Strategic Research Plan

2019-2024

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Nipissing University Research Plan 2019-2024

<u>TABLE OF CONTENTS</u>

1 PURPOSE AND PURVIEW

Research at Nipissing University

Nipissing University's Strategic Research Plan (SRP) is designed to catalogue present research strengths, identify areas for investment and reinvestment, and encourage future research directions. At the center of these efforts is recognition that Nipissing University is situated on the traditional territory of the Anishinabek peoples of Nipissing First Nation and within the lands protected by the Robinson Huron Treaty of 1850.

While our researchers have and will continue to achieve research success in many different ways, our research culture must also make a special commitment to highlight the relevance of regional Indigenous knowledge, history and perspectives in relation to the national and international environment. It is through this approach that a growing number of Nipissing researchers have been able to build upon regional community engagement and reciprocal relationships with Indigenous communities toward achieving research excellence.

Our approach to research is founded upon the values of inclusivity, equity and diversity directed by a culture of openness, fairness and tolerance. In turn, we strongly commit to the overarching idea that quality research is an outcome of sharing diverse ideas, experiences, perspectives, and different senses of place.

The Context of the Research Plan

The context of all research is more competitive than ever. Whether this means successful applications for limited funds and grants or disseminating research in reputable journals and with scholarly presses, this five-year plan is founded upon a fundamental commitment to support and encourage high quality research outcomes. Of course, no plan can fully anticipate the consistently shifting internal and external variables that influence these outcomes, including the changing complexion of university researchers and/or the dynamics of Tri-Agency priorities.

While the number of institutions and researchers competing for funding have increased significantly, many high profile funding programs have not seen corresponding increases, with others ending without replacement. So, on the one hand, there is a clear necessity to identify alternative sources of research funds, linking established and new researchers with less visible but still relevant programs. Yet, on the other hand, there are also new opportunities that have come with an increased focus on establishing larger scale inter-university research partnerships. This requires comprehensive knowledge of both new funding programs as well as relevant project development at potential partnering institutions. But, such nimbleness and depth requires a better understanding of existent and developing programs and projects among *our* researchers.

The world of publishing has also changed considerably over the last decade and continues to evolve. As a consequence, researchers have more opportunities to collaborate across disciplines and options for publishing are more diverse. With this proliferation, it has become increasingly important to recognize quality publication outlets that maintain rigorous peer review processes.

Nipissing University fully commits to encouraging a robust publication schedule among our researchers while not compromising individual or institutional reputation.

Altogether, this plan is designed to position Nipissing as a nimble and responsible research institution, identifying and preparing for new opportunities that take full advantage of existing resources and strategically investing new resources in recognition of the dynamic research environment. If successful, this plan will allow our researchers to better focus energy on their research toward making a contribution to the advancement of knowledge and the betterment of society.

2   RESEARCH MISSION

Nipissing University seeks to maintain and grow our leadership role in research areas relevant to the regional community that have national and global impact. Simultaneously, Nipissing continues to encourage and support groundbreaking research in other areas of strength.

- This mission will be achieved in part through our researchers working in our region with Indigenous and other partners in a way that not only allows us to make a difference in our community but influence discovery and dialogue on important issues around the world.

- The success of this mission depends not only on the researchers themselves but also on institutional support; not solely based on monetary assistance but also human resources at all levels. Continued investment in our research infrastructure is central to the fulfillment of our mission.

- This mission must also include our students; allowing them to participate in forward-looking discussion and debate as well as participate in real groundbreaking research projects, learning research skills that provide the foundation for the next generation of research excellence.

3   RESEARCH ACHIEVEMENT AT NIPISSING

These research themes represent a compilation of the achievements of our researchers. For example, they reflect the leading work of our Research Chairs including our 4 CRCs as well as our Chair of Indigenous Education. The work of our Tri-Agency grant holders is also described below. Relatedly, cutting edge research from our growing number of research labs and centres are also highlighted. In addition to applied research Nipissing also prides itself in recognizing significant research contributions made by its faculties in propagating fundamental research across the disciplines.

