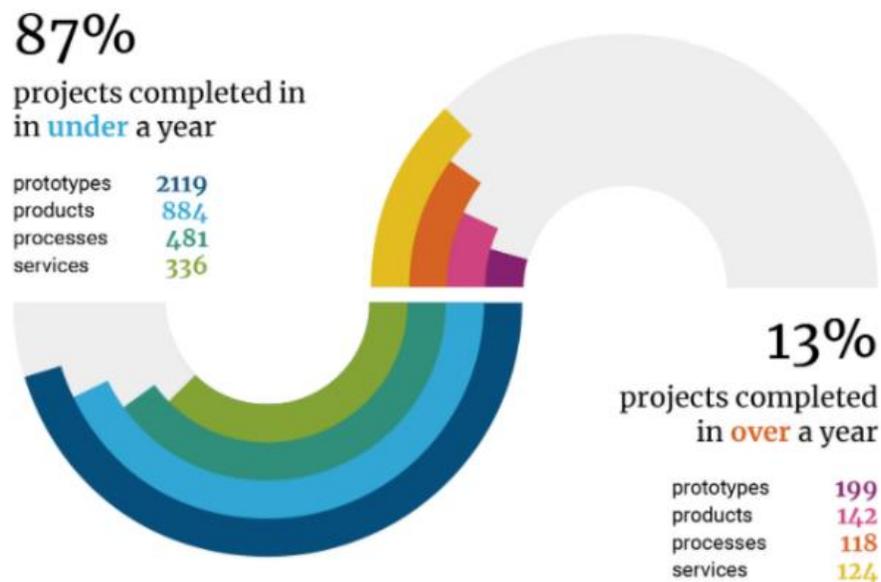
[Canadian Survey on Business Conditions](#), Statistics Canada and Chamber of Commerce

**Applied Research Impact on Regional Economic Development:
[Southern Ontario Network for Advanced Manufacturing Innovation \(SONAMI\)](#),**

SONAMI was created in 2016 by FedDev Ontario as a network of six colleges and one university, led by Niagara College, that matches the resources and expertise of its members to the R&D needs of small manufacturers. The companies have grown and diversified their markets and become more competitive by adopting cutting-edge technologies, increasing productivity, and creating new products. In its first three years, the network partnered with 110 businesses who more than doubled the project funding through direct investment and commercialized 144 products, developed more than 500 prototypes, trained 165 student researchers to be career-ready, made possible the creation of 190 jobs, and had an economic impact of more than \$25 million.

- College and institute students have an integral role in applied research, working alongside faculty and researchers to support the business and community partners through internships, work-integrated learning placements and capstone projects. In 2017-18, 29,000 students participated in applied research activities and a further 24,000 students participated in entrepreneurship activities. In addition, 4,300 faculty and research staff were engaged in applied research activities in 2017-18.²
- Each year, college and institute applied research develops innovative solutions to thousands of real-world challenges identified by business and community partners. The most recent CIGan data available is for 2017-18, when colleges reported 7,300 research partnerships, of which 64% were with SMEs.
- College applied research tackles practical problems by applying and adapting the latest technology and knowledge to create new or improve products, services, and processes. In 2017-2018, research activity at colleges and institutes led to more than 4,400 new processes, products, prototypes and services and 87% of these results were achieved in less than one year.

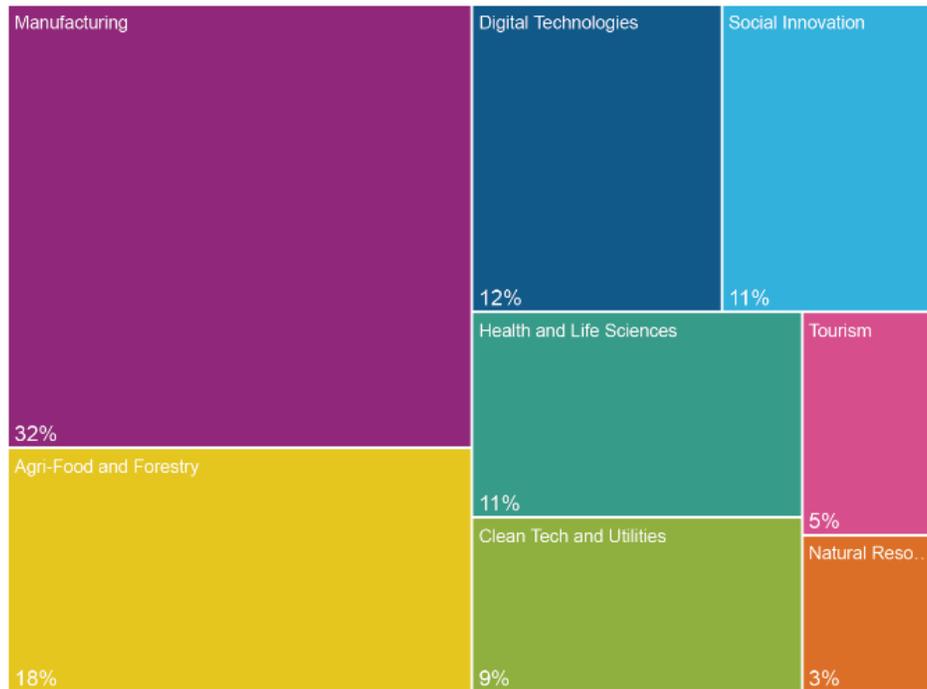
Applied Research Delivers Results in One Year



