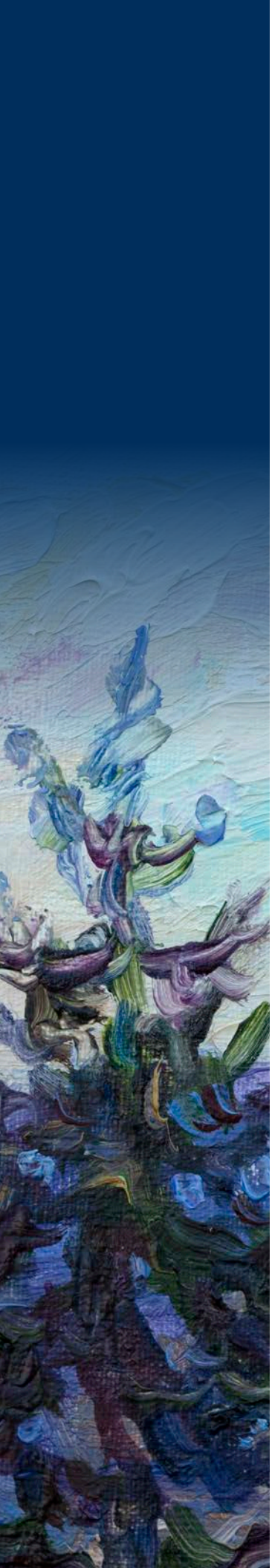
2023 RESEARCH ANNUAL REPORT

NOSM UNIVERSITY



Contents

Impressions

The 2023 Research Annual Report delves into research at NOSM University. Through an exploration of a wide array of research activities, we highlight the existing and developing collaborations between our clinical and non-clinical faculty, and between our faculty and those at other educational institutions in Northern Ontario, nationally and internationally.

Researchers and physicians engaging in research are leaving impressions across the region. They are seeing firsthand the profound impact their work can have on both individual patients and the broader community.

NOSM University's distinctive approach to research is deeply intertwined with its geographical context and mission. Located in a vast and diverse geographical area—and characterized by unique health-care challenges—researchers across the North are engines of continued growth in the range and complexity of research.

Continue reading and discover for yourself how the theme of this report—Impressions—underscores how researchers and physicians are leaving their mark on patient care, trust-building, safer medical practices, medical education, and collaboration within the health-care community. By continuously expanding their knowledge and contributing to scientific inquiry, the researchers featured in this report play a vital role in informing paths to better health outcomes for Northerners and the lives of patients around the world.

Dr. David C Marsh
Vice Dean, Research, Innovation and International Relations
NOSM University

Strengthen Research Capacity in Northern Ontario

GOAL

To **strengthen research capacity** in Northern Ontario by aligning with health-research partners to improve performance and measurable outcomes in health services, quality health care, health and biomedical research and knowledge translation.

ASPIRATION

NOSM University is the connective tissue between research entities, Northern Ontario Health Teams (OHTs), research institutes and hospitals.

OUTCOMES

- ✓Establish research partnerships, networks and clusters including those with a cultural focus
- ✓Strong capacity in research and analytical processes
- ✓Develop interdisciplinary centers
- ✓New research opportunities for learners and faculty

strategicplan.nosm.ca

Showcase of 2023 Researchers

ICES North: Supporting Rural and Remote Research Across Northern Ontario

ICES Central is located on the campus of Sunnybrook Health Sciences Centre in Toronto and has grown to a network of sites at each of Ontario's six medical schools. The first five sites (ICES Queen's, ICES uOttawa, ICES UofT, ICES Western, and ICES McMaster) collaborate with researchers from their respective universities. In June 2018, ICES North was the last site to join the network. With the goal of improving research opportunities in the north, ICES North is supported by the Health Sciences North Research Institute (HSNRI) in Sudbury and NOSM University.

ICES leads cutting-edge studies that provide evaluation, planning, and monitoring of our health-care system with the goal of improving population outcomes. ICES researchers have access to more than 120 of Ontario's health-related datasets, including population-based health surveys, anonymous patient records and clinical and administrative databases. ICES is recognized as a leader in maintaining the privacy and security of health information.

ICES Data is an inventory of coded and linkable health data sets. It encompasses much of the publicly funded administrative health services records for the Ontario population eligible for universal health coverage since 1986. This includes health service records for almost 21 million people. The breadth and scope of ICES Data is the foundational resource for creating unbiased evidence to drive health system policy, planning and evaluation. It also supports hundreds of research projects each year undertaken by researchers across the province.

ICES Vision

Image from: https://www.ices.on.ca/our-organization/mission-and-vision/

ICES North is one of the six established ICES sites. It serves as a hub for information on Northern Ontario's unique demographic composition and health research questions that are rooted in rural and remote health. Hosted by Health Sciences North (HSN), with funding from various partners including NOSM University, **Dr. David Savage** is ICES North's Interim Site Director. There are currently four ICES North scientists.

A physical space for **ICES North** was initially located in Sudbury, but in 2023 it became completely virtual. This change facilitates more opportunities for Northern researchers to access health administrative data. Dr. Savage, a NOSM University alumnus and Assistant Professor, stated, "ICES has a strong virtual network and has encouraged remote work during the pandemic. Given the North's size, it makes sense to be the first completely virtual ICES site."

ICES North has also increased their complement of staff, hiring a new junior analyst and a staff scientist at the end of August. These positions support the increased interest and funded projects coming into ICES North. The new junior analyst, Tasneem Lalva, provides needed analytic capacity. Josh Cerasuolo, originally from Sault Ste. Marie, is the new staff scientist and he brings valuable expertise from his time at ICES McMaster. He worked at ICES McMaster for nearly seven years as an analyst and assisted with building their site and training their analytic staff. For ICES North, he also provides scientific oversight to many of the studies.

Below are selected projects that are either complete or in the final stages:

1. Dr. James Crispo, Assistant Professor, investigated the rates of emergency department (ED) visits for patients using amphetamines. He found that the rate has increased by nearly 15% over time, with many of those patients returning to the ED with either psychosis or other substance abuse issues. The journal article, titled ***Amphetamine-related emergency department visits in Ontario, Canada, 2003-2020***, can be found on the ICES website.

2. Dr. Amer Alaref, Associate Professor, and his group are investigating the impact of pre-operative MRI for patients with pancreatic cancer. Their study shows improved patient selection and suggests that MRI should be integrated into the pre-operative assessment.

3. Dr. Chris Verschoor, Assistant Professor and Scientist at HSNRI, has found that geriatric patients that contract Respiratory Syncytial Virus (RSV), once only thought to affect infants and small children, actually have worse outcomes in terms of mortality and rates of heart failure when compared to influenza patients.

4. Drs. Mary Pat Sullivan and Veronika Williams, faculty at Nipissing University, are examining young onset dementia (patients under the age of 65) and their health-care resource utilization prior to their diagnosis.

If you would like to learn more about collaborating with ICES North, please email ICESNorthAdmin@ices.on.ca.

MSC North: Mindful Self-Compassion North

HELPING THE HELPERS
MSC North
MINDFUL SELF-COMPASSION NORTH

Mindful Self-Compassion North–or MSC North, for short–was founded by Dr. Bryan MacLeod, NOSM University Associate Professor and researcher, in collaboration with Monique Mercier. They are on a mission to support practising clinicians' wellness, through evidence-based self-compassion training, with the provision of in the moment skills and tools which have been shown to reduce burnout, depression, and anxiety.

Dr. MacLeod is a chronic pain physician who researches self-compassion for health-care professionals and works to promote clinician health. A Northwestern Ontario Medical Program (NOMP) graduate, Dr. MacLeod's career began as a rural family doctor in Marathon, and he has since held clinical leadership roles as NOMP's Medical Director, Faculty Development; Medical Director, Palliative Care at the Thunder Bay Regional Health Sciences Centre (TBRHSC); Medical Director, Chronic Pain at St. Joseph's Care Group (SJCG); and, Medical Director, ECHO North.

Monique Mercier is a psychological associate registered with the College of Psychologists of Ontario. She is the founder of Kindful Psychology Services, which was born out of a vision for creating a space for individuals to explore the 'not-so-often talked about' aspects of our human experience with curiosity and kindness. She has been teaching mindful self-compassion through the Centre for Mindful Self-Compassion for the past four years.

Since April 2020, Ms. Mercier and Dr. MacLeod have delivered the **Self Compassion Training for Health Care Communities (SCHC) course** and its six hours of evidence-based, Self-Compassion content (usually six weekly one-hour sessions) to hundreds of clinicians and learners at NOSM University and across Ontario. This training aims to improve wellbeing and personal resilience in health-care professionals by teaching mindful self-compassion skills and tools to better handle distressing emotional situations as they occur at work and at home.

The MSC North team are the first to teach and research the SCHC course in medical schools. Preliminary medical learner data shows significant reductions in burnout, depression and anxiety and improved resilience for attendees following the SCHC course. At the three-month follow up, the learners demonstrated ongoing significant improvement in mindfulness, compassion (both for self and others), and reductions in burnout, and secondary traumatic stress. Aggregate data over many learner courses demonstrates 48% and 34% reductions in stress and burnout, respectively (Simpson et al. 2023 submitted).

The clinical faculty data has equally compelling results, with significant improvements in secondary traumatic stress, burnout, compassion satisfaction and self-compassion ($p<0.05$). Those findings have been presented at the following conferences:

- Mindful Self-Compassion, MSC North, NOSM faculty results 2021
- NOSM University Northern Health Research Conference 2022

The MSC North team has also delivered the SCHC course, as part of the **CPSO QI Partnership stream** at: Collingwood General and Marine Hospital (2022), Barrie's Royal Victoria Regional Health Centre (2022 & 2023), St. Joseph's Hospital & Psychiatry Local Education Group in Thunder Bay (2023), Timmins Area District Hospital (2023) and Parry Sound (2024). In 2025 they will be offering the "Prescription for Self-Compassion" course to fulfill requirements for the CPSO QI Individual stream, for all Ontario MDs not practising in hospital or unable to access the Partnership Stream.

