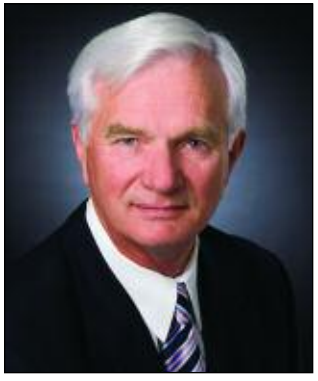
The Role of Canada's Colleges in Research and Innovation



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CANADA'S COLLEGES, INSTITUTES, polytechnics, cégeps and university colleges are leaders in applied research and technology transfer, yet the role of these institutions in Canada's research and development agenda is not adequately understood. They help businesses start, develop and grow, and are vital contributors to our innovation system. Building on a half-century of experience, they embody an enormous concentration of expertise on the application of technology to process improvement and product development. They are graduating our next generation of innovators and entrepreneurs. More than any other institutions, they are key to improving Canada's lagging productivity.

By focusing research on product development, prototyping, business incubation, model simulations and commercialization, they address real-world challenges, and produce the highly-skilled talent needed to apply and sustain an innovative practices workforce.

They house centres of excellence and technology transfer that work with industry partners in fields such as manufacturing, cold climate innovation, agriculture, biotechnology, aquaculture, sport innovation, boreal research, sustainable infrastructure, aerospace, photonics, plastics, microelectronics and nanotechnology.

College faculty and student involvement in applied research is a win-win situation for all involved. Faculty members maintain their close ties with industry; students participate in real-world application of the skills they've learned, and make industry contacts for future employment possibilities; and, facilities and expertise are available to businesses that may not posess sufficient research capacity.

In the words of private sector partner Shaun Jackson, technical advisor at HydroFlow Canada Inc., "Our partnership with Georgian College and its students was a new concept to us. We had no idea such resources were available to us in our community. The manufacturing engineering students conducting this project have demonstrated to us that they have the ability to apply what they have learned in their academic studies. We see this project as the first of many applied research projects with Georgian. In fact, we are currently developing our next project with them."

According to a report released in Feburary 2010 by the Association of Canadian Community Colleges (ACCC), private sector investment in applied and industry-driven research at Canada's colleges increased ten-fold over the last four years. Partnerships for Productivity and Advanced Skills: The Role of Colleges in Canada's Innovation System compared results with a prior study in 2005-2006 and found that private sector investment ballooned from $4 million to $45 million. In the same time, private sector partnerships with colleges increased seven-fold, with 3,602 companies now participating in applied research projects.

The private sector has a real hunger for what colleges offer and turns to them for new technologies, prototyping and process improvement. The results translate into productivity gains, enhanced competitiveness and new jobs. Colleges are particularly adept at helping small- and medium-sized enterprises (SMEs) with their research needs – a vital contribution, since the vast majority of new jobs are created by SMEs.

Colleges are undertaking projects in 142 areas of research specialization, most of which fall within the four priority areas of the federal Science and Technology Strategy.

The report also showed an increase in provincial/territorial government investment from $13 to $25 million and an investment of $35 million by the colleges themselves. However, federal investment dropped from $28 to $27 million.

Canada leads in per capita public investment in discovery research, but is at the bottom of the barrel in productivity growth. Innovation and the diffusion of new technologies characterize the college/institute model and investment here will increase productivity. However, colleges receive a fraction of federal R&D investments.

Recent funding announcements by the federal government, including a $32.5 million investment through the Canada Foundation for Innovation, dedicated exclusively to colleges, recognize the unique contribution of these institutions to private sector innovation and demonstrates growing understanding of the key contribution of colleges to Canada's productivity and economic growth. But it's not enough.

New research by the Institute for Competitiveness & Prosperity indicates that "increased investment in education is critical to build an economy that survives and thrives in the face of increased global competition. As larger economies become more sophisticated and cross the innovation tipping point, our creative skills will be tested, and it is by no means certain that we will be able to assume prosperity as usual. Education is a critical foundation for the broad skills we will need, and we need to step up our investments in this area."

ACCC will continue to advocate for increased federal investment, particularly for applied research in colleges, institutes, polytechnics, cégeps and university colleges and for a widespread understanding of the important role these institutions play in Canada's economic competitiveness.