Broadly, these themes include the more recent and ongoing publication and project success happening across the disciplines. So, what is set out below is not an exhaustive accounting of all research but rather an effort to give a sense of our unique research profile as it appears across the institution as a whole.

Still, notable accomplishments in our individual department should not go without mention. For example, the Fine Arts Department has produced award winning sculptures, paintings and drawings shown in galleries around the world. English Studies sustains research excellence in the areas of Canadian, British and American literature and culture.

Indigenous and Decolonial Research

In partnership with Indigenous peoples and groups, Nipissing researchers engage in a broad range of work using innovative methods and practices to better understand the deep history, culture and ideas of our region. For example, theoretically, settler accountability understood through the lens of decolonial and Indigenous scholarship participates in the larger effort at truth and reconciliation while practically, research on combatting human trafficking in Northeastern Ontario helps address fundamental challenges facing our communities.

With a new focus on community-based health promotion and Indigenous youth involvement in sport and physical activity, our researchers are understanding the impact on the lives of young people in the region. Researchers challenge current conceptualizations of health and colonized structures from a perspective centered on Indigenous knowledge systems. This work further extends to partnerships with Nipissing First Nation to better understand the impact of women's collective and individual experiences and to explore the dynamics of memory making and storytelling. Also partnering with Dokis First Nation, our researchers chronicle the intrinsic link between contemporary land-use decision-making, traditional storytelling, and histories of colonialism.

Environment & Natural Resources

Researchers at our university understand that complex environmental challenges at the local and global scale can best be examined through multiple perspectives, and integration of Indigenous knowledge systems, natural sciences, social sciences, and humanities.

Nipissing University is therefore striving to become a model for interdisciplinary collaboration and critical research on the environment across disciplines, highlighting long-standing partnerships with Indigenous communities, government agencies, private industry, and non-profit organizations.

Scholars at our university come from different disciplinary traditions, including geography, history, anthropology, Indigenous studies, business, education, English, gender studies, political science, classics, and religion. Environmental issues are examined through a myriad of ways, including remote sensing, isotope analysis, archival and museum research, dendroprovenancing, policy analysis, Indigenous methodologies, oral histories, and ethnographies. For example, monitoring of Lake Nipissing including its water quality and forest and fisheries management as well as an isotope survey of the French River are among the ways our researchers make a regional contribution with national and global impact.

Nipissing University is one of the first institutions in Canada to offer a broad interdisciplinary graduate MES/MESc program that integrates the geophysical sciences, natural sciences, Indigenous studies, and the humanities. We challenge the new generation of environmental graduate students to equip them to deal with the complex histories of colonialism, resource development, and social science as part of the skills and knowledge necessary to conduct environmental research.

Over the last ten years, our researchers have made significant contributions at the international, national, and regional level ranging from environmental and cultural impacts of resource development in northern and tropical regions, water policy research, environmental history, decolonial and Indigenous methodologies, watershed modelling, forest science, and environmental monitoring.

Nipissing University researchers are actively involved in exploring the effects of ecological patterns in the distribution, composition, and productivity of plant communities in the forest. The study of ecological patterns could serve as a valuable tool for forest resource management, particularly to support the sustainable development of new forestry products in Northern Ontario. The regeneration of declining tree species in Ontario is also a topic of strong research interest among our researchers.

Many of our researchers also study the geographies and histories of the "near north" as a site for natural resource exploitation and colonial settlement. From both a social scientific and humanities perspective, our researchers have explored how the conceptualization of nature in this region has had an enduring influence on the geopolitical imagination of science and trade networks.

The Human Condition

Faculty members and students at Nipissing University conduct research that has critical implications for the health and well-being of people in northern and rural communities, including Indigenous communities, in Canada and around the world. Such health-related

research spans a remarkable range of topics including eHealth, chronic disease prevention, nutritional interventions for at risk populations (e.g. Indigenous women), and physical activity promotion in cancer survivors and school-aged children. These researchers have developed strong collaborations with external partners such as the North Bay Parry Sound District Health Unit, Children's Hospital of Eastern Ontario, Northeast Cancer Centre-Health Sciences North, and school boards across the region and province.