Introducing Mindful Self-Compassion an Online Series Pilot

Three mini modules were developed by the MSC North team. The modules divide up the early content from the SCHC course with a goal of improving accessibility of self-compassion content to the broader audience of clinicians who may be "pre-contemplative" in their relationship to self-compassion. This module development was supported by funding from **AMS Healthcare**.

These three modules are available asynchronously online:

- **What is Self-Compassion?**
- **Common Misconceptions about Self-Compassion**
- **The Physiology of Self-Compassion**

For the past three years, MSC North has delivered self-compassion training from the SCHC course as part of the core curriculum delivered to first year NOSM University medical residents. However, only four hours of teaching time had been available, and were unable to teach the entire course. In 2023, piloting these three new online modules, they were able to cover almost the entire curriculum and they are in the process of analysing the data.

They successfully applied for a two-year Northern Ontario Academic Medicine Association (NOAMA) Alternate Funding Plan (AFP) Innovation grant to migrate sessions two through five of the SCHC course online with a view to piloting a fully hybrid course. Working with the Continuing Education and Professional Development team at NOSM University, the MSC North team will begin the adaptation process in the spring of 2024, with piloting expected in the fall of 2025.

They have also been approached by the Association of Faculties of Medicine of Canada, specifically their Committee for the **Culture of Academic Medicine Initiative (CAMi)**. The Committee's mandate is to improve compassion in Canadian medical schools. Preliminary conversations have focused on adapting the entire SCHC course to an online environment, and the MSC North team will reconnect with them after the pilot in 2025.

An 80/20 hybrid/live model offers some clear benefits:

- There is currently far greater demand than there is available teaching capacity.
- Giving every medical student in Canada access to SCHC teachings will have a massive ripple effect when it comes to recommendations to patients regarding wellness training (see infographic below).
- There is significant opportunity for hybrid teaching models.
- With increased understaffing and clinician burnout, many in the health-care community see themselves as unable to commit to regular class times. They might do so after having seen the benefit of flexible online learning and the importance of the content to their well-being.
- Many of the clinician participants want to promote its content and the benefits to their patients.
- By improving accessibility to this population, this will implicitly expand the reach of traditional MSC teachings overall in the general population.

Universal Mental Health, Self-Compassion Infographic Tools

The MSC North team is also piloting infographics and other resource-based tools to support both clinician ongoing learning, and techniques and resources for imparting knowledge to their patients. They did this in partnership with the **College of Family Physicians of Canada (CFPC)**, and will be piloting the three infographics in the summer and fall of 2024.

The topics are:

- **Window of Tolerance**
- **Emotional Regulation: the Physiology of Self-Compassion**
- **Being With Difficult Emotions**, including **How to Engage your Soothing System**

Dr. MacLeod has received funding from a number of external sources to support his research projects including the College of Family Physicians, AMS Healthcare and NOAMA. Dr. MacLeod has also received a NOSM University Medical Education Research Fund award and has supervised several summer medical student awards.

Recent publication:

Hunt, S., Simpson, J., Letwin, L, & MacLeod, B. (2023). Is online learning during the COVID-19 pandemic associated with increased burnout in medical learners?: A medical school's experience. *PLoS One, 18*(5). **https://doi.org/10.1371/journal.pone.0285402**

The MSC North Research Team

B. Mackenzie Barnett (PhD candidate, Lakehead University, 2025)

Mackenzie is a PhD student in clinical psychology at Lakehead University. Mackenzie is passionate about interdisciplinary applied health research. She brings her interest in equity and inclusion to the MSC North Team, studying the intersection of mindfulness, self-compassion and bias reduction in health-care providers and learners for her dissertation. When not at work, you'll find her taking a cold plunge, hiking/camping, or out rock climbing with friends.

Jenna Simpson (NOSM University, 2024)

Jenna is graduating from NOSM University's undergraduate medical education program and is excited to be starting the next chapter in her career, beginning her paediatric residency at the University of British Columbia (UBC) this July. She has been a prolific contributor to the MSC North team and also a mentor to newer members in qualitative research analysis.

Janelle Lazor (NOSM University, 2025)

Janelle is a third-year NOSM University undergraduate medical student with a background as a Physiotherapist. She was elected to the Student Wellness Committee as a 2025 Year Representative, with a firm belief of taking care of oneself, before being able to fully take care of others. She attended the Mindful Self-Compassion Course as a first year student, and joined the research team in June 2022. Janelle is an invaluable contributor to their qualitative research.

Chad Tremblay (NOSM University, 2025)

Chad was born and raised in North Bay, where he grew up enjoying time with family and playing sports with his twin brother. Chad has been part of the quantitative analysis team for a few years and has assisted with manuscript writing for publication. He also helped create self-compassion infographics for patients and physicians in collaboration with the College of Family Physicians of Canada. Chad has been an invaluable contributor to MSC North's quantitative research and, like Jenna and Janelle, is mentoring the team's next generation of researchers.

Brooklyn Ranta (NOSM University, 2026)

Brooklyn is a second-year NOSM University undergraduate medical student at the Thunder Bay campus, and has been a long-time mental health advocate. With her sights set on psychiatry, Brooklyn greatly enjoys her work with Dr. MacLeod on self-compassion within medical education and practice, and has been working on a chapter for a collaborative publication focusing on compassion within the medical field. Brooklyn has also been the Wellness Representative for the past two years, and is enthusiastic to continue her work within mental health advocacy.

Claire Poulin (NOSM University, 2026)

Claire is currently a second-year medical student at NOSM University in Thunder Bay. She is a proud Northern Ontarian, raised in Atikokan. Claire is passionate about bringing accessible health care to the North, and supporting medical student wellness in completing their education in the North which contributes to a vibrant and resilient health-care community.

Chelsea Klein (NOSM University, 2027)

Chelsea is in her first year at NOSM University at the Thunder Bay campus. She has an academic background in translational and molecular medicine from the University of Ottawa. Chelsea has a strong interest in mental health and wellness, whether through its involvement in the medical field or using mindfulness self-compassion tools in her own life. Chelsea is also interested in Francophone health and the availability of relevant resources to all demographics that encompass Northern Ontario. With a passion for research and mental health, she is excited to join the MSC North team and work on projects surrounding these two crucial aspects of medicine.

Dr. Robert Ohle appointed Heart and Stroke Foundation of Canada/NOSM University Chair in Indigenous and Rural Health Research

Research to focus on cardio- and cerebrovascular disease with Indigenous and rural communities

Dr. Robert Ohle, Associate Professor, was **appointed Heart and Stroke Foundation/NOSM University Chair in Indigenous and Rural Health Research** for a five-year renewable term. Dr. Ohle will advance research on cardio- and cerebrovascular disease with Indigenous and rural communities, collaborate with Indigenous partners with an aim to build capacity in rural health across Ontario. Working in concert with Indigenous and rural research units, he will consult with elders, Indigenous leaders, health systems managers, government officials, and the public to better understand the challenges faced in these communities.

Northern Ontario has a higher rate of **chronic disease** than the provincial average. Leading efforts across a large geographic area with diverse populations, Dr. Ohle will promote a shared vision for cardio- and cerebrovascular disease research and share best practices and clinical guidelines to improve quality of care and patient outcomes.

"I am very humbled by the opportunity to work with Indigenous and rural communities to address health disparities in cardiovascular research. Through this position, I can combine my research skills and my passion for Indigenous and rural health to make a positive impact on health equity in Northern Ontario," Dr. Ohle says. "This important research will make a difference for patients across the region."

Dr. Ohle, who immigrated to Canada from Ireland, is the Vice-President, Academic and Research Impact, at Health Sciences North (HSN) and Health Sciences North Research Institute (HSNRI), an emergency room physician at HSN, and an Associate Professor at NOSM University. His previous work has involved developing **national guidelines** for diagnosing and treating acute aortic syndrome, and co-founding the **Northern City of Heroes initiative**, which aims to increase survival from out-of-hospital cardiac arrest through improved access to CPR training and AED utilization.

Strategic partnerships such as this are key to changing population health outcomes in Northern Ontario. The position was established in 2013 through a collaboration between NOSM University and Heart & Stroke.

"Heart & Stroke is committed to working in full partnership to advance health equity in Indigenous communities and meeting the challenges of health reconciliation," says Dr. Lesley James, Director of Health Policy and Systems at Heart & Stroke. "With the support of our incredible partners, including Dr. Ohle and NOSM University, we can leverage learnings from new research to improve the heart and brain health of Indigenous peoples and rural communities in Ontario and beyond. We are proud to support Canada's next generation of heart and brain researchers and extend our congratulations to Dr. Ohle on his appointment as Chair."