² CIGan AR Survey 2017-18.



Percentage of College Labs by Sector



- Small and medium-sized enterprises (SMEs), community organizations, and other Canadian enterprises see their competitiveness, efficacy, and sustainability enhanced through their partnerships with college applied research offices.
 - According to the most recent evaluation of the College and Community Innovation Program, “almost a third (29%) of surveyed TAC (Technology Access Centre) clients, who had completed an applied R&D or technical and business service project, indicated that their revenue increased.”³

NSERC’s assessment of Winnipeg’s Red River College’s CCI partnerships found 81% of the institution’s partners developed a new and/or improved prototype product, process, or service, while 69% saw their project and development capabilities improved.

- For over a decade, the federal government has invested in applied research at Canada’s colleges and institutes, with that investment growing from \$78 million in 2015-16 to \$99.24 million in 2018-19, alone.⁴

³ Final Report - Evaluation of the College and Community Innovation Program and SSHRC’s Community & College Social Innovation Fund. September 2018.

⁴ CICan AR surveys, 2015-16 and [2017-18](#).



Strong Innovation Demand from SMEs

Saskatchewan Polytechnic has an allocation of 22 IRAP-CTOs each fiscal year. As of April 1, 2020, the first day of the new fiscal year, their applied research office had already allocated 13 or 59%. Saskatchewan Polytechnic has also seen a strong increase in demand for CCIP Engage grants over 2019-20 with 4 projects approved, 1 application under review and another 10 being finalized.

Current Challenges for College Applied Research Enterprises

Like all Canadian sectors, college applied research has been impacted by COVID-19 in several ways, and similarly, the impact varies across the provinces and territories. In consultation with CIGan's National Research Advisory Committee, comprised of applied research leaders from across Canada, Association pour la recherche au collégial, Fédération des cégeps, Tech-Access Canada and Synchronex, as well as Polytechnics Canada, CIGan has identified the following common issues and challenges:

- Institutions are limited in their ability to access labs and equipment due to physical distancing measures. The return to labs will require reorganizing physical layout, implementing access and movement protocols, and purchasing appropriate personal protective equipment to ensure the safety of staff, students and partners.
- Applied Research offices have implemented extensive work from home arrangements which has led to an increased reliance on technology to maintain operations.
- While many offices have been able to maintain staff, that is not universal and there is uncertainty about how long this can be sustained. Applied research offices face the possibility of staff furloughs or layoffs depending on how long college and institutes campuses remain closed and the ability of their current and potential partners to resume research activities.
- While some colleges report that new partners have emerged, recent business surveys confirm the reduced capacity of SMEs in terms of cashflow and staffing levels. Through a CFIB survey small businesses reported experiencing losses that exceed \$200,000 due to the crisis.⁵ The Statistics Canada survey for the Canadian Chamber of Commerce confirms that a large number are working with reduced staff.⁶
- With the current parameters through the College and Community Innovation Program (CCIP), with cash contributions required from company partners and lengthy grant application processes, many SMEs are unable to engage with colleges and institutes to adapt their businesses for resumption and recovery.
- The framework of current grants does not allow for the flexibility and nimbleness applied research offices need to meet the urgent, short-term needs of company and community partners at this stage in the crisis and through recovery.
- Applied research offices are reporting sustained demand for the faster turnaround grant types within CCIP, notably Engage and Applied Research and Development Grants.

⁵ Investigating the impact of COVID-19 on independent business, CFIB's April 23, 2020 survey of members found the average cost of COVID-19 on small business so far is \$214,915: <https://www.cfib-fcei.ca/en/research/survey-results/investigating-the-impact-of-covid-19-on-independent-business>.

⁶ Statistics Canada's "Canadian Survey on Business Conditions: Impact of COVID-19 on businesses in Canada, March 2020" reported that 12,000 businesses that responded reduced staff hours or shifts, while 40.5% reported they had laid off staff. Nearly one-fifth (18.3%) of all businesses laid off 80% or more of their workforce. <https://www150.statcan.gc.ca/n1/daily-quotidien/200429/dq200429a-eng.htm>