

Health Intelligence



Amplifying Applied Research in Canadian Colleges

Strategic Thinking for Competitive Positioning

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Executive Summary

- ◆ With a focus on applied research that solves the real-world challenges of the local community and beyond, colleges address a critical gap in the innovation continuum.
- ◆ While governments across Canada increasingly recognize the value of college-based research, colleges aspiring to unlock the potential of their research programs face scarcity of targeted funding, heightened competition from other academic institutions and the need to demonstrate the impact of research investments.
- ◆ Potential strategies that colleges can explore to fortify their competitive positioning include:
 - ◇ Building targeted research capacity and expertise in a small number of strategic focus areas
 - ◇ Setting research priorities that align with current government priorities and regional economic strengths
 - ◇ Creating innovation centres dedicated to collaboration with local startups and SMEs
 - ◇ Accelerating R&D for industry partners by providing infrastructure and sector-specific expertise
 - ◇ Developing new approaches to communication that strengthen industry engagement in college research

This brief explores the unique dynamics that colleges must address to establish a competitive edge, presents proven and emerging strategies to distinguish research programs, and highlights success stories from the Canadian college ecosystem.

Applied research at colleges brings unique value to the Canadian research and innovation landscape.

Distinguishing Features of College-Based Research Programs



Greater focus on addressing the needs of local/regional businesses and stakeholders



Emphasis on working at the pace of business to deliver practical, real-world solutions



Favourable intellectual property terms that enable business partners to retain ownership



Real-world training focused on practical skills and hands-on experience



Filling the technology development gap between applied research and commercialization

Federal and provincial governments are beginning to recognize the need for funding programs designed for Canadian colleges.

Select Examples of Government Funding for College-Based Research



The federal government has introduced new funding models (e.g. Tri-Agency Mobilize grants and Community Innovation program) to support the direct and indirect costs of college research and private sector partnerships.



Alberta's Research Capacity Program supports successful applications to the federal CFI College Fund for research infrastructure.

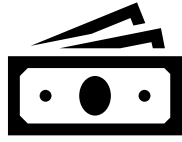


The Fonds de Recherche du Québec (FRQ) offers funding programs for colleges, including multi-year operational research funding.



The Government of Ontario co-funds research infrastructure projects through the federal CFI College Fund.

Despite progress, Canadian colleges face challenges in accessing research funding.



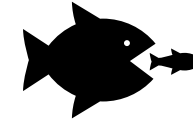
Limited Funding

Although federal investments have grown in recent years, funding for applied college research still accounts for less than 2% of R&D investments across higher education and most competitive funding programs are still oriented towards institutions conducting both basic and applied research.



Growing Need to Align with Government Priorities

Research funding is increasingly tied to changing federal and provincial government priorities, including the need to demonstrate impact on the regional economy, talent pipeline and equity, diversity and inclusion.



The Big Fish Effect

A small subset of colleges attract the majority of competitive funds, enabling them to build the research capacity that positions them to continue to successfully compete for funding at the expense of the broader college ecosystem.

Canada's top research colleges are taking strategic actions to increase competitiveness and strengthen industry collaboration.



Competitive Niche: Build targeted research capacity and expertise in a small number of strategic focus areas



Strategic Alignment: Set research priorities that align with current government priorities



Regional Innovation: Create innovation centres¹ dedicated to collaboration with local startups and SMEs



Technology Access Centres: Accelerate R&D for industry partners by providing infrastructure and sector-specific expertise



Communication Strategies: Develop new approaches to communication that strengthen industry engagement

Case Study: Competitive Niche



Niagara College has had success in attracting research funding by establishing expertise in **four research areas** of relevance to the Niagara region.

Horticulture and Environmental Sciences

Expertise in areas including:

- ◆ Production Practices
- ◆ Technology Assessments
- ◆ Pest and Disease Control

40 Projects with Industry Partners



Food and Beverage

Expertise in areas including:

- ◆ Product Development
- ◆ Food Safety and Regulations
- ◆ Sensory Analysis

42 Projects with Industry Partners



Manufacturing

Expertise in areas including:

- ◆ Automation/Process Improvement
- ◆ Reverse Engineering
- ◆ 3D Technologies

55 Projects with Industry Partners



Business and Commercialization

Expertise in areas including:

- ◆ Market Research
- ◆ Business Strategy
- ◆ Brand Development

67 Projects with Industry Partners



In 2022, Niagara College completed >220 research projects and earned the second-highest spot for college research funding in Canada by attracting more than \$18.1M in funding in these four sectors.