Dr. Ohle's 2023 publications:

Edlow, J. A., Carpenter, C., Akhter, M., Khoujah, D., Marcolini, E., Meurer, W. J., Morrill, D., Naples, J. G., Ohle, R., Omron, R., Sharif, S., Siket, M., Upadhye, S., e Silva, L. O. J., Sundberg, E., Tartt, K., Vanni, S., Newman-Toker, D. E., & Bellolio, F. (2023). Guidelines for reasonable and appropriate care in the emergency department 3 (GRACE-3): Acute dizziness and vertigo in the emergency department. *Academic Emergency Medicine*, 30(5), 442-486. **https://doi.org/10.1111/acem.14728**

Hébert, S., Kohtakangas, E., Campbell, A., & Ohle, R. (2023). The efficacy of prehospital IV fluid management in severely injured adult trauma patients: A systematic review and meta-analysis. *Canadian Journal of Emergency Medicine*, 25(3), 200-208. **https://doi.org/10.1007/s43678-023-00447-9**

Hudek, N., Brehaut, J. C., Rowe, B. H., Nguyen, P. A., Ghaedi, B., Ishimwe, A. C., Fabian, C., Yan, J. W., Sivilotti, M. L. A., Ohle, R., Le Sage, N., Mercier, E., Archambault, P. M., Plourde, M., Davis, P., McRae, A. D., Hegdekar, M., & Thiruganasambandamoorthy, V. (2023). Development of practice recommendations based on the Canadian Syncope Risk Score and identification of barriers and facilitators for implementation. *Canadian Journal of Emergency Medicine, 25*(5), 434-444. **https://doi.org/10.1007/s43678-023-00498-y**

McGillis, M., Roy, D., Savage, D., McIsaac, S., Nicholls, J., Waltenbury, D., & Ohle, R. (2023). Overuse of pharmacological treatments for patients with benign paroxysmal positional vertigo in the emergency department. *Canadian Journal of Emergency Medicine 25*(8), 710-711. **https://doi.org/10.1007/s43678-023-00549-4**

Ohle, R., McIsaac, S., Van Drusen, M., Regis, A., Montpellier, O., Ludgate, M., Bodunde, O., Savage, D. W., & Yadav, K. (2023). Evaluation of the Canadian clinical practice guidelines risk prediction tool for acute aortic syndrome: *The RIPP score. Emergency Medicine International, 2023*, 6636800. **https://doi.org/10.1155/2023/6636800**

Ohle, R., Savage, D. W., McIsaac, S., Yadav, K., Caswell, J., & Conlon, M. (2023). Epidemiology, mortality and miss rate of acute aortic syndrome in Ontario, Canada: a population-based study. *Canadian Journal of Emergency Medicine, 25*(1), 57-64. **https://doi.org/10.1007/s43678-022-00413-x**

Ohle, R., Van Dusen, M., Savage, D. W., McIsaac, S., & Yadav, K. (2023). Can you accurately rule out acute aortic syndrome by restricting imaging of the aorta to the area of the patient's pain? *Emergency Radiology, 30*(6), 719-723. **https://doi.org/10.1007/s10140-023-02179-w**

Randle, T., Garg, A., Mago, V., Choudhury, S., Ohle, R., Strasser, R., Moore, S. W., Kernick, A., & Savage, D. W. (2023). Staffing rural emergency departments in Ontario: The who, what and where. *Canadian Journal of Rural Medicine, 28*(2), 73-81. **https://doi.org/10.4103/cjrm.cjrm_51_22**

Simmons, K. M., McIsaac, S. M., & Ohle, R. (2023). Impact of community-based interventions on out-of-hospital cardiac arrest outcomes: a systematic review and meta-analysis. *Scientific Reports, 13*(1), 10231. **https://doi.org/10.1038/s41598-023-35735-y**

Slade, S., Hanna, E., Pohlkamp-Hartt, J., Savage, D. W., & Ohle, R. (2023). Efficacy of fascia iliaca compartment blocks in proximal femoral fractures in the prehospital setting: A systematic review and meta-analysis. *Prehospital and Disaster Medicine, 38*(2), 252-258. **https://doi.org/10.1017/S1049023X23000298**

Wang, D. S., Shen, J., Majdalany, B. S., Khaja, M. S., Bhatti, S., Ferencik, M., Ganguli, S., Gunn, A. J., Heitner, J. F., Johri, A. M., Obara, P., Ohle, R., Sadeghi, M. M., Schermerhorn, M., Siracuse, J. J., Steenburg, S. D., Sutphin, P. D., Vijay, K., Waite, K., & Steigner, M. L. (2023). ACR appropriateness criteria® pulsatile abdominal mass, suspected abdominal aortic aneurysm: 2023 update. *Journal of the American College of Radiology, 20*(11S), S513-S520. **https://doi.org/10.1016/j.jacr.2023.08.010**

Research Priorities

Themes	Research Priorities
Clinical and Translational Health	• **Cardiovascular** • **Cancer** • **Surgery** • **Primary Care**
Biomedical and Basic Sciences	• **Environmental Health** • **Physiology, Biological Systems and Functions** • **Disease Process, Diagnostics and Therapeutics**
Population and Public Health	• **Chronic Disease** • **Rural Medicine** • **Health Services** • **Social Determinants of Health**
Humanities and Social Sciences	• **Indigenous Peoples' Health** • **Francophone Health** • **Health Professions Education**

NOSM University Researcher and Partners Develop Groundbreaking Heart Attack Classification

Photo (L-R): Suzanne Betteridge-LeBlanc, NOSM University MD student; Dr. Rony Atoui, Cardiac Surgeon, Health Sciences North and NOSM University Professor; Dr. Andreas Kumar, Cardiologist, Health Sciences North, NOSM University Associate Professor, and President, Canadian Society for Cardiovascular Magnetic Resonance Imaging; Dr. Anthony Main, Cardiologist, Health Sciences North. (Photo credit: Health Sciences North)

A significant heart health breakthrough has been made, thanks to new research by Dr. Andreas Kumar, Associate Professor and Cardiologist at Health Sciences North, and a team of Canadian and American experts.

A new clinical classification is a gamechanger in the way that medical providers assess heart attacks. Released by the Canadian Cardiovascular Society (CCS), the classification is based on research by Dr. Andreas Kumar and his colleague Dr. Rohan Dharmakumar at Indiana University School of Medicine. NOSM University medical student Suzanne Betteridge-LeBlanc, cardiac surgeon and NOSM University Professor Dr. Rony Atoui, and cardiologist Dr. Anthony Main, Clinical Lecturer, were also authors on the classification, alongside a team of Canadian and American experts.

A powerful risk assessment tool, the novel classification assesses the tissue damage of heart attack patients. It divides cases into four categories based on the severity of tissue injury—an innovation that was not previously possible. The classification will be used by all health-care workers providing care for patients with heart attacks: cardiologists, cardiac surgeons, nurses, imaging technologists, and more.

"Not all heart attacks are the same," says Dr. Kumar. "Physicians can gain a good sense of the patient's risk category by assessing their tissue damage. It may even help with patient communication. Conveying to a patient that their heart attack is a less severe stage or more advanced stage may help patients better grasp the severity of disease."

According to Dr. Kumar, the new work builds on more than four decades of heart attack research and puts this research in a new light—but it's the possibility for future innovations that may make this research most impactful for patients. "Going forward, the development of better treatments will be possible for patients when we take into account the CCS stage of tissue damage," he explains. "We will be able to improve patient care and develop more personalized therapies. I believe that in five or ten years, we will have different therapies that are proven to be effective for different stages of heart attacks. This will have a profound impact on heart attack patients."

For more on Dr. Kumar's research, listen to his interview on the podcast **Parallax: Conversations in Cardiology**.

✓Research Priority: Cardiovascular

HSNRI Research Chair - Mental Health and Addictions

Dr. David Marsh, Vice Dean of Research, Innovation and International Relations at NOSM University, Professor, and adjunct scientist at ICES North, has been recruited by the Health Sciences North Research Institute (HSNRI) to serve as **Research Chair, Mental Health and Addictions**. Dr. Marsh's appointment is a five-year renewable term, generously supported by the Northern Cancer Foundation and the Health Sciences North Foundation.

✓Research Priority: Primary Care

2023 Emerging-Generation Award

Congratulations to NOSM University alumnus, Dr. Caitlyn Vlasschaert, who was granted a competitive **Emerging-Generation Award** from the American Society for Clinical Investigation (ASCI). Dr. Vlasschaert was the only Canadian among many United States awardees.

Dr. Vlasschaert's research focuses on how the kidneys are affected by acquired genetic changes such as clonal hematopoiesis of indeterminate potential (CHIP), a recently discovered hyperinflammatory disease of aging caused by mutations in hematopoietic stem cells.

✓ **Research Priority: Physiology, Biological Systems and Functions**

NOSM University Researchers Awarded $1.5 M NSERC Grant

NOSM University researchers and partners were awarded a prestigious Alliance grant from the Natural Sciences and Engineering Research Council of Canada (NSERC), valued at $1.5 million over five years.

The grant will fund several highly specialized projects. These include constructing a custom experimental chamber, designed specifically for studying the respiratory effects of low-level radon gas exposure. Radon is a naturally occurring radioactive gas found in the air we breathe, and the biological effects of long-term low dose exposures remain unknown.

The NSERC Alliance grant will also continue to support research in the Life Sciences Laboratory at SNOLAB focused on genetic effects caused by the absence of radiation. Specialized equipment allows researchers to understand the role of natural radiation and cellular changes that can lead to cancer or cell death.

NOSM University research at SNOLAB is also currently funded by the Canadian Space Agency and NASA, and the combined research supports the understanding of life on Earth and in outer space.

"NOSM University researchers are recognized as experts in the field of health effects of low-dose radiation from natural and human-made exposures," says Dr. Christopher Thome, NOSM University Assistant Professor and principal investigator on the projects. "This grant will build on significant research accomplishments that have supported the training of numerous students and scientists over the past ten years."

The research team consists of Dr. Thome as well as co-investigators Drs. Doug Boreham, Human and Medical Sciences Division Head and Professor, Suji Tharmalingam, Assistant Professor, TC Tai, Professor and Assistant Dean, Research, and Simon Lees, Associate Professor, Australian collaborators Drs. Dani Dixon and Tony Hooker, students at Laurentian University, and partners at the Nuclear Innovation Institute, Bruce Power, and Cameco Corporation.

