COLLEGES AND POLYTECHNICS:

Enhancing Collaboration Globally

Joe Boyd
Program Head, Applied Research Liaison Office
British Columbia Institute of Technology (BCIT)

BCIT is honoured to be recognized as Canada's top research college this year. This is a milestone year for us to receive this recognition, as 2014 marks BCIT's 50th anniversary, and also 25 years of providing applied research and innovation services to industry and the community.

When BCIT opened its doors in October 1964, 498 students were on campus, in Engineering, Health and Business. We have grown one hundred fold in the 50 years since, to over 48,000 students on 5 campuses, earning practical career credentials designed for the workplace which span Applied and Natural Sciences, Business and Media, Computing and Information Technology, Engineering, Health Sciences and Trades.

BCIT has also grown beyond its Burnaby campus, with five main campuses and satellite locations province wide. Beyond our provincial borders also: BCIT's international partnerships span training, education and research initiatives in South America, Central America, East Asia and Eastern Europe.

Many other Canadian colleges and polytechnics have shown a similar growth pattern in students and disciplines, and are also expanding into international markets. The Canadian college and polytechnic model is an applied education and training model that produces career ready graduates, enables the transfer of knowledge and skills, and enhances collaboration with foreign educational institutions and industry partners across the globe.

This model is receiving increasing international recognition. Recently BCIT and several other BC colleges hosted a delegation of education leaders from Asia who came to study our applied model of education and research. Why? Their government wanted to improve the employment rate of post secondary graduates in their country by making their education more applied, and knew how successful we have been.

One of the cornerstones of our model is the integration of applied research into the curriculum, providing students with hands on experience solving problems for industry and community partners. Applied research enhances the learner experience, through directed studies and capstone projects, and as undergraduate student researchers working with faculty and research groups on their projects.

Applied research and innovation in colleges and polytechnics is driven by the needs of our partners, and provides innovative solutions to their real world challenges. A key characteristic of applied research is its multidisciplinary nature, and the resulting collaboration required to successfully solve a clients problem. Collaboration really is the name of the game, occurring between different departments within institutions, with other post secondaries: colleges, polytechnics and universities, and with industry associations, government organizations and funding agencies.

Increasingly this collaboration extends across borders. However when we consider Canadian college and polytechnic research and innovation on the international scene, we encounter a contradiction. One of the strengths of colleges and polytechnics is their close connections to the local community and economy, especially small and medium sized enterprises (SMEs). How does local become global? It turns out that what is successful in Canada is also successful in other countries: working together collaboratively, strong community ties, and practical and innovative solutions to real world problems.

In the recent Haitian earthquake, between 100,000 and 160,000 people were killed, mostly due to poor concrete masonry construction. Motivated by this tragedy, a multidisciplinary team of BCIT researchers have focused their research on finding an inexpensive way to test masonry blocks prior to use in construction. Over the course of four years, the team has received support from non-governmental organizations working on Haiti's reconstruction, including the BC Masonry Institute and Builders Without Borders. The project has been funded by two NSERC programs, and involved students and faculty from three different BCIT departments and one of our dedicated applied research groups. They are now close to a solution, developing a prototype for a low-cost device that would be used around the world. With nearly every country in the world using masonry blocks in building, this collaborative research has far reaching implications.

Recent federal research funding developments such as the Community College and Innovation program and research partnership programs and college and polytechnics strong collaborations with industry have allowed us to further develop our research and innovation capabilities. These capabilities go across all programs as well as enabling globally unique research centres to arise. One example is BCIT's Building Science program. This program now has two Master degrees, drawing students from around the globe to its specialized course offerings, and to conduct research in the BCIT Building Science Centre of Excellence.

Canadian colleges and polytechnics have long histories of collaborative research and innovation. We are now moving beyond Canada to show our capabilities on the global stage. BCIT is proud to be recognized for the role we are playing in these developments, and to be named Canada's Top Research College for 2014.