Case Study: Strategic Alignment

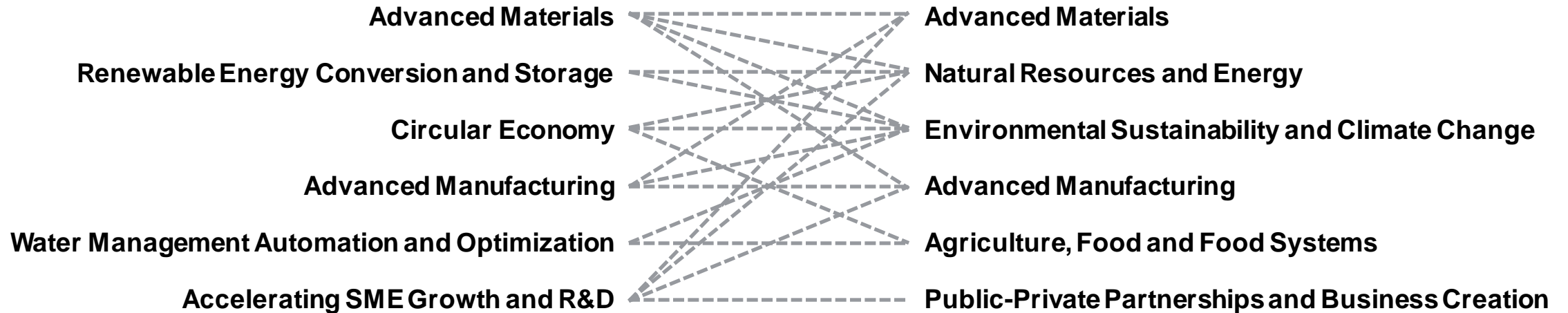


Lambton College **benefits from an alignment of its research priorities** with key national and provincial government priorities.

Select Lambton Research Priorities



Select Government Research Priorities



In 2022, Lambton was awarded **over \$5M in competitive government research grants to establish high-priority research and innovation platforms** focused on the circular economy of materials and electrical energy storage.



Southern Alberta Institute of Technology (SAIT) offers **dedicated spaces for networking and research collaborations** with industry partners.

Technology Demonstration Hall



- ◆ The Technology Demonstration Hall is accessible to applied research faculty and researchers for collaboration and networking events with business and industry partners.
- ◆ The centre boasts state-of-the-art AV equipment, including a video wall, multi-camera video-conferencing capabilities, and a high-tech podium.

Investments like the Technology Demonstration Hall have enabled SAIT to **continue to elevate its ranking in Canada's Top 50 Research Colleges.**

Case Study: Technology Access Centres



Northern Alberta Institute of Technology is home to three **Technology Access Centres (TAC)**—specialized centres that provide industry access to state-of-the-art facilities and multidisciplinary experts to solve challenges.

Sensors and System Integration TAC

- ◆ Prototype development
- ◆ Sensors, optics and electronics
- ◆ Internet of Things
- ◆ Additive Manufacturing

Boreal Forest Plant and Seed Technology TAC

- ◆ Reduction in greenhouse gas (GHG) emissions
- ◆ Forest reclamation
- ◆ Native plants and seeds

TAC for Oil Sands Sustainability

- ◆ Tailings management
- ◆ Tailings site remediation
- ◆ Process water management
- ◆ Sustainable energy and mining
- ◆ Reduction of GHG emissions

Industry demand for applied research in 2021-2022 led to the expansion of **scope, impact and number of staff** in the Sensors and System Integration TAC.

Case Study: Communication Strategies



Canadian colleges are designing and implementing innovative approaches to expand their reach, effectively engage with potential industry partners and communicate the opportunity for co-creation.

Southern Alberta Institute of Technology has leveraged Collisions YYC, a podcast focused on economic transformation in Calgary, as an innovative channel for amplifying its communication with private sector players in local industries.



Northern Alberta Institute of Technology implemented an institution-wide customer-relations management platform to more effectively share information and manage relationships with industry.



George Brown College developed a Research Portal to showcase the outcomes of past academic-industry partnerships and match the needs of potential partner organizations with relevant researchers, facilities and funding.



College leadership must take a strategic approach to unlocking the potential of applied research programs.

With increasing recognition of the value of college research from the Canadian government and industry, now is the time for colleges to think strategically about their R&D capabilities.

Success will require colleges to understand their unique advantages to define a competitive niche, establish mechanisms for boosting research productivity, forge partnerships with industry and other end-users, and craft compelling cases to secure limited government funding.

Shift Health has extensive experience positioning academic research programs for success.

Shift Health applies a science mindset to support colleges, universities, academic health sciences centres and research institutes to:

- ◆ Develop incisive research strategies that position our clients at the frontier of science;
- ◆ Design commercialization models that accelerate innovation; and
- ◆ Craft compelling cases to secure funding and partners.

20 YEARS supporting health research and innovation globally	300+ CLIENTS across the health ecosystem
\$2B+ RAISED to support health R&D efforts	50+ R&D PARTNERSHIPS successfully implemented

Track Record Highlights

Shift Health welcomes the opportunity to explore how we can support you in strengthening your college's applied research program.



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