✓ **Research Priority: Disease Process, Diagnostics and Therapeutics**

Socially Accountable Research in Action

Dr. Mike Bedard, Assistant Professor, **co-authored an article** titled 'Effect of Free Medicine Distribution on Health Care Costs in Canada Over 3 Years: A Secondary Analysis of the CLEAN Meds Randomized Clinical Trial', published by the JAMA Health Forum. The article was covered by the CBC.

✓ **Research Priority: Health Services**

Canada Gairdner Momentum Award 2023

Dr. Christopher Mushquash, Associate Professor, was the recipient of the **2023 Canada Gairdner Momentum Award** for his work in Indigenous-led mental health and substance use research. Established in 1957, the Gairdner Foundation's annual awards recognize and celebrate researchers from around the world for their excellence in fundamental research that impacts human health. Over the years, 402 awards have been presented to people from more than 40 countries and of those awardees, 96 have gone on to receive Nobel Prizes.

Dr. Mushquash, NOSM University Associate Professor, is Anishinawbe (Ojibway) and a member of Pawgwasheeng (Pays Plat First Nation). He is also a Professor in the Department of Psychology at Lakehead University, Clinical Psychologist at Dilico Anishinabek Family Care, Vice President Research at the Thunder Bay Regional Health Sciences Centre, and Chief Scientist at the Thunder Bay Regional Health Research Institute.

An alumnus of Dalhousie University, a **Dal News article** said that Dr. Mushquash "merges his clinical experience as a psychologist and his community-based participatory approach to research to meet community needs and improve systems and services that make a difference in people's lives. His innovative work focuses on Indigenous mental health and substance use through evidence-based practices that align with First Nations values."

✓Research Priority: Indigenous Peoples' Health

AMS Indigenous Medicine Stories

Indigenous Medicine Stories Podcast is a collaboration between AMS Healthcare and the Hannah Chair in the History of Indigenous Health and Indigenous Traditional Medicine at NOSM University.

Hosted by Dr. Darrel Manitowabi, Assistant Professor, and the NOSM U-AMS Hannah Chair in the History of Indigenous Health and Indigenous Traditional Medicine, the podcast educates health professionals and the public about Indigenous healing.

The **Indigenous Medicine Stories podcasts** highlight the lived experiences of Indigenous Knowledge holders, healers, and Elders and help professionals who practice Indigenous healing.

- Welcome to Indigenous Medicine Stories
- An Introduction to Indigenous Medicine Stories
- The Power of Spirit Can Facilitate Healing
- How Indigenous Healing Intersects with Biomedicine
- Onaubinisay, Walks Above the Ground
- Learning Our Teachings for Our Own Survival

✓Research Priority: Indigenous Peoples' Health

Indigenous Research Design: Transnational Perspectives in Practice

Dr. Lorrilee McGregor, Associate Professor, Human Sciences Division, NOSM University, with Dr. Susan Manitowabi, co-authored a chapter titled "Naagdowendiwin as a Methodological Approach to Research" in the **forthcoming book** *Indigenous Research Design: Transnational Perspectives in Practice*.

✓Research Priority: Indigenous Peoples' Health

The Dr. Gilles Arcand Centre for Health Equity

DR. GILLES ARCAND
CENTRE FOR HEALTH EQUITY

Advancing Health Equity through Socially Accountable Research

The Dr. Gilles Arcand Centre for Health Equity—previously the Centre for Social Accountability—made significant achievements in research output, impact, and advocacy in 2023. The Arcand Centre is home to seven active research networks, including: **CREATE**, **AI-North**, **Nourishing Health Education Coalition**, **SAFE for Health Institutions**, **NOLHS**, **MERLIN**, **NORTHH**. Their multidisciplinary team of 20 staff are dedicated to the improvement of health and wellness in Northern Ontario.

Through policy leadership and advocacy, research and innovation, and education that better aligns medical training with community needs, the Dr. Gilles Arcand Centre for Health Equity is becoming a frontrunner in the improvement of sustainable equity, access, and population health outcomes. A hallmark of the Centre's innovative approach to research is based in a commitment to:

- Research Output and Innovation;
- Partnership and Community Impact; and,
- Knowledge Translation and Advocacy.

This forward-thinking approach aims to address critical gaps in health care access, support data-driven decision making, and equity focused medical education in Northern Ontario with the goal of improving systemic and patient inequities.

Research Output and Innovation

The Centre's research networks—both across the North and internationally—are taking up the challenge of collective action and coalition-building through a collaborative approach to driving meaningful research output and innovation.

In 2023, the Dr. Gilles Arcand Centre for Health Equity outputs included 13 scholarly publications and 11 successful grant applications for a total of 27 active grants. Most notably, Director Dr. Erin Cameron, Assistant Professor, and her team were awarded a $2.4 million SSHRC Partnership Grant for the CREATE Project, which focuses on *Community-engaged Research in Education, Advocacy, & system Transformation for advancing health Equity (CREATE): Exploring the Transformative Potential of Socially Accountable Research Networks Locally and Globally (2023-2030)*.

The CREATE Project both studies and promotes innovative and networked approaches to socially accountable research, across local and global contexts. The project studies how social accountability can generate innovative methodological approaches that drive health equity to remedy health outcome disparities.

Through MERLIN, the home of the Health Education Workforce Impact Study (HEWIS), (formerly the NOSM University Physician Tracking Study), the Dr. Gilles Arcand Centre for Health Equity is supporting health human resource planning by tracking educational and career pathways of NOSM University graduates. HEWIS provides the data by which NOSM University's accountability can be measured and achieved, and provides data to support evidence-based decision making and policy development around addressing health inequities in Northern Ontario.

HEWIS is already contributing to the future aims of NOSM University by informing academic planning and expansion by contributing high level data, making predictions based on longitudinal data, and answering important questions about present and future health workforce trends and impacts. By developing data infrastructures that support collaborative and interdisciplinary research conducted by faculty at NOSM University, HEWIS bolsters collaborations within programs at NOSM University and across institutions and organizations like NOAMA, ICES North, TBRHRI and HSNRI.

Partnerships and Community Impact

The year 2023 saw the All Nations Health Partners Ontario Health Team (ANHP OHT) and researchers from the Centre continuing to strengthen their partnership through work focused on local preventative health-care services and access to, and utilization of, primary care with a focus on cancer screening in the Kenora region. Led by the NORTHH research team, in Summer 2023 the team recruited key informants who provide or coordinate primary health care and cancer screening in the ANHP OHT. Seven recommendations were put forward and validated by community partners and will require further advocacy at the federal, provincial and local levels to ensure resourcing for local implementation.

Northern Ontario Learning Health Systems (NOLHS) works with Northern Ontario Health Team partners to establish embedded research priorities and quality improvement plans for advancing data analytics in Northern Ontario. In April and November 2023, two "jamborees" were held with Northern Ontario health administrators, Ministry of Health policy-makers, RISE leads, and a central program of support to identify coordinated advancement in evidence-based decision-making and system innovation in the health system.

In September 2023, Dr. Brianne Wood, Assistant Professor, led a hybrid Consensus-building event on Socially Accountable Learning Health Systems attended by 20 leaders from across Canada, including patients, health-care professionals, administrators, research trainees, and researchers. The purpose of the event was to strengthen collaborative learning and knowledge sharing focused on the unique features of northern rural and remote health systems.

In October of 2023, AI-NORTH—led by Dr. Brianne Wood—hosted an AI4PH: AI for Public Health Event to bring together leaders in public health, population health, and primary health care in Northern Ontario to identify data and Artificial Intelligence (AI) needs, capacities, and priorities to create a learning health system. With over 40 people in attendance, this event focused on best practices, technical considerations, ethical considerations, and implementation strategies concerning AI in Northern Ontario Learning Health Systems.

In early 2023, researchers at the Arcand Centre, led by Dr. Erin Cameron, were awarded a SSHRC Connections grant, titled *Leveraging Innovation in Accreditation through Social Accountability & Equity (LIASE): Transforming Health Education*. The funding supported the synthesis of key findings from the think tank and disseminated the knowledge through an online international seminar series over the summer of 2023, hosted and organized by Arcand Centre Senior Research Associate Dr. Maxwell Kennel. It was led by members of the International Social Accountability and Accreditation Steering Committee (ISAASC) and it featured international experts who are engaged in accreditation processes and scholarship. The five events involved a dozen content experts and over 50 participants, with representation from across the globe.

Knowledge Translation and Advocacy

The Centre's emphasis on building local and international research networks through strong local and global partnerships has also set a foundation for meaningful knowledge translation and advocacy.

The Social Accountability as the Framework for Engagement (SAFE) for Health Institutions Project provides a **toolkit** to health institutions for the implementation of an **equity-oriented social accountability health policy strategy** through community engagement and co-design to close health equity gaps. In 2023, Principle Investigators Drs. Alex Anawati, Associate Professor, and Erin Cameron published four related papers on social accountability standards for health care service delivery and racism as a determinant of health and health care.

The joint appointment of Dr. Anawati with Health Sciences North (HSN) as Clinical Lead for Social Accountability is transforming the structure of the health institution and providing meaningful contributions. Over the past year, Dr. Anawati has been involved in establishing the Indigenous Health Advisory Council, hiring a manager for Equity Diversity Inclusiveness Antiracism and Accessibility (EDIAA), establishing the Inclusiveness, Diversity, Equity, Antiracism and Accessibility committee and the Francophone Advisory Committee. Additionally, Dr. Anawati has been involved in guiding HSN's strategic planning process, establishing a Social Accountability and Health Equity community of practice and delivered presentations on social accountability as an equity-oriented health policy strategy for HSN's board of directors, program council committees and most recently Ontario Health Northeast Collaborative.