In addition, a multidisciplinary, collaborative group of Nipissing University faculty and students from our School of Business, School of Physical Education, and Departments of psychology, sociology, biology and chemistry use a variety of research methods and techniques to explore the factors that give rise to individual differences in behaviour. These techniques include survey-based methods, group social interactions, pharmacological challenge studies, quantitative behavioural assessments, and brain imaging tools. This research has made substantial contributions to our understanding of important psychological, behavioural, social and demographic processes including aggression and intrasexual competition, social identity and mental imagery among athletes and consumers, social anxiety, social communication of chemical alarm cues, learned helplessness, life-course transition, and family formation. It has been applied to areas of innovation and change management as well as the consumer experience and decisions made in the sport and tourism contexts and public policy.

Efforts are also being made towards the development of novel therapeutic agents for the treatment/prevention of degenerative diseases such as cancer and cardiovascular and neurodegenerative diseases.

Conflict Resolution

Nipissing University prides itself on its diverse research in the area of conflict resolution. Spanning disciplines and subjects that include human rights, the history and politics of the women's movement as well as Indigenous justice and Aboriginal rights, our researchers have explored and critiqued a variety of approaches to mitigate conflict in local, national, and international settings.

Nipissing's long history as a centre for educational research has led to leading work on how to incorporate conflict resolution into local classroom and the provincial curriculum as well as university governance. Similarly, our nursing program continues to make a contribution to better practices in our hospitals and healthcare facilities across the province and country.

More recently, our researchers have developed expertise in the area of peace studies, including philosophical work on the concept of peace as well as new programming in the areas of international negotiations and alternative dispute resolution. There is a particular and growing interest in the relationship between collective and individual rights in relation to the development of new legal and political strategies to help marginalized people and groups.

Human rights researchers have also further weighed the impact of the Truth and Reconciliation Commission process and its place in comparison to similar global efforts.

Our research community has also engaged extensively with the local First Nations, developing multiyear research projects and disseminating knowledge in partnership with elders towards better local and national relations while identifying questions of Indigenous self-determination, sustainable communities, as well as the celebration of Indigenous knowledge and practices.

Consideration of environmental and bioethical rights is also at the fore of the struggle to overcome the influence of global warming and the introduction of new disruptive technologies. The historical impact of natural resource development by Canadian corporations at home and abroad is another important area of study. Relatedly, corporate responsibility, sustainable markets, and the need for ethical trade practices also has become a growing area of strength.

Inequality

Researchers at Nipissing University seek to explore, analyze, and critique the multiple sources and effects of inequality in Canadian and global society. Through the distinct lenses of philosophical, political, historical, sociological, and scientific approaches, Nipissing researchers have revealed important and surprising links between geographic place and education access, gender and economic opportunity as well as poverty and human rights.

Across many disciplines, our researchers have dedicated themselves to understanding ways to overcome and remedy these inequities and many others through the development of new means of data collection, innovative policy tools, and theoretical methods. Structural inequality in our post-secondary education system, the historical origins of class, the definition of poverty, the complicated persistence of human trafficking and ongoing efforts to achieve reconciliation with Indigenous peoples are among the multiyear research projects and publications advanced and produced at Nipissing University.

Reflecting Canada's commitment to multiculturalism, our scholars have offered new ways to implement a diversity agenda in the classroom, the demographic and economic influence of new immigration policies, the tension between religion and secularity, and how music and art can celebrate cultural differences. Both the successes and challenges of multiculturalism have been brought to light through books, edited collections, articles and policy papers.

Along with contemplation and critique, we also seek real world solutions to problems associated with inequity, with a strong sense that our work can make a positive impact on our local environment as well as around the planet. Everything from measuring water quality, the effect of over-fishing, deforestation, and urbanization provide concrete means and methods to lessen negative human impacts on the natural world. From the Ottawa River watershed, to the rain forests of Central America, to the fish-markets on the banks of Zambezi River in southern Africa, Nipissing researchers have laid the foundation for making real change at home and abroad.

Information Technology and Mathematical Sciences

Nipissing University is internationally recognized for its topology research cluster. Members of the cluster study general and geometric topology, functional analysis, dimension theory, continuum theory and dynamical systems.

