



**21<sup>ST</sup> CENTURY SKILL DEVELOPMENT:  
COLLEGES ARE INEXTRICABLY LINKED TO THE ECONOMY AND  
ECONOMIC DEVELOPMENT**

Presented to the South East Asia Ministers of Education Organization (SEAMEO) Conference  
Leadership and Management in Higher Education:  
Challenges, Opportunities and Ways Forward  
27-28 July 2017, Ho Chi Minh City, Vietnam

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14 July 2017

## **ABSTRACT**

According to the Conference Board of Canada (2016), the province of British Columbia's economy is foregoing up to \$7.9 billion in GDP and over \$1.8 billion in lost taxes annually because too few people have the education and skills needed to help businesses innovate and grow. Additionally, "B.C. employers have strong concerns about the future availability of highly educated workers in the face of an aging population and rising retirement rates" (Conference Board of Canada, 2016, p.i). The British Columbia 2025 Labour Market Outlook (2017) states that 78% of jobs will require a trade, college or university education.

College of the Rockies is a globally engaged Canadian public post secondary institution that offers trades, college and university programs are located in a region where only 57% of the population has a post secondary certificate, diploma or degree (Columbia Basin Rural Development Institute, 2016). As part of a network of over one hundred colleges across Canada, College of the Rockies has been at the forefront of regional economic development, producing many of the skilled workers that the Canadian economy needs and successfully linking graduates to the workforce through their education programs.

Ms. Patricia Bowron of College of the Rockies will provide a practical approach on how Colleges can link to industry and the broader community, creating a skilled workforce for a stronger economy. She will explore the approaches used by College of the Rockies to enhance economic competitiveness in the region and will provide an overview of how the College supports the industry with job-ready graduates. Innovations in program development, creative program delivery strategies and applied learning opportunities to extend both program reach and relevance will be outlined utilizing case studies in diverse sectors including tourism and hospitality, driver and equipment operator training and nursing and health.

## **BIOGRAPHY**

College of the Rockies is a globally-engaged public post-secondary institution located in the Rocky Mountains of British Columbia, Canada. The College was founded in 1975 and has grown to serve over 10,000 students every year. With seven campuses in its region, the College offers government-approved post-secondary certificates, undergraduate diplomas, bachelor's degrees, and graduate certificates and diplomas in a variety of programs.

The College is noted for its commitment to students and the quality of local, national and international partnerships. The College currently welcomes approximately 12% of its students from outside Canada. Their commitment to students was recognized in 2013, 2014 and 2016 when COTR was ranked the #1 college in the world for international student satisfaction by the i-graduate International Student Barometer. The College's excellence in international projects was recognized in 2014 when they received Colleges and Institutes Canada's Gold Internationalization Excellence Award for their innovative international programs and partnerships. In 2014, COTR was also awarded the World Federation of Colleges and Polytechnics' silver award for social development for their health work in Kenya.

Patricia Bowron has a deep knowledge of the Canadian college system combined with more than 30 years of strategic leadership and operational management experience. Her diverse roles have included academic, international and community development leadership, and she has worked in a variety of sectors including extractives, health, tourism, agriculture, community development, business and finance. As a member of the senior leadership team at the college, Patricia is responsible for strategic business and partnership development initiatives at home and abroad.

## **INTRODUCTION AND CONTEXT**

According to the Conference Board of Canada (2016), the province of British Columbia's (BC) economy is foregoing up to \$7.9 billion annually in GDP and over \$1.8 billion in provincial and federal lost taxes annually because too few people have the education and skills needed to help businesses innovate and grow. Additionally, "BC employers have strong concerns about the future availability of highly educated workers in the face of an aging population and rising retirement rates" (Conference Board of Canada, 2016). By 2025, BC will have one million job openings, and 8/10 job openings will require post secondary education or trades training. The British Columbia 2025 Labour Market Outlook (2017) states that 78% of future jobs will require a trade, college or university education.

"Education and training are important means for developing the workforce that British Columbia needs. Skills such as literacy and numeracy and competencies such as problem-solving and critical thinking are also critical. The growing knowledge economy highlights the importance of skilled workers in advancing economic growth and job creation. A shift to a knowledge economy also reshapes labour demand in British Columbia" (British Columbia 2025 Labour Market Outlook, 2017, p.13).

