

Algoma University Strategic Plan for Research (Long Version)

Preamble

In 2008, the Charter granting independent status to Algoma University (AU) was passed by the provincial legislature. As a new institution, AU has made remarkable progress in growing a culture of research and empowering faculty and student researchers with the resources to explore questions that span the sciences, social sciences, and humanities. The overarching goal of this Research Plan is to leverage our unique location in rural and remote Northern Ontario to generate multidisciplinary and innovative research of value to Canada and to global communities who experience similar challenges and opportunities. At Algoma, our historical and living connections to regional Anishinaabe people and peoples¹ and other Indigenous communities are foundational to all of our activities as we collectively seek to maximize our academic and research potential in the coming decades.

This Strategic Plan for Research was inspired by the legacy of the former Shingwauk Indian Residential School that forms the main building of the existing campus, and by the cultural and geographical history of a region that includes traditional lands of several First Nations communities. The University accomplishes this special mission in part through its partnership with Shingwauk Kinooamaage Gamig, an independent Anishinaabe post-secondary institution developed by the Shingwauk Education Trust.

The Shingwauk Education Trust is based on a vision of the Ojibway Chief Shingwauk, to create a "Teaching Wigwam" with an overall goal of providing culture-based education and research opportunities to students. With Algoma University, Shingwauk Kinooamaage Gamig offers courses in Anishinaabemowin (Ojibway language) and is developing a degree program in Anishinaabe Studies. Algoma University has several faculty members across numerous programs actively engaged in research related to Anishinaabe and Indigenous issues and contexts internationally (Research Cluster 1).

Recognizing that research with regard to Anishinaabe and Indigenous communities, cultures, and contexts has implications for all areas of scholarship, Algoma University made the strategic decision to identify Anishinaabe and Indigenous communities as a priority area for research. The University acknowledges a special responsibility in terms of supporting Anishinaabe communities in their self-determination initiatives, in creating meaningful opportunities for knowledge exchange, and for enhancing our collective understanding of different ways of being and knowing the world, whether from Western, Anishinaabe, Cree, Mohawk or any other Indigenous perspective.

¹ Anishinaabe being the Ojibway word for Aboriginal – that is, First Nations, Inuit, and Metis in Canada – and Indigenous people.

The above -mentioned priority is at the core of the first of the four research clusters identified in this strategic plan for research. The other three clusters, '**Cultures and Creativity**', '**Life and the Environment**', and '**Socio-economic Issues of Northern, Rural, and Remote Areas**' are linked to the core cluster of '**Anishinaabe and Indigenous communities**' and form part of the fabric of our regional heritage and landscape within Northern Ontario. The concept of 'northern, rural and remote' resonates with many other Canadian and circumboreal cultures that share a rich heritage embodied within indigenous peoples globally.

Although the charter of Algoma University currently states that we are an undergraduate teaching institution, without graduate level programming, researchers at AU have leveraged partnerships with other provincial post secondary institutions to create a system of shared supervision of graduate students who enroll elsewhere, but are co-supervised by faculty at AU. AU has no restrictions on postdoctoral fellows, and our research Chairs have engaged a number of Canadian and international postdocs to complement their research programs. Given our success in attracting research funding over the inaugural seven years since 2008, one goal of the institution is to pursue a graduate program for the future, while maintaining our firm commitment to training undergraduate students in research and critical thinking skills needed to secure high-paying jobs post graduation. We believe that our research record will make a compelling argument to revisit the issue of graduate studies within the next five to ten years.

Achievements

We celebrate the following achievements that serve as a barometer of our progress in research since 2008:

- i) Tri-Council Success:** AU has garnered 1.37M in Tri-Council funding over the past seven years. The majority of biology faculty are now NSERC funded, and AU acquired its first SSHRC Insight Development Grant in the Department of English in 2012, and its first CIHR Planning grant in 2013.

