

**Acadia University**  
**Strategic Research Plan**  
**2015-2020**

Acadia University has been among the best in its category in Canada since national ratings for universities were established. We create and nurture a strong culture of academic inquiry and innovation by building on the outstanding skills of our researchers, by maintaining a focus on our core research disciplines, by celebrating the importance of student research, and by facilitating an increasingly collaborative and interdisciplinary approach to research initiatives.

Our first Strategic Research Plan (SRP) was constructed in 2000 and updated in 2006. Its intent was to engage the university

## **Focusing**

Decidedly rural and positioned on the shores of the renowned Bay of Fundy, within the stunning Annapolis Valley, our strategic focus reflects our geography and its people, as well as the international reach of many of our researchers and the impact of their work. While rural and coastal is our strategic focus, it does not confine or restrict the breadth of research that takes place at Acadia.

Our strategic focus names an evolving institutional awareness



witnessed mass out-migrations as youth, in particular, leave for urban areas or resource-rich regions with better job opportunities. Yet, there is emerging evidence that many youth are



only to good health, but also to quality of life and contentment with overall life circumstances.

Research into human health and well-being at Acadia is greatly enhanced by the presence of a Tier I Canada Research Chair in Occupational Health and Well-Being, as well as three formal research centres: the Centre for Organizational Research and Development, the Centre of Life-Style Studies, and the Centre for the Sensory Research of Food. Within the Centre of Lifestyle Studies, substantial research is being done on physical activity as a prevention and rehabilitation tool. Additionally, there are evident links through the study of contaminants to the previously-mentioned Centre for Analytical Research on the Environment. Both undergraduate and graduate students are actively involved in the research of these centres, as well as with faculty research throughout this theme area.

Broadly speaking, the multiple prongs of health-related research cluster around foods, as well as physical, social, and psychological/emotional health and wellness. They also reveal linkages to research named in other themes. Food and agri-food activity includes established areas of research such as water quality analysis and product testing, but also incorporates newer programs focusing on food security, probiotics, food citizenship, and feeding in hospitals.

Health and wellness includes excellence in research on the connection between physical activity and diabetes management, the role of relaxins in treating conditions associated with aging, physiological responses to stress, athletic therapy, applied biomechanics, cancer and infectious diseases, alcohol harms, ligament injuries, and drug abuse. Social health and wellness includes research on parent-child relationships, workplace civility, in-home care of seniors, circumstances of rural youth, infant food insecurity, and a host of disciplinary and cross-disciplinary investigations concerning equity and social justice. The results of some health and wellness research has resulted in nationally and internationally recognized programs such as the Sensory Motor Instructional Leadership Experience (SMILE) and Kinderskills. Research of a psychological and emotional thrust includes extensive work in attachment theory, personality, counselling, and sexual health.

### **Innovative and Enabling Technologies**

Innovative and enabling technologies include research conducted by some Acadia faculty members and students on the theoretical and scientific foundations of many technologies. Coupled with this is research into the pedagogical and methodological applications of technologies, and the utilization of technology in support of faculty and student research programs.

The heart of the Innovative and Enabling Technologies theme casts a double spotlight on the technologies that are present on campus to support high-quality research, as well as foundational research on the technologies themselves. These technologies cluster into information and communication technology (ICT), applications for materials science, modelling, and data analytics.

Foundational research in ICT occurs within selected units on campus, while applications, often occur across all faculties and with external partners. Researchers are studying the interactions of hardware and software and the world-wide web, the interfaces of peoples and communities with ICT technologies and how they impact broad social issues, and the role of technologies in engaging diverse cultural groups. ICT extends to research on issues of technology and public policy, political debates, production and reproduction of creative practices within the arts and sciences, and the preservation of artistic and scientific works in digital form as part of cultural heritage and workplace literacy, health, and productivity. Library and archives initiatives, including the digitization of unique local archival material and the E. C. Smith Digital Herbarium, have facilitated research across the disciplines and beyond Acadia.