Avenues for advocacy to reimagine health access and equity are also being pursued through the newly named Nourishing Health Education Coalition (formerly NOURISH, which aims to empower health-care systems to embrace food as medicine to advance health equity, climate action, and community wellbeing. In 2023 the coalition, led by Dr. Joseph LeBlanc, Associate Dean, Equity and Inclusion and Assistant Professor, continued to work across academic, public health and community spaces, and welcomed a Research Intern to develop a book manuscript to address education and advocacy for health, Indigenous Food Sovereignty, and food security in the North.

The Social Accountability Coordinator Position (Maxwell Kennel), jointly hosted by NOSM U and Towards Unity for Health (TUFH), has successfully launched a Social Accountability Fellowship program, with 14 fellows and their teams, and over 20 participants from across the globe. With educators from a variety of sectors - including health policy strategy, advocacy, and accreditation - the fellowship is focused on helping fellows (who are Deans of medical schools and other administrative and educational leaders) to complete the ISAT (Indicators of Social Accountability Tool), which helps institutions self-assess their journey toward greater social accountability. ISAT 2.0 has just been released in English, and it will soon be translated into several languages for use by Deans and Accreditation leads of medical schools around the world.

NOSM University receives transformational $10 million gift from Temerty Foundation

The Temerty Foundation, established by James and Louise Temerty, made a $10 million gift to support NOSM University medical students and to advance and grow social accountability and health equity initiatives. In recognition of this transformational gift, NOSM University's Centre for Social Accountability was renamed the **Dr. Gilles Arcand Centre for Health Equity**.

Dr. Gilles Arcand was Mrs. Louise Temerty's brother, a physician who, among other things, practised rural medicine in Northern Quebec. He was dedicated to serving marginalized communities before his death in 1975.

"The impact NOSM University is making to address the health-care inequities in remote, rural Indigenous and Francophone communities is momentous and much needed," says Louise Temerty. "We are pleased to support them in their quest, and I know my brother Gilles would be very proud."

NOSM University is the only post-secondary institution in Canada that was founded with an explicit social accountability mandate. Through policy leadership and advocacy, research and innovation, and education that best-aligns medical training with community need, the Dr. Gilles Arcand Centre for Health Equity will remain a leader in the development of strategies that help all people in Northern Ontario live better, healthier lives.

"We are grateful to the Temerty Foundation for their vision, their generosity and for helping us to do this important work," says Dr. Sarita Verma, NOSM University President, Vice-Chancellor, Dean and CEO. "In addition to supporting our students with scholarships and bursaries, this generous donation will help improve health equity for underserved communities through the Dr. Gilles Arcand Centre for Health Equity."

Dr. Erin Cameron is the Academic Director of the Dr. Gilles Arcand Centre for Health Equity. "The Centre leads and supports research, champions health policy and ignites community conversations around what it means to deliver equitable health care to people who need it most," she says. "We are so fortunate to have forward-thinking philanthropists like James and Louise Termerty who see the potential impact and societal value this kind of work can have."

Three million of the $10 million gift goes to support the Dr. Gilles Arcand Centre for Health Equity.

Researchers at the Dr. Gilles Arcand Centre for Health Equity receive $2.43M SSHRC grant to address local health priorities

A new project, led by Dr. Erin Cameron, Academic Director at the Arcand Centre, received a $2.43-million Social Sciences and Humanities Research Council (SSHRC) Partnership Grant to **address local health priorities**.

Dr. Cameron and her team will foster relationships between communities and academics. The project will study how academic institutions can direct their education, research, and service activities to address community needs, both locally and globally. The growing global social accountability research movement urges academics to heed this call.

"Social accountability as a research movement is still largely under-studied. This project will explore the transformative potential of a socially accountable research network for fostering partnerships and institutional change. NOSM University—and its many strong institutional and organizational partnerships across Northern Ontario, in Canada, and around the world—are primed to lead this work," says Dr. Erin Cameron.

Dr. Cameron, who is also an adjunct member in the Faculty of Education at Lakehead University, is excited to invest in and strengthen partnerships across institutions, organizations, and communities regionally, nationally, and internationally.

Supported in part by a Social Sciences and Humanities Research Council (SSHRC) Partnership Grant of $2.43-million over seven years, the total project of $3.2-million focuses on collecting and sharing best practices related to social accountability and scaling existing research projects on social accountability across new sites and settings. The project will also build capacity for socially accountable research. Co-directors in the project, Dr. David Marsh, Professor and Vice-Dean Research Innovation and International Relations, Dr. Joseph LeBlanc, Associate Dean, Equity and Inclusion and Assistant Professor, and Dr. Alex Anawati, Associate Professor, along with a team of over 20 researchers and 12 partner organizations, aim to create and grow a connected social accountability research network.

AI in the context of Northern health care

Researchers from NOSM University and Lakehead University are collaborating to better understand artificial intelligence (AI) in the context of Northern Ontario. The AI-NORTH project aims to identify ways that Northern and rural patients and populations are represented in, and benefit from, the global AI paradigm shift.

The project also connects people doing health care AI research through a collaboratory—a virtual space to share and discuss current projects happening in Northern Ontario.

Spearheaded by Dr. Erin Cameron, Assistant Professor, and the inaugural Academic Director of NOSM University's **Arcand Centre**, the project is funded by an **AMS Healthcare** Compassion and Artificial Intelligence Grant. Dr. Cameron co-leads this project with Dr. Michelle-Marie Spadoni, Associate Professor in Nursing at Lakehead University, along with NOSM University colleagues Drs. Alex Anawati, Associate Professor, and Joseph LeBlanc, Assistant Professor.

"Innovation is at the heart of health-care practice in Northern Ontario, and we are interested in how artificial intelligence is already being used and could be used to identify and address health priorities in the future," says Dr. Cameron. "Artificial intelligence in the North is different, and we hope to begin to articulate how—and in what ways."

The use of technology in education and health-care delivery in Northern Ontario has increased with the widespread shift to online technologies during the COVID-19 pandemic. This shift has helped to catalyze new ways of teaching and learning for many.

"Advances in AI are driving rapid changes in health care, and health professional education programs must adjust and quickly adapt to this reality, all while considering the social and political structures at play in the advancement of technologies that may shape the underpinning ethical and relational tenets of social accountability," Dr. Spadoni says.

"This is critical for anchoring contemporary health professional ethics, standards of practice, and ultimately shaping the lives of patients, families, communities, and health providers in ways expected and unexpected.

"While technology and artificial intelligence have the potential to drive better, more accessible care, there is a need to explore ways to reorient AI to better address priority health and social needs across the region."

The project brings together researchers and learners from across Northern Ontario, including Dr. Brian Ross (Professor, NOSM University), Dr. Trevor Bruen (Family Medicine Resident, NOSM University), Daniel Lamoureux (Medical Student, NOSM University), Dr. Muhammad Mamdani (Director, The Temerty Centre for Artificial Intelligence Research and Education in Medicine at the University of Toronto), Ghislaine Attema (PhD Student, Faculty of Education, Lakehead University), and Sophie Myles (Health System Fellow, Algoma Ontario Health Team), and the team continues to grow. For a complete list, visit the **AI-NORTH** website.

In the future, AI-NORTH will explore topics around AI and education, AI and policy, AI and equity, and AI and public health. Anyone interested in being part of these discussions is welcome to contribute and can contact **ai.north@nosm.ca** or subscribe to the **AI-NORTH newsletter**.

Master of Medical Studies

Since launching in 2020, the MMS Program has admitted 15 students, 10 were active in 2023.

A total of 26 supervisors, 10 co-supervisors and 10 committee members have approved MMS supervisory privileges. With representation from each of the Human, Medical and Clinical Sciences Divisions, eight of these faculty members are currently supervising graduate students.

A supervisor is a faculty member eligible to supervise, teach and mentor graduate students. A co-supervisor is a faculty member eligible to co-supervise a graduate student with another faculty member with supervisor status. A committee member is a faculty member interested in gaining research and supervisory experience by serving on a student's thesis supervisory committee.

The program continues to offer a variety of asynchronous online courses relevant to rural and remote research, with the intention of providing students with the opportunity to learn and develop the knowledge and skills necessary to be successful researchers. Currently, the MMS thesis-based program offers seven different courses–including the thesis course, three required courses, and three elective courses. Starting in September 2024, the MMS program will offer 11 different courses with the launch of the new course-based option.

MMS courses are specifically designed with a focus on rural or remote regions and ask research questions unique to these environments. Courses that will be offered starting September 2024 include:

Thesis-Based Option

Required Courses

- Research Thesis
- Introduction to Research in Medical Studies
- Independent Study/Advanced Topics
- Bioethics and Research Integrity

Elective Courses (students complete one)

- Research Grant Writing
- Critical Appraisal of Research Reports
- Research Dissemination
- Considerations in Rural and Remote Practice
- Data Management and Visualization
- Epidemiology
- Clinical Integration of Research
- Special Topics

Course-Based Option

Required Courses

- Introduction to Research in Medical Studies
- Independent Study/Advanced Topics
- Bioethics and Research Integrity
- Research Grant Writing
- Critical Appraisal of Research Reports
- Research Dissemination

Elective Courses (students complete three)

- Considerations in Rural and Remote Practice
- Data Management and Visualization
- Epidemiology
- Clinical Integration of Research
- Special Topics

Applications to the MMS program open in January for a September admission, and October for a January admission.

Delivered asynchronously online and designed to be flexible to suit your schedule.

Essential research skills that you will learn:

- Research project development.
- Grant writing skills.
- Principles of research ethics and compliance.
- For students who want to develop research skills and conduct research in their area of interest.
- Special topics in rural and remote communities.