- ii) Canada Research Chairs:** In 2012, AU earned its first Tier 2 Canada Research Chair, and successfully nominated Dr. Pedro Antunes, as Chair in Terrestrial Invasive Species Biology. Most recently, in 2014, AU was awarded its first Tier 1 Chair and, as of 2015, we are preparing a nomination for this Chair position.

- iii) Capital Investment in Research Space and Equipment:** In addition to the above, AU successfully competed in the Knowledge Infrastructure Program (KIP) in 2009, and secured \$16M in funding for new capital infrastructure related to research. With additional funding from NOHFC and FedNOR, AU constructed its first on-campus teaching and research laboratories, along with an animal care facility, housed in the Essar Convergence Centre. This facility also hosts the Sault Ste. Marie Innovation Centre, an important academic and community business incubator and local Ontario Centres of Excellence service provider.

To outfit needed research facilities, AU has invested a total of circa \$1M in combined CFI-LOF funding, provincial ORF-RI matching funding and cash and in-kind contribution from AU for research equipment and infrastructure to support the research efforts of faculty, including three externally-funded Research Chairs in Invasion Biology (Ontario Ministry of Natural Resources), Natural Products Chemistry (NOHFC) and Health Informatics (ESRI Canada). Since 2008, AU has also invested in three research institutes, including the NORDIK Institute that is active in the Rural and Remote Communities research cluster.

In light of this progress, and our desire to prioritize and focus our research energies within the four clusters described in the preamble, AU undertook, in 2015, a collaborative process amongst senior administrators, the Research Advisory Committee, and faculty across disciplines, to prepare an updated version of our institutional Strategic Plan for Research (SPR).

Objectives of the Strategic Plan for Research

The major objectives of Algoma University's Strategic Plan for Research are to:

- **Contribute to the restoration** of self-determination, health, language and culture of **First Nation communities and peoples** by encouraging inclusive research collaborations and multidisciplinary approaches;
- **Strengthen research skills** of our primarily **undergraduate student population** through the example and mentorship of excellence-based faculty researchers;
- **Improve and increase research and high impact publication opportunities** for our undergraduate students to enhance their employability, and capacity to innovate;
- **Enrich the faculty research experience** through adjunct professorships, research clusters involving outside experts, and institutional policies designed to facilitate and expedite research activities;
- **Grow our percentage of Tri-Council funded faculty and thereby our allotment of Canada Research Chairs** such that each cluster integrates the expertise of a CRC to maximize its research productivity and impact;
- **Leverage** the regional abundance of environmental resources, existing academic expertise across disciplines, and the wealth of local language, culture, fine arts and music traditions that underpin many faculty research questions to further expand our research capacity;
- **Accelerate economic development and entrepreneurship** within our region, and advance the **national 'innovation ecosystem'**, through commercialization of research, where feasible; and,
- **Cultivate strategic partnerships with Aboriginal leaders, community organizations, not for profits and the private sector** to support applied research with regional economic benefits/impact.

Major Strategic Research Directions

Cluster 1: Anishinaabe and Indigenous Communities

The University is a unique institution that is physically located on the site of the former Shingwauk Indian Residential School. Our location on this site has led to the adoption of a special mission, entrenched in the University Charter, for teaching and research of significance to Anishinaabe people and peoples.

The University and its partners are committed to enriching faculty teaching and research and developing and disseminating knowledge in core areas of relevance to Indigenous communities and to all Canadians, including:

- Health and wellness;
- Traditional knowledge;
- Indigenous methodologies;
- Decolonization;
- Archival studies;
- Epistemologies and pedagogy;
- History and philosophy;
- Culture, language, literature, music, and visual arts;
- Governance and law; and,
- Land use.

Between 2010 and 2015, the Shingwauk Residential Schools Centre and various faculty members attracted over one million dollars in research funding.