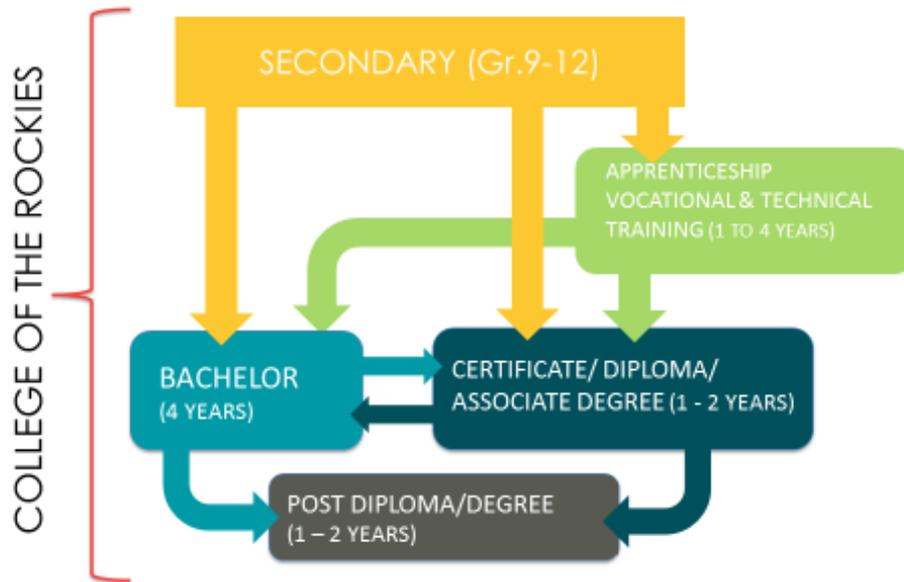
## **THE ROLE OF COLLEGES IN ECONOMIC DEVELOPMENT**

College of the Rockies (the College) is a globally-engaged Canadian public post secondary institution that offers trades, college and university programs and is located in a rural region where only 57% of the population has a post-secondary certificate, diploma or degree (The Columbia Basin Rural Development Institute, 2016). This is exacerbated by the fact that regional high school completion rates range from 76.7% to 78.4 % versus the provincial average of 82.9% (The Columbia Basin Rural Development Institute, 2016), leaving the region in a challenging position to meet projected demands for post-secondary educated employees.

The College is part of a network of over one hundred public colleges across Canada and one of ten members of BC Colleges that focus on training a skilled and competent workforce, supporting community resilience and vitality, contributing to industry competitiveness and providing long term economic benefit to the province of BC. With seven campuses located in the southeastern region of British Columbia, College of the Rockies has been at the forefront of regional economic development, producing many of the skilled workers that the Canadian economy needs and successfully linking graduates to the workforce through their education and training programs.

One of the strengths of the BC system is the role that colleges play across the post secondary education spectrum. As seen in Figure 1 below, College of the Rockies offers career-focused programming at many levels including high school level upgrading, vocational training, certificates, diplomas, associate degrees, bachelor degrees and post-degree certificates and diplomas.

## BC's EDUCATION SYSTEM



*Figure 1 British Columbia's Education System*

“College of the Rockies creates value in many ways. The College plays a key role in helping students increase their employability and achieve their individual potential... However, the contribution of the College consists of more than solely influencing the lives of students. The College’s program offerings support a range of industry sectors in the College region and supplies employers with the skilled workers they need to make their businesses more productive. The expenditures of the College, along with the spending of its employees and its students, further support the local economy through the output and employment generated by local businesses. Lastly, and just as importantly, the economic impact of the College extends as far as the provincial treasury in terms of increased tax receipts and decreased public sector costs” (EMSI, 2013, p. 8).

While the effect on students and value-addition is evident, two factors highlighted by EMSI are often less obvious and will be explored in this paper: the direct economic value that college operations provide to the region; and the importance of linking the supply of skilled workers to the workforce and human capital demands of industry.