NEW

- Expanded eligibility requirements.
- Apply with a Health Sciences related Bachelor's Degree.
- New: Choose either a course-based option or the existing thesis option.

For more information:
Contact graduatestudies@nosm.ca
Visit nosm.ca/gradstudies

Q&A with Graduate Student

On September 12, 2023, Dr. Jenna Darani successfully completed her Master of Medical Studies (MMS) thesis defence, titled *The Impact of the COVID-19 Pandemic on Doctor of Medicine Degree Students Participating in a Distributed Longitudinal Integrated Clerkship*. Dr. Darani began the MMS Program in 2020 as part of the first cohort of MMS learners, and with the guidance and support of her Supervisor, Dr. Brian Ross, Professor, Dr. Darani will be the first graduate of the MMS Program in 2024. To celebrate this milestone, we followed up with Dr. Darani and Dr. Ross who shared their experiences in the MMS Program.

Dr. Jenna Darani

Q: Briefly tell us about your research.

A: My thesis focused on the impact of the COVID-19 pandemic on third-year medical students at NOSM University who completed their longitudinal integrated clerkship. We assessed both the academic and personal impact of the student experience and found that although students did well academically, there was a significant impact on mental health and wellness with limited access to support in their longitudinal integrated clerkship communities.

Q: What is the potential impact of your research? What inspired you to pursue this area of research?

A: My thesis highlighted the importance of improved mental health and wellness supports in these smaller communities, which I believe will make change to this access in the upcoming years, with learner affairs already making adjustments. I was inspired to pursue this area of research as I saw that all communities, populations and age groups were being impacted by the COVID-19 isolation guidelines, and wondered how this would impact students in smaller communities. I also am passionate about medical education and improving the learners' experience, so this felt like a great first step in introducing myself to this field of research.

From left to right: Supervisor: Dr. Brian Ross, Professor; MMS Graduate: Dr. Jenna Darani; Thesis Committee Member, Dr. Erin Cameron, Assistant Professor

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Q: What made you choose the MMS program at NOSM University? Why should students consider this program?

A: I appreciated the MMS program's asynchronous model which allowed me to continue to work while completing my masters. It was beneficial for me to complete a virtual program so I could stay in my home city. My thesis advisor was hands-on, extremely helpful and supportive through my time at NOSM University. These are the reasons why I would recommend students consider this program.

Q: What is next for you?

A: I am currently working on publishing my thesis in a medical journal. I am also working as a family doctor in British Columbia and teach residents at UBC. I hope to continue teaching in the future and continue to pursue research in medical education.

Dr. Brian Ross

Q: What is your current area of research?

A: My overall interest is in neuroscience and psychology. This has included work in the medical, social and clinical sciences where I try to apply our knowledge of the brain and mind to different topics such as mental illness, and neuropharmacology, as well as something that is of interest to us here at NOSM University– learning, living and working in context (the context being Northern Ontario).

Q: What does being part of the MMS program mean to you and what is its significance?

A: It is not often that one gets to be a founding faculty member of the new program at a new medical school (now a new University), but I have had the honour of doing it twice, first in the MD program and now in the MMS. Northern Ontario has many opportunities for growth and improvement of the health-care system but knowing the what, where, when, who and how of change needs us to understand what is going on and what needs to happen. The MMS program aims to train our health-care workers to be scholars and researchers so that they have the skills and confidence to solve the problems they can see every day. The MMS is empowering and I feel privileged to be part of it.

Q: Briefly discuss your experience supervising Dr. Darani in the MMS program.

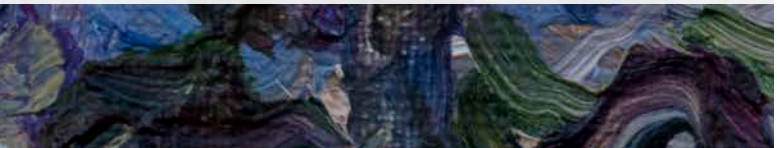
A: Dr. Darani and I used the COVID-19 pandemic experience to better understand the contextual and student support aspects of medical education occurring in our distributed sites across the region. Though we hope there will never be another such 'stress test' of the MD program, we learned a lot about what is great about our system, and what opportunities there are to make things better, whether during or not during a pandemic. As a newly qualified physician doing her residency Jenna really understood the challenges faced by students and this came through in the passion she showed for her work. It was a pleasure to work with such a motivated and clever student.

Student Award

Dr. Idorenyin Udoeyop, graduate student in the MMS program, received the 2023 Rising Star Award from the Canadian Association of Medical Education in February 2023.

The award is intended to recognize learners who have demonstrated a commitment and/or passion for health professions education. This could be education research, curriculum or workshop development, leadership, advocacy, etc., that has had a positive impact on the health professions education community at their school or beyond.

Awards



Internal Awards

Research Awards Committee

The Research Awards Committee is composed of NOSM University faculty members who, along with the Chair, Dr. T.C. Tai, Assistant Dean, Research and Professor, develop and adjudicate internal awards and prizes and make awardee recommendations to the Vice Dean, Research, Innovation and International Relations.

The Research Awards Committee was established in 2019, with faculty members appointed for a three year term adjudicating numerous internal awards, including those awarded in 2023. The current membership:

- Dr. Mohammed Shurrab – Assistant Professor, Clinical Sciences Division
- Dr. Scott Sellick – Associate Professor, Human Sciences Division
- Dr. Neelam Khaper – Professor, Medical Sciences Division
- Dr. T.C. Tai – Professor, Medical Sciences Division and Chair

In 2023 these members reviewed a total of 62 award applications.

New - Canadian Medical Student Research Competition

The Canadian Federation of Medical Students (CFMS) organized its first **research competition**, to be held virtually via zoom on May 4, 2024, and one medical student was selected to represent NOSM University. Congratulations to Simon Paquette, the inaugural winner of the competition.

To be eligible, the student had to be enrolled in the NOSM University MD program and had to submit a 300 word abstract about a recent research project that they worked on. All areas of research were eligible, but the project had to have started after the student entered medical school.

2023 Internal Faculty Research Awards by the Numbers

Award	# Applications Received	# Applications Funded	Amount Funded
Rene Guilbeault Research Award	1	1	$8,000
Research Development Fund	3	3	$28,500
Educational Research Fund	1	1	$4,000
Total Faculty Awards:	**5**	**5**	**$36,500**

Education Research Fund

Dr. Ken Hotson
Funded Amount: $4,000
Project Title: Investigation of PHIPA Guidelines and Their Application in Busy Primary Care Practices

NOSM University Research Development Grant

Dr. Simon Lees
Project Title: RAD140 treatment in skeletal muscle stem cells-implications for alcoholic myopathy treatment development
Funding Amount: $7,125

Dr. Sujeenthar Tharmalingam
Project Title: A rapid one-step diagnostic system to detect viral pathogens by CRISPR technology
Funding Amount: $7,125

Dr. Christopher Thome and Dr. Alexander Moise
Project Title: The effects of metabolic reprogramming on the response of cancer cells to radiotherapy
Funding Amount: $14,250

René Guilbeault Research Award

The René Guilbeault Research Award was established by a gift to NOSM University in May 2016, for the specific purpose of creating an endowed research award in Mr. Guilbeault's name. The use of these funds is unrestricted except that they must be directed in the area of Medical Research and must be awarded to a NOSM University full-time faculty member.

The 2023 award recipient was Dr. TC Tai, a Professor in the Medical Sciences Division for his project titled, *Role of estrogen on adrenaline synthesis and hypertension*.

Hypertension is a globally prevalent disease; in Canada, about 1 in 5 people develop high blood pressure. Men have a higher tendency to develop hypertension than women, specifically pre-menopausal women. However, postmenopausally, females lose this protection, and are at the same risk of developing the disease as same aged men. The female hormone estrogen has been proposed to protect women against cardiovascular diseases such as hypertension. Phenylethanolamine N-methyltransferase (PNMT), a gene responsible for the synthesis of adrenaline, has been linked to hypertension. Dr. Tai and his group will analyze the effect of estrogen on the functioning of the PNMT gene. This study will be beneficial in elucidating the role of estrogen and mechanisms underlying sex differences in the pathogenesis of hypertension.

2023 Internal Learner Research Awards by the Numbers

Award	# Applications Received	# Applications Funded	Amount Funded
Summer Medical Student Research Award	51	22	$116,600
Roger Strasser NHRC Travel Award	2	1	$1,000
UME Student Award in Medical Education Research	2	2	$13,200
Student Open Access Publication Fund	2	2	$3,911
Total Student Awards:	**57**	**27**	**$134,711**

Dr. Roger Strasser Northern Health Research Conference (NHRC) Travel Award

Alexandra Klem
Funded Amount: $1,000
NHRC Abstract Title: Investigating the immunotherapy potential of PARP inhibitors

Summer Medical Student Research Award

Lobna Abdel-Dayem
Funded Amount: $6,600
Project Title: Modulation of ferroptosis by retinol saturase
(Supervisor: Dr. Alexander Moise)

Danika Bongfeldt
Funded Amount: $6,600
Project Title: Assessing Illness Burden of Psoriatic Patients on Biologics in a Northern Ontario Population
(Supervisor: Dr. Sylvia Martinez Cabriales)

Tiana Bressan
Funded Amount: $4,400
Project Title: RECLESS (Rural Emergencies and Complications in Labour Events Simulations Suite): A novel innovation to maintain rural obstetrical competence and enhance service resilience
(Supervisor: Dr. Eliseo Orrantia)

Emma Harland
Funded Amount: $4,400
Project Title: Community member's experience collaborating with nursing, dietetic, and medical students during NOSM University's Year 2 UME IPE curriculum.
(Supervisor: Dr. Gayle Adams-Carpino)

