

It Takes a Whole Country...



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Want to increase Canadian business investments in research and development? Crave more new products on the market and jobs created? Need a better workforce ready to tackle today's complex and shifting

world? Supporting applied research at colleges is one of your best bets to collect all three. If you hadn't considered this angle yet, it's maybe because, save a few exceptions, applied research in colleges in Canada is a relatively new phenomenon, barely 15 years old.

In fact, I'd put it at the same age as its human analogue: a 15-year-old teenager who's starting to discover that while a little pocket money is nice, a real part-time job and the keys to the family car would be much better. It's time for a growth spurt in college applied research so it can reach adulthood, to contribute more substantially to the innovation economy with partnerships with industry and enhanced graduates. For this, at least two important processes must take place.

First, a look at the "caloric intake" of that "teenager". It needs to be fed sufficiently, lest its growth be stunted. From 2006 to 2015,

the number of NSERC-eligible colleges grew from 6 to 112.¹ That's a staggering compound annual growth rate (CAGR) of 34%. Meanwhile, the funding for college applied research from its main sources (industry, colleges, Federal and Provincial governments) went from \$45M to \$253.4M in the same period,² for a much lower CAGR of 18.9%. It's even worse when one considers that, presently, colleges receive a mere 2.4% of federal funding for higher-education research.³ Looks like the older sibling is eating our lunch... It has to be noted and applauded that NSERC and other federal agencies have shown incredible leadership in establishing programs to seed and grow applied research in the college sector across Canada. But in light of the current federal review of research and innovation, much more can be done. For every \$1 that the federal government currently puts in college applied

research, another \$2.4 are invested by the provinces, the colleges and industry (which matches at more than 1:1).² The most effective way of increasing the system's "caloric intake" is for the federal government to put more on the plate.

But, as every teenager has been told: with great power comes great responsibility. Colleges also have to accept the mantle of "research adulthood." At the risk of causing whiplash by switching metaphor in midstream: it's time for the college applied research enterprise to graduate from a start-up to a small- and medium-sized enterprise (SME). The more advanced research colleges are already there, but the whole system will benefit from the newer ones turning the corner. Niagara College was in a highly successful start-up phase in 2002-2007, when the field was wide open. When I came on board in 2011, we had to graduate to the SME status to remain

competitive (repeat partners, larger projects, consolidated research foci, more formalized practices, better outcomes and metrics). For the government and industry to see the value of applied research at colleges, through the economic development impact it provides, we must accelerate more colleges into that next phase, that "adult" or SME phase. And this starts, like at Niagara College, with upper management being serious about supporting applied research at their college.

Both of the above processes need to happen hand in hand. It's challenging for colleges to make the jump to "research adulthood" without proper support. In Ontario, help comes through programs such as OCE's Industry Innovation Centre funding and the recent commitment from the provincial government of \$20M over three years for a college applied research envelope. A cross-Canada example

is the NSERC-funded Tech-Access Canada network of Technology Access Centres (TACs), launched this year, through which 30 NSERC TACs are sharing best practices and presenting one coherent message to prospective industry clients. Of course, installing a true program to cover the indirect costs of research, such as is available to most university Tri-Council funding programs, should be a top priority.

It has been said that it takes a village to raise a child. Well, it will take a whole country – industry, government and the colleges themselves – to raise the college research sector into its full potential, for the benefit of Canadian businesses, our graduates and the economy.

¹ NSERC data, private communication, 2016.

² ACCC/CICan Applied Research Reports, 2006/2015.

³ CICan: Pre-budget Consultations – 2017 Federal Budget Canada's Colleges and Institutes – Skills and Innovation for Inclusive and Broad-based Growth in Canada, 2016.