The University has committed fiscal and human resources to the study of Residential Schools, with a particular focus on healing and reconciliation. In its Declaration of Partnership with the Children of Shingwauk Alumni Association, AU pledged “to use the site as a vehicle for education about residential schools” and “to make the history and legacy of Residential Schools and the promotion of the Sharing, Healing and Learning Vision a central, identifying characteristic of Algoma University.”

Since 1979, the university has operated the unique and internationally renowned Shingwauk Residential Schools Centre (originally the ‘Shingwauk Project’), a research, education, archive, and community service initiative with a research mandate related to the history and legacy of Indian Residential Schools and their wider colonial and international contexts. In 2010, the Centre became the repository for the Aboriginal Healing Foundation’s project and research records, making Algoma University **the destination for research on community-based healing initiatives.**

Strategic Goals Related to Cluster 1

1. Attract and leverage new funding that positions AU as a Centre of Excellence for research into the impact of Indian Residential Schools, and ways of reconciliation and healing for survivors. This funding will also be used to build partnerships between Aboriginal and non Aboriginal Canadians who seek to partner in healing and reconciliation activities and actions;
2. Provide support to faculty and their community research partners to increase the number and quality of Cluster 1 publications in peer reviewed journals and facilitate knowledge transfer such that lives of all Canadians are positively impacted by research outcomes of the Shingwauk Residential Schools Centre; and,
3. Support an interdisciplinary project that links this cluster with researchers in other sectors and departments such as business administration, computer sciences and any disciplines that share a common interest in economic self-determination for local Anishinaabe and Indigenous communities.

Cluster 2: Cultures and Creativity

Situated in the District of Algoma, a place of inspiration for the Group of Seven and artists such as Glenn Gould, and a traditional meeting place for Anishinaabe and Indigenous peoples, Algoma University researchers build upon the rich history and cultures inspired by the area and work to connect the local community with international cultural networks.

Faculty in this cluster are committed to exploring new and innovative methods of inquiry that extend the traditional foundations of their disciplines and draw from the strengths of cognate disciplines. Researchers undertake inquiries to illuminate developments in language, culture, and modes of representation that inform our contemporary world. Our faculty generates research and creative works that will give shape to the trajectory of these developments in the future.

Algoma University faculty have demonstrated research expertise in diverse areas including:

- Literature, philosophy, and the histories of peoples and ideas;
- Indigenous and Anishinaabe ways of knowing and language;
- Theories and practices of studio art production and exhibition; ~~and,~~
- Music composition, recording, and performance;
- Advancing business processes through organizational culture and workforce diversity.

Algoma researchers employ both traditional methodologies and interdisciplinary approaches to advance knowledge in gender, class, race, politics, power, space, place,

identity, narrative, language, culture, community, and nationality as well as other aspects of the human experience. An awareness of the diversity of Canadian society and its living connections to the nations and peoples on which it is built informs the scholarly activities of the faculty.

Research in this cluster includes collaboration and partnerships across disciplines and within the regional community. In Digital Humanities, researchers create online archives and develop information management systems. Faculty partner with the Algoma Conservatory of Music and the Art Gallery of Algoma to present innovative performances and exhibitions. Faculty also works with local museums to advance research in Public History. This research brings creative and innovative ideas to the students in the classroom, illuminating their studies in new and dynamic ways. Students enjoy access to archival documents and undertake field visits to significant sites in the regional landscape.

Archival research, philosophy, creative interaction, and production represent interconnected threads within this cluster and support the study of **culture and community**. Access to the rich archives of Algoma University and the Shingwauk Residential Schools Centre provide faculty, visiting scholars, and student researchers with a distinct research experience of the local Algoma region that has broader implications for Canadian and global cultures.

Faculty working in this cluster has brought in approximately \$380,000 in external funding since 2008.