Other Nipissing faculty members are conducting internationally recognized research across a broad spectrum of IT-related and quantitative fields of inquiry. Research areas in computer science, computational physics, and other computational disciplines include nanophotonics with applications in nanotechnology and nanomedicine, artificial neural networks, computational geometry, cryptography, deep machine learning, graph theory, optimization, image recognition, neural networks, robotics, signal analysis, and role-based collaborative systems.

In our School of Business and Economics, there is research on the use and impact of IT in buyer-supplier relationships, as well as quantitative research on applied multivariate modeling. Nipissing's geographers focus on spatial data acquisition, analysis, and database management for urban and rural environments, using GIS, remote sensing, and spatial modeling, areas which also overlap with the second theme, above. Together with our topologists, this group puts Nipissing in a strong position to develop research excellence in spatial analysis and the study of large data sets.

4   STRATEGIC RESEARCH PLANNING OBJECTIVES

The Strategic Research Plan has been structured upon four main pillars: Identify, Encourage, Support and Oversee.

Along with defining the character of each pillar, the charts below provide a number of associated objectives and then, more specifically, strategies and/or policies that will be implemented over the time horizon of the plan. The effort has been to avoid platitudes and generalizations and focus on tangible opportunities to maintain and improve research success at Nipissing University.

While individual researchers will always be the most aware of and focused upon their own work, the overarching goal of this plan is to grow a research culture that engenders a high-quality and quantity of research success.

The Provost, the Dean of Graduate Studies and Research, and the Research Council, among other stakeholders and experts, will assist in the development and implementation of the strategies and policies listed below.

Pillar #1

IDENTIFY: The most basic component to any successful research institution is to have full knowledge of the character and kind of research occurring and emerging.

OBJECTIVES	STRATEGIES AND POLICIES	IMPLEMENTATION TIMELINE (1-5 Years)
Awareness of research expertise	• Working on an annual basis, compile a comprehensive list of areas of research expertise for individual researchers	Year 1
Understanding of publication success and other areas of scholarship and knowledge dissemination	• Working on an annual basis, utilize databases and submissions by individual researchers to accumulate and catalogue recent publications, scholarship and other form of knowledge dissemination	Year 1
Accounting for ongoing and developing research projects	• Develop a reporting mechanism to provide summaries of current research projects, whether funded or unfunded	Year 1
Recognizing collaborations	• Maintain an up-to-date list of individual and institutional research collaborations	Year 1
Review of research Labs, Centres and Institutes	• Under the current policy on labs, centres and institutes, provide a centralized and comprehensive account of current work and funding	Year 2
Assessing Research (Space/Equipment) Infrastructure	• Informed in part by the 2017/2018 space audit, develop a infrastructure accounting policy that provides comprehensive picture of current research infrastructure	Year 2
Evaluating link between research and classroom success	• Within the new Teaching Chair framework, pinpoint ways researchers integrate their research into the classroom	Year 3

Assessing funding success	• Develop a policy on non-Tri-Agency grant application and reporting toward a full accounting of funds awarded to our researchers	Year 2

Pillar #2

ENCOURAGE: **With full knowledge of the dynamic research profile of the institution, we must be focused on maintaining and growing current research success and developing areas of future success.**

OBJECTIVES	STRATEGIES AND POLICIES	IMPLEMENTATION TIMELINE (1-5 Years)
Awareness of external funding opportunities	• Develop a targeted individual researcher funding strategy that links researchers with funding programs and projects	Year 2
Review of internal funding programs	• Assess the success rate of our current internal funding programs in relation to later external funding achievements and recast programs if necessary	Year 2
Informing researchers of projects and collaborations	• Proactively notify faculty researchers of relevant work in their field	Year 1
Mentoring new faculty researchers	• Working with CRCs and the Assistant Dean, create a targeted or linked mentoring program that will give faculty the opportunity to work with established researchers to develop projects and grant applications • Integrate mentoring into the Teaching Chairs framework	Year 3
Communicate research success	• Work with communications and public relations to develop a strategy to comprehensively promote research success and expertise	Year 2

	• Provide mass and social media training to allow individual researchers to better promote their research success and expertise	
Celebrate research success	• Develop a targeted strategy for the Chancellor's Research Award that increases the monetary value but also the associated responsibilities of the holder (e.g. mentorship, research talk).	Year 2

Pillar #3

SUPPORT: The acquisition and distribution of resources is the most tangible component of research success. Composed of financial and human resources as well as related infrastructure, a healthy research culture requires proper targeting, transparency, consistency and creativity.