Isabelle-Gabriele Hendel
Funded Amount: $6,600
Project Title: Social Accountability as the Framework for Engagement (SAFE) for Health Institutions Project: Piloting the Social Accountability Evaluation Tool and Applying Rapid Evidence Narratives to Inform Health Policies for an Academic Health Sciences Centre
Supervisor: Dr. Alex Anawati)

Catherine Kibiuk
Funded Amount: $6,600
Project Title: Skin and Soft Tissue Infections in the Sault Area Hospital Emergency Department: A Retrospective Study
(Supervisor: Dr. Lucas Castellani)

Alexander Kos
Funded Amount: $4,400
Project Title: The Fight for Sight: New Anti-Angiogenic Growth Factors in the Treatment of Age-Related Macular Degeneration
(Supervisor: Dr. Sanjoy Gupta)

Cynthia Larche
Funded Amount: $4,400
Project Title: Engaging with Drivers of Social Accountability: Community Engagement and Accreditation Systems
(Supervisor: Dr. Erin Cameron)

Félix Lavigne
Funded Amount: $4,400
Project Title: Establishing Caenorhabditis elegans (C. elegans) as a model system for radiation biology research
(Supervisor: Dr. T.C. Tai)

Melissa McElroy
Funded Amount: $6,600
Project Title: Healthy aging measures as predictors of poor outcomes in cancer patients
(Supervisor: Dr. Chris Verschoor)

Stéfanie Nolet
Funded Amount: $4,400
Project Title: Biological age as a determinant of immunotherapy-related toxicity in older cancer patients (Supervisor: Dr. Chris Verschoor)

Catherine O'Connor
Funded Amount: $6,600
Project Title: Critical analysis on the impact of student-led community health promotion outreach workshops
(Supervisor: Dr. Gayle Adams-Carpino)

Simon Paquette
Funded Amount: $4,400
Project Title: Reprogramming the gut microbiome to manage medication-refractory Type II Diabetes
(Supervisor: Dr. Sujeenthar Tharmalingam)

Matthew Steckle
Funded Amount: $4,400
Project Title: The role of abscisic acid (ABA) in the activation of peroxisome proliferator-activated receptor gamma (PPARgamma)
(Supervisor: Dr. Simon Lees)

Chad Tremblay
Funded Amount: $4,400
Project Title: Mindful Self-Compassion Essential Concepts - Evidence-Based Infographics for Patient Education & Engagement
(Supervisor: Dr. Bryan MacLeod)

Kyle Vader
Funded Amount: $4,400
Project Title: Evaluating the impact of concurrent opioid agonist therapy and hepatitis C treatment
(Supervisor: Dr. David Marsh)

Melissa Yeo
Funded Amount: $6,600
Project Title: Palpation, Pandemics and Prognosis: Past, Present and Future Challenges of Breast Cancer Screening in Canada, with a focus on Northern Ontario
(Supervisor: Dr. Geoffrey Hudson)

Summer Medical Student Research Award – AMS Healthcare

Mary Grannary
Funded Amount: $4,400
Project Title: Historical examination of the relationship between language and health and how this is exacerbated by language barrier between Health-Care Providers and Indigenous Communities
(Supervisor: Dr. Darrel Manitowabi)

Summer Medical Student Research Award – Mach-Gaensslen Foundation

Del John Houle
Funded Amount: $6,600
Project Title: Substance use stigma among first responders and emergency department staff in a Northern Ontario community: Raising awareness and understanding barriers
(Supervisor: Dr. Valerie Primeau)

Alexandra Klem
Funded Amount: $6,600
Project Title: Investigating the immunotherapy potential of PARP inhibitors
(Supervisor: Dr. Hoang-Thanh Le)

Alyssa Labelle
Funded Amount: $6,600
Project Title: Words still matter: Embracing "PLEX" shouldn't be this comPLEX in spinal cord injury
(Supervisor: Dr. James Crispo)

Mateo Newbery Orrantia
Funded Amount: $6,600
Project Title: Assessing Implementation and Effectiveness of Community of Practice Ketamine-Assisted Therapy (CoP-KaT) to Address Healthcare Worker Burnout in Rural Northern Ontario
(Supervisor: Dr. Ryan Patchett-Marble)

Student Open Access Publication Fund

Sarah Hunt
Funded Amount: $2,500
Publication Title: s online learning during the COVID-19 pandemic associated with increased burnout in medical learners?: A medical school's experience (Journal: PLOS ONE)

Mathieu Rheault-Henry
Funded Amount: $1,411
Publication Title: Incidental Finding of a Coronary Artery Fistula in a Patient with Anterolateral ST-Elevation Myocardial Infarction (Journal: Canadian Journal of Cardiology Open)

UME Student Award in Medical Education Research

Lobna Abdel-Dayem
Funded Amount: $6,600
Project Title: Evaluation of Medical Cultural Safety Curriculum
(Supervisor: Dr. Roger Strasser)

Cory Tremblay
Funded Amount: $6,600
Project Title: Skin Cancer Outcomes from Family Practice Referrals in Northwestern Ontario
(Supervisor: Dr. Sanjay Azad)

External Awards
2023 Externally Sponsored Research Funding

# of new Grants Awarded in 2023	Total amount of new grants awarded
68	$6,737,488.83

2023 Active Externally Sponsored Research Funding

# of all Active Grants in 2023	Total amount of all active Grants	2023 Disbursement Amount of active Grants
147	$23,098,824.35	$4,906,799.33

- **2023 Externally Funded Grants**

Funding Agency Definitions

- **NOAMA** – Northern Ontario Academic Medicine Association
    - **CIOF** – Clinical Innovation Opportunities Fund
    - **AFP** – AFP Innovation Fund
    - **RTI** – Research Tools and Instruments Grant
- **NSERC** – Natural Sciences and Engineering Research Council
    - **USRA** – NSERC Undergraduate Student Research Awards
- **SSHRC** – Social Sciences and Humanities Research Council of Canada
- **NOHFC** – Northern Ontario Heritage Fund Corporation
- **CFPC** – The College of Family Physicians of Canada
- **CIHR** – Canadian Institute of Health Research
    - **USRA** – CIHR Undergraduate Student Research Awards

List of Faculty Funding/Awards

(Principle Investigators listed only)

Dr. Mohamed Abbasy, Assistant Professor
Funded Amount: NOAMA CIOF - $46,059
Project Title: The prevalence of stigma toward mentally ill patients among Emergency Department physicians and nurses at Sault Area Hospital

Dr. Ahmed Ahmed, Assistant Professor
Funded Amount: NOAMA AFP - $50,000
Project Title: Comparison of the Pathological Outcomes and Safety and Efficacy of Thulium Fiber Laser vs. Holmium YAG Laser in Transurethral En-bloc

Dr. Brynlea Barbeau, Assistant Professor
Funded Amount: NOAMA CIOF - $49,945
Project Title: A RCT feasibility study: Involving family in the treatment of opioid use disorder in the ED

Dr. Tara Baron, Associate Professor
Funded Amount: Healthy Generations, Paediatric Resident Advocacy Education Grant - $6,663.83
Project Title: Promoting Early Literacy in Northern Ontario

Dr. Vishaal Bhambhwani, Assistant Professor
Funded Amount: NOAMA AFP - $50,000
Project Title: Feasibility study of a local, preventative diabetic retinopathy (DR) detection program utilizing autonomous artificial intelligence (AI) in Northwestern Ontario

Dr. Caitlin Cahill, Assistant Professor
Funded Amount: NOAMA CIOF - $10,650
Project Title: The Effect of Preoperative Very Low Energy Diet on Perioperative Outcomes in Colorectal Cancer Patients

Dr. Erin Cameron, Assistant Professor
Funded Amount: SSHRC Partnership Grant - $2,426,000
Project Title: Community-engaged Research in Education, Advocacy, & system Transformation for advancing health Equity (CREATE): Exploring the Transformative Potential of Socially Accountable Research Networks Locally and Globally (Stage 2)
Funded Amount: NOHFC Northern Ontario Internship Program - $35,000
Project Title: Digital Health Research Intern
Funded Amount: NOHFC Northern Ontario Internship Program - $35,000
Project Title: Equity and Education Research Intern
Funded Amount: AMS Healthcare Fellowship in Compassion and Artificial Intelligence - $75,000
Project Title: Learning to Trust: Advancing human-machine trust pedagogies for a technology enabled compassionate workforce in Northern and rural Canada
Funded Amount: SSHRC Connection Grant - $50,000
Project Title: Leveraging Innovation in Accreditation through Social Accountability & Equity (LIASE): Transforming Health Equity
Funded Amount: Ontario Health – Ministry of Health Ontario (McMaster University SubAward) Research Grant - $71,000
Project Title: Rapid-Improvement Support and Exchange (RISE) Program

Dr. Darren Costain, Assistant Professor
Funded Amount: NOAMA CIOF - $49,978
Project Title: Can a digital patient engagement platform (DPEP) reduce overdiagnosis of surgical site infection (SSI) and unnecessary antibiotic exposure post total joint arthroplasty?