### **ROLE OF COLLEGE OF THE ROCKIES AND ITS DIRECT ECONOMIC IMPACT**

College of the Rockies serves over 10,000 students each year and has a direct regional impact on income in a vast region of British Columbia with a population of nearly 80,000 who live within a large 45,000 square kilometer area. To best serve the region’s needs, the College has its main campus and its Gold Creek campus located in Cranbrook, with additional satellite campuses in Creston, Golden, Invermere, Kimberley and Fernie and offers many of its programs through non-

traditional instructional methods to reach within and beyond the College's geographic region. In 2016/17, 756 credentials were awarded and the College has consistently ranked #1 in international student satisfaction in the i-graduate International Student Barometer survey as it has grown to approximately 12% of students from outside of Canada.

The College is one of the region's major employers and provides substantive economic benefit to the region with \$206.7 million of total additional income created by College operations (EMSI, 2013) employing approximately 850 employees. As a full partner in the economic future of the region, the College plays a vital role in identifying economic goals and priorities and implementing strategies to ensure the region reaches its economic potential. Delivery of a variety of academic, career and vocational programs to industry and the broader community creates a skilled workforce for a stronger economy, enhances economic competitiveness in the region and supports the industry with job-ready graduates. Innovations in program development, creative program delivery strategies and applied learning opportunities extend both program reach and relevance in diverse sectors including tourism and hospitality, driver and equipment operator training and nursing and health.

## **ROLE OF COLLEGE OF THE ROCKIES IN DIRECT LINKAGE TO INDUSTRY**

Focusing on industry demand, current and projected supply is vital to the effectiveness of the College. Therefore, new programming is focused on the combination of demand by both sector as well as the occupational type and existing programs are reviewed to ensure they continue to be relevant and in-demand for the marketplace. As such, based on recent trend analyses, the College is focused on three key areas in its expansion and investment plans. These include occupations related to tourism and hospitality, truck driving and equipment operation and nursing and health care.

### *1. Tourism and Hospitality*

According to the British Columbia 2025 Labour Market Outlook (2017, p. 16), "about half of total projected job openings over the outlook period are expected to be in three major occupational groups: Sales and Service, Business, Finance and Administration, and Management occupations". This will also include substantial numbers in positions including supervisors in food service, accommodation, travel, tourism, along with chefs, cooks, retail salespersons, *Maîtres d'Hôtel* and hosts/hostesses, bartenders, food and beverage servers, travel counsellors, ticket agents, front desk clerks, tour and travel guides, outdoor sport and recreation guides and casino operations. The College offers a substantive array of competency-based programming related to this growing tourism and hospitality services sector to attempt to meet the high demand.

The Tourism and Recreation Management Program (TRMP) is one of the College's most fundamental programs and is designed to provide maximum flexibility for employment in the fields of tourism, hospitality and recreation management. The program provides certificate, diploma and laddering options into the Bachelor of Business Administration Degree or other provincial programs. The program has particular relevance to the industry as it provides access to high demand industry certifications such as FOODSAFE, WorldHost, CPR "C", Occupational

First Aid Level 1 and Serving It Right. Employers in the region hire graduates for supervisory roles in resorts and recreation facilities.

A key learning strategy in the program is the use of community-based projects which provide specific experiential learning opportunities for students. An example is the applied research project undertaken for the Cranbrook Community Forest Society where students assisted the Society by conducting research on forest usage, providing the non-profit board with data to assist them in planning future usage opportunities and challenges. “The students did a great job and actually expanded the project beyond our original request,” says Todd Hebert, CCFS Board member. “We now have a good sense on how we might engage better with our members and users into the future and have also identified some important concerns that they have. This will provide the Board with ideas for future planning” (Colleges of the Rockies, 2017, para. 3).

The College’s signature tourism programs are the Mountain Adventure Skills Training Program (MAST) and Adventure Tourism Business Operations (ATBO) programs which train students to work as adventure guides and outdoor adventure operators. The MAST certificate trains students to work as professional snowboard and ski instructor, raft and trail guide or adventure camp instructor. Building on our suite of tourism programs, the Adventure Tourism Business Operations (ATBO) certificate and diploma programs were developed to enhance entrepreneurial competencies of our graduates and couple them with outdoor four-season adventure skills. A combination of business and technical leadership skills allow students to successfully operate ventures at home or abroad. Leaving the programs with numerous industry certifications such as occupational and wilderness first aid, instruction in skiing, snowboard, lake-water and swift-water, avalanche and mountain-biking instruction, graduates from these programs are ready for year round employment in the tourism sector.