OBJECTIVES	STRATEGIES AND POLICIES	IMPLEMENTATION TIMELINE (1-5 Years)
Providing targeted internal research funding	• Establish a new program for research projects that engage with regional partners and communities, in line with the broader goals of the Strategic Plan	Year 4
Utilizing our Canada Research Chairs to support faculty, graduate, and undergraduate research	• Develop a CRC internal partnership program that will support relevant faculty, post-doctoral and student involvement in ongoing and emerging research projects • Develop an exit strategy and succession plan for CRC program	Year 3
Expanding and focusing Research Services	• Under the leadership of the Dean of Graduate Studies and Research, reinvestment in staff specifically targeted toward external research fund success	Year 4

Targeting Infrastructure Funds	• Informed in part by the 2017/2018 space audit, develop a research infrastructure funding strategy that addresses current and emerging needs • Develop a transparent internal application and granting process for CFI funds • Work with the Provost and the VP Finance to use fundraising to increase donations for research infrastructure projects	Years 1-5
Enhancing support for graduate student research	• Undertake a review of graduate student support with the Provost and the Faculty of Graduate Studies • Work with the Provost and VP Finance to use fundraising to increase donations for graduate research • Improve competitiveness in recruiting graduate students by enhancing financial packages and infrastructure dedicated to graduate research	Years 1-5
Stabilizing and Enhancing the Undergraduate Research Conference	• Develop a defined policy and steering committee for the undergraduate research conference • Review the funding requirements of the conference and provide consistent annual funding	Year 1

Pillar #4

OVERSEE: The intellectual and societal importance of university research demands that processes and outcomes must meet the highest of professional and ethical standards. Beyond a mere demand for compliance, a healthy research culture recognizes the link between individual and institutional reputation.

OBJECTIVES	STRATEGIES AND POLICIES	IMPLEMENTATION TIMELINE (1-5 Years)
Renewing the mandate of the Research Council	• In conjunction with Senate, review and recast the terms of reference of the Research Council	Year 2
Publishing high-quality, impactful work	• Work with the Executive Director, Library Services and the Scholarly Communications and Research Data Management Librarian to develop an education strategy on how to assess research impact (i.e., knowledge translation) • Work with the Provost and the Deans to develop education processes to ensure research publications meet the standard of peer-review	Years 1-3
Maintain high standards	• Review and articulate a broad policy statement on Responsible Conduct of Research	Year 1

5 ASPRIATIONAL GOALS

The implementation of the above objectives and corresponding policies and strategies will provide a foundation for future tangible research success. In part, this success might manifest in the following accomplishments:

- Nipissing University has a national reputation for excellence in Indigenous and interdisciplinary research across the disciplines. This could be achieved through scholarly publications, grants, and awards as well as media recognition.

- Nipissing University researchers will substantially increase Tri Agency Grant success.

- Nipissing University will be in a position to receive approval for a fifth Canada Research Chair.

- Nipissing University will be in a position to receive a larger Canadian Foundation for Innovation grant.

- Nipissing University will attract more visiting scholars, postdoctoral, graduate and undergraduate researchers.

6 CONCLUSION: MEASURING SUCCESS

In good part, implementation of this plan will be overseen by the Office of the Provost, the Office of the Dean of Research and Graduate Studies, and the Research Council. Reflecting the timeline column in the charts above, these groups will report progress on the constituent elements of this implementation through academic Deans and the academic Senate. New policies, for one, will be introduced and applied on an ongoing basis. Likewise, new internal grants and awards will be announced seeking applicants and nominations.

At appropriate intervals during the 5-year timeline, updates will be provided as we progress toward the broader aspirational goals mentioned just above.