Strategic Goals related to Cluster 2

1. Create and leverage multidisciplinary partnerships between faculty who undertake research focussed on traditional arts, music, and culture and researchers working on the Residential schools archive project to stimulate new research into the cultural impacts of the residential schools program;
2. Facilitate student publication of their research in peer-reviewed journals to increase impact on Canadian scholarship and address gaps in knowledge transfer;
3. Seek new funding to support research into understanding and preservation of Anishinaabe music, language, art and culture with research outcomes of value to student education (i.e., both Aboriginal and non Aboriginal students); and,
4. Work with faculty in business administration, computer sciences and other disciplines to facilitate multidisciplinary research that enhances the entrepreneurial and business development skills of regional artists, authors, and archivists.

Cluster 3: Life and the Environment

As indicated in the preamble, Algoma University is located in an environmentally significant area. Situated at the confluence of the upper three Great Lakes, it is less than an hour from the boreal forest biome, and offers immediate access to vast aquatic and terrestrial habitats. The University has taken advantage of its geographic location and the proximity of federal and provincial government laboratories to build a research cluster in the study of the natural environment and life sciences. Research efforts in the cluster intersect with strengths across other research clusters at the university and intra-institutional collaboration in the areas of 'human interactions with the environment' and 'human well being in northern Ontario' are strongly encouraged. It is envisioned that such research initiatives strengthen current programs and serve as a springboard towards the development of future cross-disciplinary programs.

Since gaining independence, Algoma University's research capacity in the area of life and environmental sciences has grown considerably to form a multidisciplinary research cluster with large potential for growth and graduate program development. Strengths in this area include:

- Molecular genetics;
- Ecosystem services, competition and biodiversity (NSERC funded);
- Research in soil and plant-microbial interactions (NSERC, CRC Tier 2 Chair);
- Plant biology and biochemistry (externally funded Chair – NOHFC);
- Ecology and behavioural biology, avian biology (NSERC funded);
- Invasive species and spatial analysis (CRC Tier 2 Chair); and,
- Aquatic and fisheries biology.

Collaborative projects involve faculty in the departments of Psychology, Biology, Geography and Computer Science. Faculty working within this cluster has brought in over \$4.6M in external funding in the period 2010-2015. Faculty has published 57 manuscripts and scholarly works in the last five years.

The university hosts two externally-funded research chairs within this cluster. One is a chair in Natural Products Chemistry, funded by NOHFC. The other is a Canada Research Chair (Tier II) in Invasive Species Biology. Funding from the Natural Sciences and Engineering Research Council and the Canada Foundation for Innovation have allowed AU to acquire infrastructure for state-of-the-art biochemistry, molecular biology and microbiology laboratories, plant growth facilities and an animal care centre housed in the Essar Convergence Centre, built in 2011. Dr. Antunes was also a Research Chair fully funded from 2010-2015 through the Ministry of Natural Resources for \$800,000.

MOAs established with the *Ontario Forest Research Institute* and the *Great Lakes Forestry Centre*, both of which are located within walking distance of the university main campus, provide additional opportunities for use of infrastructure that is not

available at the University. There is also emerging collaboration with the researchers at Lake Superior State University in Sault Ste. Marie, Michigan. Research within this cluster involves collaborations with other academic institutions nationally and internationally and partnerships with local industrial partners.

Strategic Goals related to Cluster 3

1. Increase numbers of international partnerships and international post doctoral fellows;
2. Seek approval for a graduate studies program at AU;
3. Increase the numbers of faculty and Research Chairs;
4. Participate in multidisciplinary projects involving Aboriginal partners and researchers in the social sciences, law and other disciplines that share a focus on, for example, preservation of the natural environment and traditional lands;
5. Increase the number of private sector partnerships over the next five years to leverage MITACS and other industrial partnership funding not currently accessible;
6. Secure funding to access high performance computing and other digital infrastructure to permit analysis of data in the fields of genomics, plant ecology, and microbial genetics; and,
7. Work with faculty in business and computer sciences divisions to operationalize Cluster 3 research, with particular emphasis on multiple stakeholder projects that utilize complex data sets.

