

FOCUS ON COLLEGE RESEARCH

POLYTECHNIC APPLIED RESEARCH: OPEN FOR BUSINESS INNOVATION



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Canada's polytechnics and colleges offer industry-facing applied research solutions that fill gaps in the country's R&D pipelines. Our focus on applied research, innovation and commercialization supports industry innovation needs in ways that are complementary to established, discovery-based research institutions. This is a strength, and a necessary

facet of a healthy R&D continuum.

Since 2008, the institutions that comprise Polytechnics Canada (BCIT, SAIT Polytechnic, NAIT, Conestoga, Sheridan, Humber, Seneca, George Brown and Algonquin Colleges) have worked with 3,759 Canadian companies, 95% of which are small and mid-sized enterprises, conducted 2,481 applied research projects solving industry-identified problems, involved 22,515 college students and 1,978 college staff or faculty in applied research activity, and developed 948 prototypes for their industry research partners. Colleges across the country are involved in similar activity, as Canada initiates investment in college applied research as a vital lever in the R&D toolkit.

The breadth of industry partnerships that polytechnic and college applied research enables was noted in the recent Council of Canadian Academies Expert Panel Report on "The State of Science and Technology in Canada, 2012." The report shows that as a country we excel in many fields of research, and punch above our weight in terms of pub-

lications and international research influence. However, we fall short of unlocking the potential commercial value of the outcomes of basic research. In addition, Canadian businesses perform much less R&D as compared with our international counterparts. Our collective historical identity as "hewers of wood and drawers of water" has meant that ideas are just another basic resource that we draw from the land and export without adding value. Our competitors are exploiting our research to their commercial advantage.

Polytechnics and colleges focus on speed to market and engaging our students in industry innovation. We offer industry and universities alike four key advantages:

- Access to talent – our faculty who are industry professionals, and our students. By engaging our students in applied research we train the highly qualified and skilled people needed for the innovation economy, who gain crucial innovation skills as part of their applied education.
- Access to state-of-the-art facili-

ties – our industry-focused teaching facilities double as applied research labs for companies or scientists who do not have equipment or need help making a prototype or product.

- Access to markets and networks – we leverage our close ties to industry to help our research partners develop products and sales.

- Access to capital – government funding provides matching capital for companies to engage in innovation partnerships, creating economies of scale for firms with ideas but lacking in-house R&D capacity.

The 2007 federal Science and Technology Strategy gave impetus to college applied research capacity through the creation of the College and Community Innovation Program. Yet, the CCIP is the only federal program for polytechnic and college applied research. It is underfunded as compared to demand: we currently turn companies away both for lack of funding and capacity,

limiting our ability to be "open for business innovation."

Firms in Canada are not yet making effective use of the postsecondary research facilities we have, but this is changing. Polytechnic and college applied research can play a more robust role in strengthening national and regional capacity to innovate. We work with research centres and industry partners to enhance competitiveness in the sectors we serve. Our applied research centres offer services to industry that are not currently widely available in Canada – the applied research, commercialization-focused "last mile" services that industry needs in order to test market assumptions.

Canada needs to encourage industry-academic partnerships and have each party play to their strengths, be this basic research, applied research, or industry focused innovation. We need a better balance between the input and output sides of the innovation equation. Broadening the potential outputs for R&D by supporting applied research will foster increased productivity, enable Can-

ada to realign R&D expenditure imbalances, and correct our longstanding poor record on industrial innovation.

There is work to be done by the polytechnic and college sectors in continuing to build the applied research capacity while finding better ways to measure outcomes. This requires us to focus on outputs and on collaborative data gathering to show the return on the (modest) CCIP investment. We would do well to encourage greater linkages among university, polytechnic and college research institutions, and greater industry-academic partnerships overall, building a true innovation system that plays to the strengths of all its parts. By working together, we can increase Canada's global competitiveness.

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