Geared for year round employment, these programs provide direct hands on learning for students. Unique to the programs are the many out-trips that are planned and undertaken by our students, with hands-on learning at its best in the rugged Rocky Mountains of Canada and experiential learning provided through numerous industry practicum opportunities. After graduation from the program, ATBO alumnus Greg Snell undertook an internship position with the College to work with indigenous populations in Ecuador. Greg is best known for being Australia’s “Best Job in the World” winner. Greg’s position saw him living on Kangaroo Island in South Australia for six months where he spent his time swimming with great white sharks, snorkeling with sea lions, hanging out with kangaroos and helping to conserve the pristine natural environment of the island. Greg now works as an adventure tour guide and is a successful global entrepreneur, writer, and photographer (Travel Global Think Local, n.d.).

A creative new program being delivered by the College is the Mountain Hospitality Program. This short and intensive six-week program was developed in direct partnership with industry to meet their short term hiring deficits in the region and has been targeted at marginalized demographics such as those who are underemployed, who have only seasonal work or are low skilled or disadvantaged in the workplace. As with all of the College’s tourism programs, this program includes numerous industry certifications along with computer, job search, communications and teamwork skills. The program includes field trips to regional resort businesses to better understand front and back country operations. The capstone component is a

one-week work placement that has become a successful job search and interview option for candidates to get a head start in their job search. These skills development programs at the College have had a high 75 – 90% success rate leading to sustainable employment.

## *2. Driver and Equipment Training*

According to the British Columbia 2025 Labour Market Outlook, there is expected to be significant demand in trades, transportation and related occupations (about 123,000 job openings representing 13 percent of total job openings over the 10-year outlook period). Projections for drivers including transport truck, bus, delivery and courier and heavy equipment operators total nearly 30,000 openings to 2025 (British Columbia 2025 Labour Market Outlook, 2017).

College of the Rockies offers one of the most innovative driver training institutes in Canada. Working in partnership with industry and utilizing state-of-the-art simulation technology, the College has become well-known for its training for haul trucks and commercial vehicles including transport, dump tow, fire and logging trucks and has extensive expertise in the recurrent safety training of drivers. Upgrading and safety training of light and heavy vehicle drivers is paramount to a company's success and returns on investment are often substantive.

"Simulation based operator training has been successfully applied to a range of diverse industries where high risk and high costs are everyday issues requiring smart solutions. Whether piloting a plane or launching a space shuttle, simulation training has been proven to dramatically reduce risk, cost, unscheduled maintenance, increase trainer effectiveness and efficiency while maximizing productivity. Within the often hazardous mining industry, simulation training has quickly gained recognition as a significant method of increasing site safety and profitability through improved operator skill and knowledge" (Immersive Technologies, n.d.).

Unique to its programming is the use of the College's varied mobile simulation units. These simulators allow trainees to undertake real-life driving maneuvers and to safely practice and apply learning to manage unexpected situations. Opportunities to have visual and sensory input while learning to steer, shift and become comfortable with cab controls, while not putting the vehicle or driver at risk increases the confidence and overall success of new truck drivers or those refreshing their skills. Along with personalized one-on-one training, the driver and equipment operator programs include resume writing and job search skills coupled with health and safety certifications.

Barb graduated from the Haul Truck Operator program in September 2013 and is a great example of one of the many successful students that have gone through the program. "After repeated attempts to apply for Haul Truck Operator positions with several companies and getting nowhere, I decided to take the Haul Truck Operator program offered at College of the Rockies... The instructors were extremely knowledgeable and offered real-world experience along with their teaching... Within 3 weeks of graduating from the program, I had my first interview with a large BC mining company and was hired for a start date of December 2013. ... This is a whole new direction in life for me and I am looking forward to growing and advancing with my new employer" (Program graduate, 2013).

### *3. Nursing and Health*

College of the Rockies supports the health care sector through the delivery of a variety of health care and related training programs. Working closely with public and private sector partners has been key to the College's success in working with this growing sector.

“BC's health sector employed 227,000 workers in 2015, one of the largest sectors in terms of the number of workers. The sector is also one of the fastest-growing industries, with employment growing at an average rate of 32 percent each year in the past decade, much higher than the 10 percent provincial average over the same period” (British Columbia 2025 Labour Market Outlook, 2017, p. 23).

