

LAKEHEAD UNIVERSITY STRATEGIC RESEARCH PLAN SUMMARY 2019-2024

INTRODUCTION

As Northwestern Ontario's only research-intensive university, located on the north shore of Lake Superior and amidst a vast boreal forest, it is widely acknowledged that Lakehead plays an essential dual role. As an institute of higher learning, it offers a broad range of arts and science disciplines and professional programs to its widely diverse student populations. As a research facility, it has a responsibility to generate/gather knowledge about the region for use in the social, economic and cultural development of the area. Established in 1965, Lakehead offers a diverse range of under-graduate and graduate programming with ten faculties and a total enrolment of over 8000 students: Social Sciences and Humanities, Science and Environmental Studies, Business Administration, Education, Medicine, Engineering, Natural Resources Management, Health and Behavioral Sciences, Law, and Graduate Studies. With 11 Canada Research Chairs, 343 faculty members, 12 research centres, 38 graduate programs (1,452 full-time graduate students), and external research funding that has increased 33% in the last 10 years, Lakehead's sustained development in research is clear. In 2019, Research Infosource named Lakehead Canada's Research University of the Year in the undergraduate category five years in a row.

MAJOR OBJECTIVES OF THE PLAN

- To strengthen research and scholarly activity at Lakehead that is of outstanding quality and leading in its innovation, especially in strategic interdisciplinary research areas that are prominent at, or unique to, Lakehead University among Canadian universities, while allowing for the development of new emerging areas of concentration, with the long-range objective of creating new institutional centres of research excellence;
- To enhance the training of highly qualified personnel (HQP is defined as undergraduate/graduate students and postdoctoral fellows), by increasing the number of HQP, and by providing a highly stimulating research environment for all of our students that establishes Lakehead as a leader in the integration of research and teaching;
- To ensure researchers have access to superior research resources and infrastructure at both of our campuses and to manage these to ensure their effective and efficient use. A vibrant and well-resourced library is essential to sustaining Lakehead's research enterprise. The Library plays a key role in ensuring primary and online materials, journals, databases, and references are easily accessible for researchers;
- To develop new research partnerships with communities, businesses, industries, government, other academic institutions and other partners, regionally nationally and internationally; and
- To enhance knowledge mobilization, translation, transfer and application in order to maximize their benefits to society in Northwestern Ontario, Simcoe County, and beyond.

PRIORITY AREAS FOR RESEARCH AND RESEARCH TRAINING

While it is recognized that all research and scholarship being carried out at Lakehead University can enhance our reputation, we must focus our resources towards building depth and achieving excellence in areas of high research activity while continuing to expand research and other scholarly and creative activities across disciplines. The following five research priorities have been identified for further development where new resources will be allocated including Canada Research Chairs and Canada Foundation for Innovation (CFI) grants (priority areas are listed in alphabetical order):

Cultures, Societies, and Social Justice

Lakehead University has a strong tradition of research focusing on the complex ways in which cultures and societies around the world develop, communicate, and organize themselves. Much of this research examines the ways in which languages, values, norms, literatures, arts, technologies, organizations, and institutions inform and shape historical and contemporary lives. An emphasis of this research is social justice, which refers to the belief that the world should be organized and governed in ways that allow for and promote equality, fairness, dignity, solidarity, and institutional accountability. Proponents of social justice work to address inequalities based on differences such as income, race, gender, age, ability, and sexual orientation.

First Nations, Métis, and Inuit Research

Lakehead University recognizes the importance of prioritizing community-based research with Indigenous community research partners. The inclusion of Indigenous issues and Indigenous Peoples (students, researchers, community members) in our institutional plans is an indicator of continued efforts to build capacity in Northwestern Ontario and Simcoe County to address the recommendations of the Truth and Reconciliation Commission of Canada (TRC) and Universities Canada Principles on Indigenous Education. Research in this area must be informed by these foundational documents, and should also consider directions for future relationships with Indigenous Peoples.

Health and Well-Being

Researchers in this area aim to make a concrete difference in the health and well-being of our communities across the age and health continuum. The research conducted also has a focus on Indigenous and rural issues, recognizing that being situated at a distance from major urban centres can pose considerable challenges to the maintenance of good health. Lakehead University has been home to the Northern Ontario School of Medicine since 2005, and a strong partnership has developed over the years between Lakehead University and the Thunder Bay Regional Health Research Institute (TBRHRI), resulting in the cross appointment of several joint research chairs at both institutions.

