**DRAFT – Research Plan, 2018-2023**

**Lakehead University**

**For Consultation**

Lakehead University’s Research Plan, 2018-2023 has three sections: Principles, Priorities, and Initiatives.

**Principles**

Lakehead University has identified three principles that capture the underlying beliefs and values for research at Lakehead University.

**Equity, Diversity, and Inclusion**

Lakehead University is committed to providing a research and innovation environment that ensures, understands, and celebrates equity, diversity, and inclusion of all members from the university, including equity-seeking groups.

**Ethical Conduct of Research and Processes**

Lakehead University is dedicated to educating and supporting researchers and their trainees to uphold the highest standards in the ethical conduct of research.

**Research Excellence**

Excellence is the foundational principle of the pursuit of knowledge and research at Lakehead University. Lakehead University values, supports, promotes, and celebrates all contributions to research (including basic and applied), creative activities and outputs, and innovation.

**Research Priorities**

While it is recognized that all research and scholarship being carried out at Lakehead University enhances our reputation, the institution recognizes that it must focus its resources towards building depth in areas of high research activity while continuing to expand research and other scholarly and creative activities across disciplines. The following criteria were developed for identifying a research priority:

1. Cluster of researchers making significant contributions in the area
2. Measureable level of significant external funding and/or research contributions in the research area
3. Graduate programs in the research area
4. Benefits to the region and wider communities in terms of social and economic development
5. Identifiable local, regional, national, and/or global partnerships
6. Research area represents emerging strength
7. Human and infrastructure capacity (e.g. specialized labs, infrastructure, Research Chairs) in the area
8. Senate-approved Research Centres or Institutes in the area
9. Undergraduate courses in the area that provide opportunities for students to be involved in research

In the final Research Plan, each priority area will include 3-4 examples of current research activity, a list of related Research Centres, and a list of relevant undergraduate and graduate programs. The following five research priorities have been identified (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 aims to contribute to social justice, which refers to the belief that the world should be organized in ways that allow for and promote equality, fairness, dignity, and solidarity between community members and across societies and cultures. Proponents of social justice work towards addressing inequalities based on differences such as income, race, gender, ability, and sexual orientation. These inequalities can include restricted access to health care, education, suitable housing, legal services, resources including healthy food and clean water, freedom of thought, political liberty, and basic human rights. Social justice is achieved when all members of society flourish and when all people are valued and cared for, feel a sense of dignity in their everyday life, and can participate in their worlds as empowered social agents. A number of Lakehead University’s research centres and research chairs are enhancing research related to the area of cultures, societies and social justice.

**The Environment, Resources, and Sustainability**

Interdisciplinary research with application to the environment, resources, and sustainability has emerged as an obvious strength for Lakehead University. The Thunder Bay campus is situated in the Boreal forest, one of the largest ecosystems on earth, and in the Lake Superior watershed; the Orillia campus is situated in Southern Ontario where different land uses abound (e.g., agriculture, housing, recreation, industry). For both regions, an important challenge is to maximize the many opportunities the land affords while reconciling various conflicting activities and preventing environmental degradation. Hence, research to maximize the enjoyment derived from the environment while supporting resource discovery, extraction and sustainability, and environmental health, is vital.

Sustainability has emerged as an important focus in research at Lakehead University. Sustainability is more than just the sustainability of the environment. Our Sustainability Action Plan, 2018-2023 defines sustainability in a pluralistic and inclusive way, encompassing human and ecological health, social justice and equity, Indigenous rights, secure livelihoods, workplace wellbeing, and leadership for vibrant and resilient communities.

**First Nations, Métis and Inuit Research**

Lakehead University recognizes the importance of prioritizing community-based research with Indigenous community research partners. The focus on Indigenous issues and Indigenous people (students, researchers, community members) in our academic and research 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 (TRC). The impact of Indigenous research focused on community needs in areas ranging from the arts to health, education, science, land management and culture, is vital and far-reaching. The revitalization of Indigenous languages, culture, and self-governance continue to be strengthened by community-based research efforts.

**Health Research Across the Life Span**

Researchers in this area aim at making a concrete difference in the health of our communities. Research covers both the age and health continuum. The research conducted also has a focus on Indigenous and Northern/rural issues, calling attention to the fact that Northwestern Ontario offers considerable challenges to the maintenance of good health. Faculty members and trainees from various departments and faculties of Lakehead University are involved in health-related research. Areas of focus, among many, include aging, addictions and mental health, child and youth health, maternal health, occupational health and safety, health informatics, medical imaging, and food security. While health research is already vibrant at Lakehead University, its potential for growth and for the development of fruitful partnerships, both within academe and with government and private partners, is considerable, and is reflected by on-going development of graduate and undergraduate programs. Through the activities of the University, researchers, and their partners, health research will continue to grow at Lakehead University, and will provide tangible societal benefits for the region and beyond.

