



Closing the Gap: Innovation and Applied Research

It is well documented that Canada lags behind other G-8 countries in spending on research and development. What is perhaps less well known is that the amount of funding directed to pure and basic research is disproportionately greater than support allocated for research that is closer to the commercialization stage. This *applied research gap* has been increasingly cited as a barrier to a strong Canadian innovation culture.

Innovation underlies a knowledge-based economy, as do opportunities for collaboration and partnerships across the whole knowledge spectrum. As such, the applied research performed by colleges and institutes should be seen as complementary to that undertaken by universities, not as a form of competition.

By nature, colleges and institutes are comfortable working with private industry across the knowledge spectrum, and developing business partnerships to implement results. The match between the skill sets of college and institute faculty and the practical hands-on nature of applied commercialization stage research is strong and dynamic. Colleges and institutes have a demonstrated capability to undertake problem-based research that serves companies in their communities, but can also be applied globally.

Through their strong response to the opportunities presented by the Canada Foundation for Innovation (CFI), colleges and institutes have also demonstrated the institutional culture and capacity to support active research programs. Sixty colleges have engaged in the rigorous CFI funding approval process, and over 55 projects have been approved to date. In addition, many colleges and institutes have been designated eligible for NSERC grants either independently or as co-applicants with universities.

As more and more colleges and institutes play a significant role in innovation and applied research, a number of Technology Centres have emerged in response to the needs of their local and regional communities. For example,

- Olds College Centre for Innovation is currently operating numerous innovative projects in Canada's agriculture and food industry. In addition, the Olds College Composting Technology Centre is operating 31 research projects on behalf of organizations such as Imperial Oil, Parks Canada and the City of Edmonton.
- The Northern Centre for Advanced Technology at Cambrian College serves as a single access point for north-based companies and Industries in areas of technology.
- In Atlantic Canada, the Nova Scotia Community College Applied Geomatics Research Centre and the New Brunswick Applied Research Lab on educational interactivity in the virtual learning environment are both notable for their dynamism and innovation.
- Particularly noteworthy is the Quebec experience, where cégeps have established 23 Technology Centres tied to a specific industry (e.g. Trans-Tech Network). Each centre is mandated to foster economic development through innovative research and the transfer of technology to local enterprises. The sectoral breadth of the centres ranges from composite materials to aerospace and from textiles to environmental technologies.

The positive results of integrating applied research and business incubation functions have also been well demonstrated in other countries. For example, over one third of US community colleges now provide this type of applied research and business incubation assistance to small- and medium-sized enterprises and EVC-Syd in Denmark has helped offset Scandinavia's high business development costs by increasing the innovation capacity of the work force.

Canada needs the maximum R&D capacity of both the college and university sectors. The key to increasing Canadian college and institute R&D potential lies in a series of key strategic policy and funding initiatives as summarized in the following recommendations.

1. **It is recommended** that all provinces and territories mandate innovation and applied research in colleges and institutes. Currently legislation in eight provinces is silent in this area.
2. **It is recommended**, in line with the first recommendation above, that provinces and territories allocate operating dollars within college and institute budgets to support research. Eight provinces do not provide specific line items for research in college and institute budgets; some provinces do not allow the use of operating funds for innovation and applied research and development at the college level.
3. **It is recommended** that all provinces and territories provide matching funds for colleges and institutes that apply for research funds in national competitions. Three provinces do not provide specific matching funds for college and institute applications to national research competitions such as those run by the CFI.
4. **It is recommended** that provincial governments enable those colleges and institutes that wish to establish research units to implement policies and procedures that will allow faculty, staff and students to undertake innovation and applied research.