Informatics, New Materials and Technologies

Rapid advancements in technology are creating new opportunities for innovation for Lakehead researchers. Integrated hardware, software, and communication links are essential for modern society. The safety, efficiency and reliability of critical municipal and industrial infrastructure in our regions, such as electrical power stations, communication technologies, paper mills, mineral processing facilities, and renewable energy installations, are significantly improved through the application of advanced technologies. Cyber-security, advanced control systems, smart sensors, predictive maintenance and processes, and health-condition

monitoring and optimization will lower operating costs and increase safety and productivity. Also, new and optimized artificial intelligence algorithms have shown immense potential for economies of scale in big data analytics industries.

Sustainability, Resources, and the Environment

Interdisciplinary research with applications to sustainability, resources, and the environment is a natural area of focus at Lakehead University due, in part, to our geographical locations. A number of our researchers are involved in promoting the sustainability and preservation of our regional ecologies. Respect for the land and the environment is particularly important for Indigenous communities where the land is closely connected to culture, spirit, language, and identities. Lakehead University's Strategic Plan and Academic Plan affirm our commitment to sustainability, which has emerged as a dynamic area of research. Research that supports resource discovery and methods of extraction (with a focus on reducing the environmental impact of resource extraction) and value optimization has been a long-standing strength at the University and is vital to our regional economies.

Proposal for Addressing Issue of Gender/Equity Representation in Canada Research Chairs Nominations and Monitoring Plan

Since its inception Lakehead University has embedded equitable, diverse and inclusive principles in many of its policies, processes and practices. In 2014, Lakehead University was recognized by the Canada Research Chairs (CRC) program as the first small university for having exemplary recruitment, nomination and/or appointment practices that promote equity and diversity within the CRC program. We hold the recognition in high regard and remain committed to fostering a campus climate that values equity, diversity and inclusion. Lakehead University's CRC equity, diversity and inclusion Action Plan 2019 set out a number of strategies **that resulted in our ability to meet** all of our CRC equity targets, including for women by the December 2019 deadline. Furthermore, Lakehead is committed to ensuring that we continue to embed EDI best practices throughout the institution in order to fulfill the commitments outlined in the CRC [2019 Addendum to the 2006 Canadian Human Rights Settlement Agreement](#).

The CRC EDI Plan includes a monitoring plan to ensure the Plan's objectives are met or new strategies are put in place to mitigate areas that need improvement. The Vice-President Research and Innovation, and the Provost and Vice-President Academic is responsible for monitoring and reporting on progress. Self-identification surveys have been implemented at the institutional level for all employees. In addition, we have implemented Self-Identification Surveys for CRC Searches at the application stages to ensure diversity considerations are met throughout the process. Furthermore, the CRC EDI Advisory Committee meets annually with the Office of Research Services, Canada Research Chairs and the Office of Human Rights to review progress in meeting the CRC EDI Action Plan Objectives, as well as to recommend to the Vice-President Research and Innovation and the Provost any corrective measures and new directions if necessary. The CRC EDI Action Plan Annual Progress Report is shared with Lakehead University's Executive Team Working Group, the CRC EDI Advisory Committee and the President's EDI Task Force.

Distribution of Canada Research Chairs and CFI Investments

Canada Research Chairs Distribution

The Canada Research Chairs Program provides major investments in research and scholarship at Lakehead University. Lakehead is committed to a strategy of recruiting world-class Canada Research Chairs external to the University as well as retain the best and brightest researchers that are currently at the University. Chairs will be allocated to areas of strategic research importance to the University and in support of high quality graduate programs. Canada Research Chairs will be used to strengthen and/or to build specific priority research areas within the University. Canada Research Chairs and selection of CFI JELF and CFI Innovation Fund proposals will be allocated in a strategic manner across faculties; faculties and research centres will be asked to respond to open calls for proposals that fit the research priority areas identified within Lakehead's Research Plan.

Strategic Priority Area	CRC Title	Tier 1 or 2
Current:		
Cultures, Societies, and Social Justice	▶ Environmental Education (Dr. David A. Greenwood, Faculty of Education)	SSHRC T2
	▶ Culture, Media and Social Justice (Dr. Max Haiven, Department of English)	SSHRC T2
	▶ Sustainable Food Systems (Dr. Charles Levkoe, Department of Health Sciences)	SSHRC T2
	▶ Arts Integrated Studies (Dr. Pauline Sameshima, Faculty of Education)	SSHRC T2
	▶ Human Origins (Dr. Matthew W. Tocheri, Department of Anthropology)	SSHRC T2
First Nations, Métis, and Inuit Research	▶ Indigenous Mental Health and Addiction (Dr. Christopher Mushquash, Department of Psychology)	CIHR T2
Health and Well-Being	▶ Physics of Radiation Medical Imaging (Dr. Alla Reznik, Department of Physics and Thunder Bay Regional Research Institute)	NSERC T1
Informatics, New Materials and Technologies	▶ Green Chemicals and Processes (Dr. Pedram Fatehi, Department of Chemical Engineering)	NSERC T2
	▶ Low-dimensional Nanomaterials (Dr. Maryam Ebrahimi, Department of Chemistry)	NSERC T2
	▶ Bioenergy and Biorefining Processes (Dr. Sudip Rakshit, Department of Chemical Engineering and Lakehead University Biorefining Research Institute)	NSERC T1
Sustainability, Resources, and the Environment	▶ Freshwater Ecology and Fisheries (Dr. Michael D. Rennie, Department of Biology)	NSERC T2
Submitted Nominations 2019:		
Health and Well-Being	▶ Submitted New Nomination in December 2019 for a Sept 2020 start date	SSHRC T2

Development of These Research Areas by the University

The Priority Areas of Research outlined in this Research Plan were developed by the University following a comprehensive consultation and planning process, that was led by the Senate Research Committee and the Vice-President Research and Innovation. These priority areas will be used to guide decisions relating to CRC allocations, CFI JELF allocations, the establishment of research centres and the development of new graduate programs. For more information, please refer to the detailed version of the [2019-2024 Lakehead University Research Plan](#).

ASSESSING SUCCESS IN MEETING RESEARCH PLAN OBJECTIVES

In order to assess if our Research Plan objectives have been met, research success will be evaluated based on nationally acknowledged common criteria (i.e., increase in external research funding; increase in peer-reviewed publications; increase in number of research partnerships; increase in commercialization activities; increase in scholarly prizes; and increase in number of graduate programs, graduate students and postdoctoral fellows, etc.). At the same time, we will attempt to establish additional indicators that respect discipline specificity and varying types of scholarly output.

PLANNED INTER-INSTITUTIONAL AND INTER-SECTORAL COLLABORATIONS

Thunder Bay Regional Health Research Institute (TBRHRI) and Lakehead University have a signed Collaboration Health Research Partnership agreement that provides our CRCs with access to hospital facilities. In addition, TBRHRI provides laboratory space to our NSERC Tier 1 CRC in Medical Imaging. Our Northern Ontario School of Medicine is also eligible to participate in the CRC program through an affiliation agreement.

PLANNING AND APPROVAL PROCESS

The 2019-2024 Research Plan was developed by the Research Planning Committee, co-chaired by the Vice-President, Research and Innovation and Chair of the Senate Research Committee. The Research Planning Committee was formed in October 2017 with representation from faculty members across disciplines, the Faculty of Graduate Studies, the Office of Research Services, the Office of Institutional Planning & Analysis, external partners, and graduate students. Several of these members were also members of Lakehead University's Strategic Planning Committee and/or Academic Planning Committee to ensure strategic alignment among these institutional plans. In summer 2018, faculty members were invited to complete a survey to provide input into the 2019-2024 Research Plan.

The survey results informed the development of a draft Research Plan, which was then shared with the university community for further input through a series of consultation sessions that included all faculties, directors of research centres and institutes, the Library, the Northern Ontario School of Medicine, the Board of Governors, the Ogimaawin Aboriginal Governance Council, the President's Advisory Council on Economic Development for Simcoe County, Senate committees, and faculty members at Lakehead Orillia and Thunder Bay. The feedback was incorporated into a revised draft that was posted online for additional input before being endorsed by the Senate Research Committee approved by Senate in the spring of 2019.