**New Technologies, Processes, and Informatics**

Integrated hardware, software, and communication links are essential for modern society and are particularly important for Northern Ontario’s economy and environment. The safety, efficiency and reliability of critical municipal and industrial infrastructure, such as paper mills, mineral processing facilities, electrical power stations, and renewable energy installations are being significantly enhanced through the application of advanced technologies. Smart sensors, adaptive control, health-condition monitoring, predictive maintenance and process optimization lower costs and increase safety and productivity. Novel processes and products are lowering operating costs and enhancing margins to make regional industries more competitive. Information and communications technology, control systems, along with advanced computing technologies, enhanced medical imaging technologies, mobile computing for learning and health-related applications, and robotics are rapidly transforming education, work and play. Similarly, rapid advances in environmental biotechnology, biomedical and molecular biotechnology, as well as in material science, and polymer physics, biophysics, and clean water technologies are significantly impacting Northern Ontario and the world. Integrating biotechnology research with advances in material science is crucial to the social, economic and environmental sustainability of our communities, with significant impacts for health, education, and global competitiveness.

**Research Initiatives**

A research initiative is a university-wide project or program to enhance the state of research and innovation capacity at Lakehead University. These will include identifiable actions and outcomes that can be measured and evaluated. The following five research initiatives have been developed.

**Enhancing Research Opportunities for Students and Postdoctoral Fellows**

Many opportunities exist at Lakehead University for students to become involved in research. Undergraduate students have the opportunity to present their work at the Lakehead University Undergraduate Student Research Conference held annually as part of Research and Innovation Week. *The Post:  Lakehead University’s Undergraduate Journal* provides an opportunity for undergraduate students in the social sciences and humanities to publish their work in an interdisciplinary professional journal. The Office of Research Services, through our Mitacs program, provides all Lakehead students the opportunity to spend 12 – 24 weeks abroad pursuing a research project.  Many students have had the opportunity to participate in exciting, cutting-edge research projects at Lakehead that have had a positive impact on the wider community through applied and community-based research. Over 50% of external research funding supports the training of highly qualified personnel. Over 30 postdoctoral fellows annually have benefitted from advanced training opportunities with Lakehead faculty.

*Where do we want to be in five years?*

*Lakehead University will increase research opportunities for students over the next five years. We will be recognized as a university that values experiential learning and provides boundless opportunities for undergraduate and graduate students to engage in research opportunities here in Canada and in other areas of the world. Lakehead University will also be internationally known as a destination of choice for students from abroad wanting to work with faculty at Lakehead who are at the forefront of research. Our researchers will embrace the opportunity to bring their own research into the classroom to enrich the learning environment and many of Lakehead’s courses will provide students the opportunity to develop their own research or participate in ongoing research projects. Students who have an opportunity to engage in research benefit in the following ways: 1) enhances student learning through mentoring relationships with faculty; 2) increases retention and graduation rates in academic programs; 3) inspires undergraduate students to enrol in graduate education; 4) develops analytical skills and job readiness skills for future education and careers; 5) develops critical thinking, creativity, problem solving, and an understanding of research methodology; and 5) promotes an innovation-oriented culture.*

Examples of Strategies:

* Create a new Undergraduate Research Opportunities Fund (UROF) modeled after the NSERC Undergraduate Student Research Awards (USRA) program to create experiential learning opportunities that will lead to increased graduate student enrolment at Lakehead
* Support expansion of community-service learning opportunities and undergraduate research opportunities within research projects and the curriculum
* Provide opportunities for undergraduate and graduate students to disseminate research results
* Develop professional development programs for graduate students by expanding the Certificate in Teaching and Learning to include research
* Offer research workshops through Lakehead University Student Union’s Undergraduate Research Student Club (Digging Deeper)
* Support the undergraduate and graduate student conferences as part of Research and Innovation Week
* Explore development of funding opportunities to support student attendance at scholarly conferences
* Increase research internship opportunities for students through external funding (e.g. Mitacs, NOHFC, FedNor, FedDev, Venture for Canada)
* Establish three Lakehead University Postdoctoral Fellowships (one CIHR, NSERC, SSHRC)

**Promoting Research Excellence**

Lakehead University recognizes the research excellence and output of its faculty and students. One way Lakehead University celebrates research excellence is through internal awards. The Distinguished Researcher Award is the highest honour conferred by Lakehead University for research and scholarly activity. This award recognizes a full career of internationally recognized intellectual contributions. The Contributions to Research Awards recognize outstanding research activity by Lakehead University faculty. The Lakehead University Research Chairs (LURCs) program recognizes high quality research, scholarly and creative achievement by providing a two-year research grant to support an individual’s program of research. This program is a key element in retaining outstanding research talent at Lakehead University.