Registered Nurses support primary health care and are employed in a variety of health care settings ranging from acute care hospitals to community-based programs. There is a substantial need for registered nurses and registered psychiatric nurses, with 25,360 openings projected through to 2025 (The British Columbia 2025 Labour Market Outlook, 2017). College of the Rockies works in a significant strategic partnership with the University of Victoria to offer the Bachelor of Science in Nursing (BSN) program, ensuring students meet national and provincial standards for nursing education. As one of two degree partnerships with the University, the advantages of this creative partnership include sharing curriculum and expertise, access to a variety of urban and rural practical learning opportunities and a being part of a scholarly learning network that covers various specialties providing the best possible learning opportunities for students.

Students in the BSN program have the opportunity for significant industry-based experience through practicums, preceptorships, and experiential learning opportunities. As an example, the “Spring into Health” fair combines community-based public education with an excellent opportunity for students to have hands-on teaching, learning and research skills for health promotion and illness prevention. Students undertake research into evidence-based health information to share with the public and use interactive and multimedia approaches to share health messages. Topics include an array of subjects including sleep hygiene, healthy aging, stress management and even healthy screen time and internet safety.

Along with the need for registered nurses, there is a strong and growing demand for front line health care workers in Canada and abroad with 19,220 job openings projected in BC alone through 2025 for this category of occupation (The British Columbia 2025 Labour Market Outlook, 2017).

The College's Health Care Assistant program trains frontline care providers to support the emotional, cognitive and social well-being of clients/residents in residential or institutional facilities. To support the sector's needs for graduates, the College provides just-in-time training opportunities by rotating this program to various communities. This rotational approach allows for better utilization of capital and instructional resources, and accommodates the pent-up demand in communities as new health care facilities open, without creating an oversupply in the market in specific communities. The program typically rotates through our communities about every three years, providing industry access to new graduates as attrition occurs in their

workplaces. Partnering with organizations including Interior Health Authority and Golden Life Management, students have access to ongoing practicum opportunities and move easily into employment from this experiential learning. In fact, 96% of the College's graduates from this program from 2014 to 2016 are employed.

## **SUMMARY**

Colleges have an important mandate in supporting the economy and economic development both through their direct economic contribution of their organizational operations as well as through the creation of a skilled workforce that allows the industry to flourish. To directly support industry, educational institutions undertake a number of innovative approaches to link their graduates to the workplace:

1. Institutional partnerships with other educational facilities such as the University nursing partnerships with College of the Rockies provide opportunities for faculty, graduates and students to enhance their teaching and learning. Creative partnerships share both costs and expertise and allow for optimal learning success for students.
2. Articulation agreements specifically to support learning pathways for students are an important option to allow for incremental learning for students. Opportunities to work between stages of a diploma or degree allow students to better acquire competencies at each level of the work. In fields such as tourism, this laddering opportunity allows graduates to apply their learning and fill workforce needs in an incremental fashion, allowing for learning from operations to supervision and providing employers with the various skills sets needed in their businesses.
3. Flexible delivery is a key way to support industry needs. Carefully managing the supply of graduates through strategies such as rotating programs between sites provides opportunities to meet pent-up demand for employees without flooding the marketplace with graduates.
4. Simulation and real life practical options create tangible learning opportunities for students. Learning in a safe and supervised environment where repetition can support the building of motor skills, reflex, and critical thinking is a highly effective strategy to support the development of job-ready graduates.
5. Hands-on and experience-based learning is a critical factor to support mastery of competencies for students. This can be achieved through course projects and applied research and through practicum learning opportunities at home and abroad. Critical to the effectiveness of this learning approach is good project design, evaluation and follow up to ensure learners and industry partners are well supported and engaged.
6. Industry linkages are a crucial component of the work that colleges perform to support the economic and social development of their stakeholders. These links include access to employment opportunities, development of occupational competency profiles, informal practicum placements, and full on-the-job training opportunities. The inclusion of industry certifications is crucial to ensuring program relevancy for students and graduates. Of

paramount importance is that colleges need to continue to refresh and enhance programs to ensure that industry has access to the workforce it needs to grow.

Colleges are inextricably linked to the economy and economic development. Through strategies that include hands-on and experiential learning and working closely with industry and communities, colleges play a key role in supporting regions in developing and implementing their economic development strategies to create healthy and prosperous communities.

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