Cluster 4: Socio-economic Issues of Northern, Rural, and Remote Areas

Canadians living outside of Northern Ontario often identify 'northern, rural, and remote' communities as 'peripheral'. Both geographically and economically, many northern communities have experienced economic decline over the past few decades.

Researchers in this cluster are motivated to understand structural impediments to growth and development in rural and remote areas, and also to propose responsible and holistic solutions to these economic and social challenges. The nature of research in this cluster is inherently multidisciplinary, and an array of research methodologies and partnerships are needed to appropriately investigate relevant research questions.

Rural and remote communities and northern regions are 'idiosyncratic', partly as a result of prolonged isolation. Research into the causes and consequences of poor or limited infrastructure, demographic factors, or over-reliance on the natural environment (e.g., mining, forestry, eco-tourism, and pulp and paper production) is of immense value in understanding northern society and local culture, and proposing solutions to economic downturn and population declines.

The action-oriented research common to this cluster, often done in consultation with community partners, stakeholders, and Anishinaabe and Indigenous peoples, examines local policy and planning while considering global trends and transformations. Recent research undertaken by AU faculty has looked at pollution, single-industry communities, public transportation, tourism, health, food security and the role of health informatics in public health.

The NORDIK institute of Algoma University (Northern Ontario Research, Development, Ideas and Knowledge), incorporated in 2007, has been charged with 'solving practical issues that are important to municipalities, First Nations and community organizations in Northern Ontario.' NORDIK has secured over \$2.7million in external funding since its inception. Additional key contributors in this cluster are the researchers focused on management and economics, which include a variety of areas of interest that focus on sustainable business practice.

Strategic Goals related to Cluster 4

The following are among the goals identified for the Rural and Remote Communities cluster:

1. Increase SSHRC and institutional support for faculty researching solutions to rural and remote issues in Northern Ontario;
2. Partner with Anishinaabe community researchers to address preservation of culture and traditional lands, and to examine ways of turning northern challenges into northern strengths;
3. Undertake innovative, multidisciplinary research into economic solutions for communities dependent on single, natural resource-based industries. Stakeholders in this activity include business and operations specialists with an understanding of northern markets and business practices; and,
4. Continue to expand the amount and quality of participatory action research sponsored and managed by the NORDIK institute.

Institutional Capacity to Support Research

As part of our commitment to growing a culture of Research and facilitating funded projects, AU maintains a Research Portfolio under the direction of Dr. Craig Chamberlin, President, who, in the absence of a VPR, also assumes that function. A Grants Administration Officer, a PhD level consultant to the office of research, a Research Advisory Committee (RAC), a Review Ethics Board (REB), and an Animal Care Committee (ACC) manage the day-to-day research needs of faculty and their students. AU also participates in OCUR, the Ontario Council of University Research. Since 2008, AU has contributed approximately \$1.6M of cash and in-kind contributions

in support of various funded projects. Where appropriate, AU partners with SSMIC, a business incubator representing the local Ontario Centres of Excellence.

Assessment of the Plan

The Research Advisory Committee will monitor the assessment of the Strategic Research Plan through benchmarks and the tracking of changes for:

- Achievement of program development goals within the clusters;
- Growing number of students in the fourth year of our Honours programs;
- Growing student involvement with faculty and partnership research;
- Increased faculty resources, including Canada Research Chairs;
- Growth in number of faculty funded by SSHRC, NSERC and other external funding sources;
- Increase in Highly Trained Personnel (HQP) trained by faculty with externally funded grants;
- Increase in number and quality of faculty and student research publications (e.g., impact factor and citations); and,
- Successful outcomes of partnership agreements, including: funding obtained; number of projects running; projects completed and outcomes/impact; economic benefits delivered to the region; and, job creation in the region.

Approved by Algoma University Senate: October 2, 2015