Research excellence is promoted throughout the year, but especially during our annual Research & Innovation Week. A number of awards are given out during this week, including the Faculty Innovation, Building Research Capacity, and Indigenous Partnership Research awards. Achievements in graduate student research are celebrated through the Student Innovation, Three-Minute Thesis, and Graduate Studies Research Excellence awards which encourage high quality presentations and publications by graduate students.

The contributions of faculty and students are also promoted locally, nationally, and internationally. Faculty members are encouraged to apply for local recognition of their research through programs such as the RBC Innovation Awards. The Associate Vice-President, Research and Graduate Studies takes a proactive approach to submit worthy candidates for a number of external awards such as the Killam Prize and membership in the Royal Society of Canada. Undergraduate student research is also supported through, for example, the sponsorship of an undergraduate student to present his/her research at the Undergraduate Network for Research in the Humanities (UNRH).

*Where do we want to be in five years?*

*Lakehead University will raise the local and global profile of our research activity and expertise. We will increase the level of support in memberships and societies, such as Research Canada and the Royal Society of Canada, which allow Lakehead faculty opportunities for external nominations and awards. A key goal is to increase the number of successful applications submitted for external research awards. A faculty-based research chair program will be developed that recognizes research excellence across all faculties. Acknowledging and rewarding research excellence is critical for retaining leading researchers who have big ideas that make the world a better place.*

Examples of Strategies:

* Increase the number of externally-funded research chairs
* Collaborate with the Faculty Deans to develop a faculty-based research chair program that recognizes excellence within each faculty through grants and time release
* Collaborate with Graduate Studies to develop a program that highlights graduate student excellence and research stories
* Publish print and online communications that promote research success stories, including an annual Research Excellence report and Research & Innovation Week viewbook
* Establish new awards for faculty and students (e.g. Sustainability, International Research Partnership Awards, Service to Research, Excellence in Graduate Student Supervision), and actively seek out donations and sponsorships for such awards
* Support and encourage internal faculty members to build up their research profiles and dossiers, so they are strong applicants for national and international external awards (e.g. Royal Society of Canada, Killam Prize)
* Encourage and reward the participation of faculty members in external review panels
* Hold a Professional Development workshop series to assist faculty with a variety of research, funding, knowledge mobilization, and innovation topics
* Develop a database of research experts at Lakehead University

**Community-Engaged Research (CER)**

Lakehead University has a long history and reputation of excellence in community engagement regionally, nationally and internationally. Re$earch Infosource ranked Lakehead University number one University of the Year for *Not-for-Profit Research Partnerships, 2013-2017.* The areas of focus for community-engaged research at Lakehead University are broad and far reaching, from understanding food sovereignty in northern communities, to working with local schools to address youth at risk, to mapping community natural, cultural and sustainable tourism resources, to making our community more age friendly. As exemplified by extensive engagement with Indigenous communities, Lakehead research is well positioned to significantly contribute to the Truth and Reconciliation Commission Calls to Action through community-engaged research.

*Where do we want to be in five years?*

*Lakehead University is committed to the social, cultural and economic development of its many partnering communities, and is particularly engaged with Indigenous communities. Through community-engaged research, Lakehead University will bring together community and campus research skills and resources in order to advance community-identified research goals that will lead to a more sustainable, just and healthy society. We will respect diverse forms of knowledge that are based around the principles of social responsibility, respect, reciprocity, open access, knowledge creation, and social and ecological justice.  Our students will graduate having had increased opportunities to participate in experiential and community-service learning opportunities through community-engaged research initiatives.*

Examples of Strategies:

* Establish a Community-Engaged Research Advisory Committee to the VPRI to identify strategies that will promote the growth of, and support of, CER
* Create a new Community-Engaged Research Award to recognize and reward community-engaged research
* Explore institutional models to coordinate, promote and support expansion of CER, knowledge mobilization and social innovation initiatives (i.e., Office of Community-Engaged Research, research shops, living labs, etc.)
* Support joint initiatives with the City of Thunder Bay through the recently signed Memorandum of Understanding and pursue a similar initiative with the City of Orillia and possibly the City of Barrie
* Promote Community-Service Learning opportunities through research initiatives
* Explore ways of recognizing and promoting CER
* Implement indigenous research guidelines for all research that supports the Truth and Reconciliation Commission Calls to Action

**Internationalization of Research**

Researchers at Lakehead University are proud to be part of a global network of collaborators. We currently have over 100 Memorandums of Understanding and Agreements with international institutions from approximately 30 countries to support research collaborations and student exchanges. Funding for international research projects is available through opportunities such as the Mitacs Globalink program.

*Where do we want to be in five years?*

*Lakehead University will increase its international research profile over the next five years to be a destination of choice for students from all over the world, with particular emphasis on graduate students and postdoctoral fellows. Faculty and graduate students will have opportunities to collaborate with international partners through enhanced research mobility and access to international funding opportunities. The number of multidisciplinary and multi-institutional research initiatives and joint funding applications submitted will increase.*

*Lakehead University is committed to enhancing our international research reputation and understanding of global challenges through increased engagement with international partners. This will be achieved by: 1) developing and expanding international partnerships; 2) supporting the involvement of Lakehead researchers and scholars in international research networks and projects; 3) facilitating and expanding access to international funding opportunities; and 4) enhancing collaborative training opportunities at the graduate level. Lakehead University will raise the global profile of our research activity and expertise by developing informed research strategies and opportunities with our international partners.*

Examples of Strategies:

* Hire an International Research Facilitator in the Office of Research Services who is responsible for seeking opportunities to expand international research partnerships and collaborations for Lakehead faculty and graduate students
* Establish International Research Partnership Awards to provide seed grants for faculty members to set up long-term research collaborations with international partners
* Facilitate and support research collaborations between Canada and Latin America through the Canada and Latin America Research & Exchange Opportunities (CALAREO) Consortium
* Encourage partnerships that result in national and international grants to enhance research collaborations and training of graduate and undergraduate students
* Lead the establishment of an International Research Centre. Such a centre could involve engagement with Indigenous communities, resource extraction, biorefining, large lake research, etc.
* Strengthen academic and scholarly partnerships with the University of Minnesota Duluth

**Supporting Innovation**

Innovation is value from knowledge. Researchers generate knowledge in many ways, including discovery-based research, applied research, and teaching. Researchers share their knowledge with society through innovation. Innovation can have commercial value through the development of start-up companies, licenses, or patents. Innovation can also have social or cultural value when the products of research enhance people’s lives and wellbeing.

By disseminating knowledge and working with industry or community partners, researchers at Lakehead significantly impact our surrounding communities. The University offers a range of extension services through specialized laboratories, including Lakehead University’s Centre for Analytical Services (LUCAS). The Faculty of Natural Resources Management offers external services to aid the forestry industry.  Additionally, our research expertise has been accessed by environmental companies through the Environmental Laboratory and Aquatic Toxicology Research Centre and the agricultural community through the Lakehead University Agricultural Research Station. Researchers at Lakehead Orillia are engaged in research projects with external partners through Interdisciplinary and Sustainability Sciences.

*Where do we want to be in five years?*

*Lakehead University will be a leader in innovation and commercialization in Northwestern Ontario and Simcoe County. Ingenuity, Lakehead’s student business incubator space, will foster a thriving community of entrepreneurial thinkers, resulting in new businesses and jobs for people in our region. Partnerships with industries in support of research and training will increase. Lakehead University will be known for facilitating social entrepreneurship initiatives that benefit communities. Lakehead University will be an active member in innovation clusters that drive economic growth. We will partner with Indigenous communities to support culturally appropriate innovation and economic development. We will work with local partners to help develop economic opportunities that enable international students to remain in our communities after graduation.*

*Students at Lakehead University are the next generation of entrepreneurs and innovators. Through Ingenuity, Lakehead’s first student business incubator, students will have the infrastructure and resources they need to take their ideas from ideation to innovation. Lakehead University looks to the future by supporting innovation and economic development.*

Examples of Strategies:

* Work with local economic development corporations in Thunder Bay, Orillia, and Barrie to seek out partnerships that will increase economic activity in the surrounding regions
* Establish a Patent Adjudication Committee
* Establish a Patent Dissemination Committee to explore various markets for patent use, including licensing opportunities
* Explore with community partners a collaborative Start-Up fund to assist new graduates with start-up/seed money to launch their business ideas
* Actively partner in innovation clusters such as the Pan-Northern Mining Research Alliance
* Work with college partners to develop programs that increase joint innovation initiatives, including social innovation
* Work with Indigenous economic development corporations, including the Nishnawbe Aski Development Fund, Canadian Council of Aboriginal Businesses, and others to develop innovation and economic opportunities for Indigenous learners and communities
* Explore with community partners the establishment of a Research Park at Lakehead University
* Creation of a regional entrepreneurial ecosystem to support and develop a network of resources available for student start-ups
* Design and launch *Ingenuity*'s accelerator program, which will launch businesses within 12-16 weeks
* Implement for-credit course programming that enables students to work on their business as part of their program
* Create an on-campus sustainable social enterprise that provides income and work for students and solutions to social issues
* Develop pathways for industries to access *Ingenuity* participants to provide feedback and business solutions to industry problems or pain points