The materials science, modelling, and analytics capacity areas are undergirded by two research centres and one institute: the Acadia Centre for Microstructural Analysis, the Acadia Centre for Mathematical Modelling and Computation, and the Acadia Institute for Data Analytics. The microstructural analysis centre provides a cluster of micro-analytical equipment, several of which are unique in Nova Scotia and the Maritimes. It also represents a forum for multidisciplinary research and collaboration at the interface between physical and life sciences.

Work associated within the Centre for Mathematical Modelling and Computation, and the Data Analytics Institute has application across the natural, biological, and social sciences, and in some instances within the humanities. Quantitative modelling enables researchers to describe, assess, and predict a wide range of phenomena, from subatomic behaviour to climate change. The Analytics Institute is especially focused on local agricultural, environmental, health care, and green energy issues. Beyond this, analytics covers a broad spectrum, including data management, mathematical, statistical, and machine learning methods for data modeling, and techniques for data visualization in support of decision making. The library is taking the lead in developing digital research data management services and resources to support data organization, and exploring channels through which data preservation, discovery, and sharing can be facilitated.

## **External Engagement**

Research is traditionally conceptualized as pure (curiosity-driven) or applied. Both occur at Acadia in multiple ways and have varied impacts, intentional and inadvertent. In constructing our Strategic Research Plan with a deliberate focus Rural and Coastal we are staking claim not only to a particular geography, but also to a commitment to apply our considerable research expertise to bring positive and powerful impacts to these regions by contributing to their cultural, economic, and environmental development. Fostering deep and meaningful relationships between and among our university scholars, library and archives, research centres and institutes, and external organizations is a critical aspect of our Strategic Research Plan.

An example of the way from the Atlantic Canada Opportunities Agency and the Province of Nova Scotia, Acadia established a combined incubation and innovation facility to nurture local start-up businesses and deliberately located them in the same physical space as three research institutes: the Acadia Tidal Energy Institute, the Acadia Institute for Data Analytics, and the Atlantic Wine Institute. The

work of these institutes is predominately focused on issues that impact rural and coastal regions. Co-locating institutes with start-up businesses creates a dynamic and synergistic environment where discussion of research and applications thrives.

Leadership in facilitating external research-related partnerships emanates from the Office of Industry and Community Engagement, a division of Research & Graduate Studies. Following from a focus group session with local industry, government, and funding agency representatives in 2010, ICE established a multiple component strategy to guide its operation. At its core, this strategy has focused on developing more personal engagement and closer relationships with industry organizations and economic development agencies which themselves work directly with businesses, and seamless lines of communication which expedite problem-solving collaborations between Acadia researchers and external organizations. The Office recurrently hosts information sessions and workshops that bring together external industry, business groups, and provincial and national funding partners, with Acadia researchers to focus on emerging opportunities and problem-solving strategies.

In recent years, research activity has evolved to include hundreds of external partners on projects ranging from large multi-partner collaborations examining the environmental effects of installing tidal turbines in the Bay of Fundy, to the art and narratives of Inuit elders, and to consulting projects involving laboratory analytical services. These collaborations frequently involve international partners. In some cases, research done by Acadia faculty has led to commercial application resulting in royalty revenues and the creation of spinoff companies. Collaborations like these are examples of applied research contributing to solutions to regional issues and problems.

Further examples of these collaborations are represented by Acadia activity levels on NSERC Engage and Engage Plus programs, which foster the development of new partnerships between researchers and companies. From its launch in 2010 to 2015, Acadia has established over 24 Engage projects, garnering almost \$550,000 for faculty and students, making us the most active of all small universities in Atlantic Canada. Other industry connections and partnerships have garnered millions in research dollars and created exceptional opportunities for both faculty and students.

Assistance Program and the Atlantic Canada Opportunities Agency, including its Atlantic Innovation Fund and the Innovative Communities Fund.

## **Canada Research Chairs**

A principal imperative of the 2000 Strategic Research Plan was the deployment of Canada Research Chairs. The CRCs have brought extensive scholarly, technical, and intellectual expertise to the campus community and beyond. Each of these CRC positions substantially strengthens and provides scholarly leadership within their primary theme areas. With the conclusion of some Chair positions and the initiation of others, the current CRC distribution at Acadia is:



