

Strategic Research Plan 2019-2023

Preamble

Laurentian University, located on the traditional territory of the Atikameksheng Anishnaabek, which is within the Robinson-Huron Treaty territory, is the principal research and graduate student training centre in Northeastern Ontario. In English and in French, with increased awareness of the various Indigenous ways of knowing, Laurentian creates new knowledge and prepares leaders who bring innovative and intelligent solutions to local and global issues. In 2017 and 2018, Laurentian was named Canada's number one undergraduate university in total sponsored research income¹, with considerable growth in research activity: strengthening external linkages, enhancing community relationships and expanding global reach. Our research and innovation activities are catalyzed within Northeastern Ontario, reflecting our unique geographic, cultural and demographic circumstances.

¹ According to Research Infosource.

Vision

To be a leader and partner for research projects and innovative solutions that are regionally, nationally and globally significant.

Mission Statement

Create and enable opportunities for research excellence by supporting researchers as they endeavour to understand the world, motivated by curiosity, discovery and need.

Mentor and train tomorrow's research leaders who will make strong contributions in their fields.

Be responsive to community and societal challenges and collaborate to make research accessible and connected with stakeholders.

Values

As a research community, we value:

- **research integrity**, by fostering an environment that promotes responsible conduct by embracing standards of excellence, trustworthiness, and ethical practices
- **community impact**, by engaging communities in a purposeful, responsible and relevant manner to achieve positive outcomes

- **excellence and creativity**, in fundamental and applied research and [research-creation](#)
- **interdisciplinarity**, by conducting research across boundaries and fostering collaborations
- **social change and justice**, by producing knowledge that will benefit society in a meaningful way
- **knowledge mobilization, translation and transfer**, by supporting research that helps shape our curriculums, policies and practices, and which engages those within and beyond the academic setting
- **mnaddendmiwin (respect), inclusiveness and equity**, by recognizing Indigenous knowledge and that diversity increases the impact of research and innovation
- **training and mentoring**, by teaching through research and providing opportunities for undergraduate and graduate students to actively participate in research activities at Laurentian
- **partnerships and relationships**, with industrial, community, private, public and not-for-profit partners, as a vital part of our research ecosystem

Areas of Strength

Materials, Minerals, Matter and Energy

- **Fundamental Subatomic Physics:** Sudbury is a global location of choice for deep underground research and Laurentian, through its partnership with SNOLAB, is pushing the boundaries of basic research to increase fundamental knowledge and to find solutions in the areas of neutrinos and dark matter, where some of the techniques developed can be applied successfully in other fields.
- **Mineral Exploration:** cutting-edge fundamental and applied research, using multidisciplinary and multiscale approaches across the full spectrum of the geosciences to advance our understanding of the formation and space-time distribution of the mineral resources needed by an evolving society.
- **Mineral Extraction and Processing:** research that advances and innovates in mineral extraction and processing through the applied sciences of mining technology, methods and design, and examines economic, labour, health, and safety issues, in partnership with industry, government and Indigenous communities.
- **New Materials:** integrative research to develop new materials and cutting-edge technologies for advanced astroparticle physics experiments, biomedical and industrial applications and environmental remediation.

Environment

- **Impacted Northern Landscapes:** a globally recognized leader in research to develop innovative remediation and reclamation strategies and solutions in industrially-impacted landscapes, including finding new values in mining environments through innovative biomining, bioprospecting, and carbon capture technologies.

- **Biodiversity and Conservation:** research that addresses stressed aquatic ecosystems, species-at-risk, and the effects of human stressors on wildlife, including the impacts of climate change and resource management on the terrestrial and aquatic communities and their environments.
- **Built Environments:** design-build, materials research and research-creation methods to find built solutions for livable environments for northern climates and climate change adaptation.

Health, Health Services and Well-Being

- **Health and Safety:** innovation and discovery to solve relevant and critical problems and eliminate occupational injury and disease in the workplace.
- **Rural and Northern Health:** research to improve health determinants, services and access to care for rural and northern communities, with a particular focus on promoting health equity of northern and rural residents and enhancing our understanding of the healthcare system.
- **Healthy Life Trajectories:** research, intervention, and programming that promotes and enhances mental, emotional, physical, social and community wellness at all stages of life and that recognizes intersectionality
- **Biomedical and Genomic Research:** basic and applied research into the molecular and genomic basis of biological complexity and disease, including ethical issues.

Histories, Identities, Cultures and Languages

- **Indigenous and Ally-Led Community-Centred Research:** research that respects Indigenous worldviews and Indigenous communities' voices, that benefits Indigenous peoples and supports and promotes Indigenous peoples as researchers.
- **La francophonie in Ontario and Canada:** research, art and creative-based practices, education and outreach to understand the diverse realities, cultures and dynamics of Francophone communities in Ontario and across Canada.
- **Realities and Challenges of Northern Ontario:** research that addresses the historical, political, economic, environmental, industrial and commercial specificities of this region.

Strategic Directions, Objectives and Actions

We will strengthen research collaborations.

- I. Our objective is to help researchers forge national and international collaborations to increase funding, visibility and excellence of research and innovation at Laurentian University. To achieve this, we will:
 - a) increase support for existing and new Research Centres and Institutes that align with Laurentian University's emerging and existing areas of strength.
 - b) renew existing, and establish new, Research Chair positions in alignment with the areas of strength identified in this plan.

create and maintain a searchable, useable and publicly available researcher database.
establish a dynamic environment to promote and develop a culture of innovation through engagement with industry, funding agencies and the broader Sudbury community.

II. Our objective is to recognize and strengthen collaborative relationships to support and undertake interdisciplinary research. To achieve this, we will:

- a) work with Indigenous scholars to facilitate research with Indigenous communities.
- b) enhance partnerships with Health Sciences North, Health Sciences North Research Institute, the Northern Ontario School of Medicine, Collège Boréal and Cambrian College, and develop new formalized partnerships with other research entities to facilitate collaborative research.
- c) provide workshops, resources and tools to help researchers develop collaborative capacities.

We will foster student-driven research and innovation.

III. Our objective is to expand research-related opportunities for undergraduate students. To achieve this, we will:

- a) expand research-related experiential learning and work-study employment opportunities for undergraduate students.
- b) enhance support for undergraduate student research and innovation awards.

IV. Our objective is to increase recruitment of, and enhance training and mentoring opportunities for, graduate students. To achieve this, we will:

- a) improve the competitiveness of admission offers for domestic and international graduate students and support faculty in attracting and retaining graduate students.
- b) create additional designated research space that encourages collaboration and exchange of ideas for graduate students to ensure optimal learning environments.

V. Our objective is to promote research by students - undergraduate and graduate level - internally and externally. To achieve this, we will:

- a) identify and highlight student-driven research and innovation success stories from all disciplines.
- b) integrate student participation during University organized and endorsed research and innovation events.

We will recognize research excellence.

VI. Our objective is to increase the visibility and broad awareness of research at Laurentian University. To achieve this, we will:

- a) increase media outreach and reporting on research at Laurentian University locally, nationally and internationally.

- b) create a comprehensive communication plan to better promote Laurentian University research.
- c) recognize outreach activities that expand broad understanding of the necessity and value of fundamental and applied research and research-creation.

VII. Our objective is to promote diversity and excellence, in research areas and output. To achieve this, we will:

- a) improve our publication impact ranking as reported by Research Infosource.
- b) expand internal recognition of research excellence with new awards and distinctions.

We will improve research processes and methods.

VIII. Our objective is to strive for excellence and efficiency in all areas of Research Administration. To achieve this, we will:

- a) streamline post-award processes in collaboration with the Office of Research Services, Financial Services, Purchasing, Information Technology and Human Resources.
- b) promote sharing of research space and resources to cultivate greater efficiency and sustainability.
- c) identify the infrastructure, tools and software needs of our researchers, and leverage existing expertise by creating a Research Asset Map for the university.

IX. Our objective is to assist researchers in identifying and accessing diverse sources of funding, and diffuse and promote available resources to support their research programs. To achieve this, we will:

- a) diversify sources of funding for research programs in collaboration with Laurentian University's Development Office.
- b) enhance awareness of, and linkages with, various types of provincial, national and international grants and funding opportunities.

X. Our objective is to promote and implement open access to, and ethical stewardship of, all forms of research data, in compliance with Tri-Agency policies. To achieve this, we will:

- a) develop an institutional research data management policy, and also support the creation of individual data management plans.
- b) support Research Data Management across all disciplines, and the leveraging of all available institutional resources.

Allocation of Canada Research Chairs (CRC)

Over the next five years, Laurentian University expects to make at least seven Canada Research Chair appointments at the Tier 2 level. Areas of research to be supported by CRCs are proposed internally by researchers. The selection of areas of research to be supported will be guided by their fit with the areas of research strength, existing and emerging, identified in this Strategic Research Plan.