Dr. Atilio Costa-Vitali, Associate Professor
Funded Amount: NOAMA AFP - $50,000
Project Title: Inflammation Markers and Neuropsychological patterns in patients with Heart Failure and Reduced Ejection Fraction

Dr. Erin Creasor, Clinical Lecturer
Funded Amount: NOAMA AFP - $50,000
Project Title: A Needs Assessment and Development of a Multidisciplinary Planetary Health Curriculum

Dr. Liliana DeMiglio, Assistant Professor
Funded Amount: NOAMA CIOF - $50,000
Project Title: The Rural Nursing Workforce Crisis: Developing a Retention Framework

Dr. Aviraj Deshmukh, Assistant Professor
Funded Amount: NOAMA CIOF - $34,158
Project Title: Outcome of Inter-facility Transfer for Endovascular Thrombectomy in Northern Ontario

Dr. Kaitlin Duncan, Assistant Professor
Funded Amount: NOAMA CIOF - $49,971
Project Title: Evaluating perioperative outcomes in residents of Northern Ontario: a population-based cohort study

Dr. Amir Hossein Faghih, Assistant Professor
Funded Amount: NOAMA CIOF - $46,500
Project Title: A pragmatic randomized, trial evaluating an endocrine therapy dose-frequency escalation strategy and its effects on tolerability and compliance (REaCT-TEMPO Study)

Dr. Nancy Fitch, Assistant Professor
Funded Amount: NOAMA CIOF - $50,000
Project Title: Ø RECLESS (Rural Emergencies and Complications in Labour Events Simulations Suite): A novel innovation to maintain rural obstetrical competence and enhance service resilience

Dr. Sathish Gopalakrishnan, Assistant Professor
Funded Amount: NOAMA AFP - $50,000
Project Title: Minimal residual disease by mass spectrometry in multiple myeloma- A Northern Ontario phase 2 observational study

Dr. Sean Gravelle, Clinical Lecturer
Funded Amont: NOAMA AFP - $43,937
Project Title: Characterizing hemodynamic responses to orthostasis and exercise in patients with post-acute sequelae of COVID-19/Long COVID

Dr. Sanjoy Gupta, Associate Professor
Funded Amount: NOAMA AFP - $50,000
Project Title: The Drug Chooses the Patient: A New Age of Personalized Medicine in Treatment of Lung Cancer

Dr. Ayman Hassan, Associate Professor
Funded Amount: NOAMA CIOF - $49,036
Project Title: Vascular Cognitive Impairment Detection Using Hyperpolarized Xenon-129 Brain MRI Imaging

Dr. Reinder Hummelen, Associate Professor
Funded Amount: NOAMA AFP - $49,930
Project Title: Enhancing care for pregnant women with Iron Deficiency Anemia

Dr. Mylène Juneau, Assistant Professor
Funded Amount: NOAMA CIOF - $50,000
Project Title: Complete Lifestyle Medicine Intervention Program (CLIP)

Dr. Roy Kirkpatrick, Associate Professor
Funded Amount: NOAMA CIOF - $50,000
Project Title: Practical Orthopaedic Application for Rural Practitioners; Evaluation of Online Learning

Dr. Benjamin Lalonde, Assistant Professor
Funded Amount: NOAMA CIOF - $49,992
Project Title: The Efficacy of Low-Dose Naltrexone for Pain Management

Dr. Tara Leary, Assistant Professor
Funded Amount: NOAMA CIOF - $50,000
Project Title: Comparative effectiveness of Sublocade® versus buprenorphine-naloxone and methadone for treatment of opioid use disorder in hospital: a pilot study in Sudbury, ON

Dr. Tina Lefrançois, Assistant Professor
Funded Amount: NOAMA AFP - $50,000
Project Title: Improving OR Scheduling Communication: Development and Implementation of an Application

Dr. David MacLean, Professor
Funded Amount: NSERC USRA - $6,000
Project Title: The effects of simulated microgravity and radiation on skeletal muscle tissue damage

Dr. Bryan McLeod, Associate Professor
Funded Amount: CFPC Member Interest Groups Section Project Funding - $5,000
Project Title: Self-Compassion Essentials: Tools for you and your patients – an Infographic Series

Dr. Melanie Mar, Assistant Professor
Funded Amount: NOAMA AFP - $50,000
Project Title: Pilot Study on Unattached Patient Clinic in Huntsville Ontario

Dr. David Marsh, Professor
Funded Amount: NOAMA AFP - $50,000
Project Title: Estimates of opioid use disorder prevalence from a capture-recapture analysis in Ontario Canada

Dr. Virginia McEwen, Assistant Professor
Funded Amount: NOAMA AFP - $50,000
Project Title: A Pediatric Pilot Program for Chronic Pain Care in Northwestern Ontario: A Northern Interventional Centre for Health Excellence (NICHe) in Pain Care Initiative

Dr. Alexander Moise, Associate Professor
Funded Amount: CIHR USRA - $6,000
Project Title: The effects of metabolic reprogramming on the response of cancer to radiotherapy

Dr. Jessica Nairn, Assistant Professor
Funded Amount: NOAMA CIOF - $50,000
Project Title: Rural Exercise for Cancer Patients and Survivors (RECaPS) Phase II

Dr. Mario Nucci, Assistant Professor
Funded Amount: NOAMA CIOF - $49,600
Project Title: Ketamine Assisted Psychotherapy in Addiction Medicine: A Case Series

Dr. Robert Ohle, Associate Professor
Funded Amount: NOAMA CIOF - $49,461
Project Title: Retrospectively validate a clinical risk score to predict a serious cause of vertigo in patients presenting to the emergency department

Dr. Eliseo Orrantia, Professor
Funded Amount: NOAMA CIOF - $50,000
Project Title: Addressing Northern Ontario's Opioid Use Crisis: The creation and dissemination of problem-based learning modules to adapt best-evidence practices in opioid use disorder to rural medical practice

Dr. Patricia Parsons, Assistant Professor
Funded Amount: NOAMA CIOF - $49,713
Project Title: Randomized Trial Evaluating Antibiotics in Delirium with Suspected Cystitis (READUCe)

Dr. Ryan Patchett-Marble, Assistant Professor
Funded Amount: NOAMA CIOF - $50,000
Project Title: Assessing Implementation and Effectiveness of Community of Practice Ketamine-Assisted Therapy (CoP-KaT) to Address Health-Care Worker Burnout in Rural Northern Ontario

Dr. Lacey Pitre, Assistant Professor
Funded Amount: NOAMA CIOF - $49,450
Project Title: The burden of a cancer diagnosis for patients in Northeastern Ontario

Dr. Stefano Priola, Assistant Professor
Funded Amount: NOAMA AFP - $49,804
Project Title: Role and Efficacy of Middle Meningeal Artery Embolization for Treatment of Chronic Subdural Hematomas in the North

Dr. Angelita Sanchez, Associate Professor
Funded Amount: NOAMA AFP - $24,822
Project Title: Assessing Impact of Virtual Care Use During the COVID-19 Pandemic on Mental Health in Ontario using Health System Output Indicators

Dr. David Savage, Assistant Professor
Funded Amount: NOAMA CIOF - $50,000
Project Title: Investigating the effect of rural emergency department closures on access to care and Ontario's rural communities using spatial analysis

Dr. Walid Shahrour, Associate Professor
Funded Amount: NOAMA CIOF - $50,000
Project Title: Prostate Health Promotion in Matawa First Nations
Funded Amount: NOAMA AFP - $50,000
Project Title: Social marketing campaign to promote prostate cancer screening tests in Treaty #3

Dr. Mohammed Shurrab, Associate Professor
Funded Amount: NOAMA CIOF $49,964
Project Title: Direct Comparison of Dabigatran, Rivaroxaban, and Apixaban for Effectiveness and Safety in Nonvalvular Atrial Fibrillation
Funded Amount: NOAMA AFP - $49,964
Project Title: Disparities in the Care and Outcomes of Patients with Atrial Fibrillation in Northern vs. Southern Ontario

Dr. Alain Simard, Associate Professor
Funded Amount: NSERC USRA - $6,000
Project Title: The impact of acetylcholine and choline on T cell activation in mice

Dr. Ravinder-Jeet Singh, Assistant Professor
Funded Amount: NOAMA CIOF - $50,000
Project Title: Prevalence of Incidental Findings in the Head and Neck Vessels on Arch-to-Vertex CT Angiography: A Retrospective Observational Cohort Study in Northeast Ontario

Dr. T.C. Tai, Professor
Funded Amount: NSERC USRA - $6,000
Project Title: Regulation of Catecholamine Biosynthesis by Estrogen and Progesterone

Dr. Sujeenthar Tharmalingam, Assistant Professor
Funded Amount: NSERC USRA - $6,000
Project Title: Investigating the role of long non-coding RNA in the DNA damage response
Funded Amount: NSERC USRA - $6,000
Project Title: Investigating the role of microRNA in the DNA damage response
Funded Amount: Northern Cancer Foundation Research Grant - $40,000
Project Title: Rewiring the prostaglandin signaling network for the treatment of therapy resistant breast cancer

Dr. Chris Thome, Assistant Professor
Funded Amount: Northern Cancer Foundation Research Grant - $40,000
Project Title: Engineering microbial species to secrete interleukin-33 as a mitigation strategy for gastrointestinal side effects following radiotherapy
Funded Amount: NSERC USRA - $6,000
Project Title: Harnessing genetically modified microbial species to combat the effects of ionizing radiation
Funded Amount: NSERC ($1M) with Nuclear Innovation Institute (Industry Partnership Funds) ($500K) Alliance Grant - $1,500,000
Project Title: Investigating the cellular and molecular mechanisms of exposure to natural radiation sources for informed risk assessment
Funded Amount: NSERC USRA - $6,000
Project Title: Investigating the role of natural background ionizing radiation in yeast

Dr. Ramamohan Veluri, Associate Professor
Funded Amount: NOAMA AFP - $49,820
Project Title: Evaluation of clinical conditions following dTMS treatment for co-morbid depression and anxiety to find out which symptoms improve first and to what degree to customize the selection of dTMS for patients depending upon the symptoms leading to best outcomes

Dr. Christopher Verschoor, Assistant Professor
Funded Amount: NSERC RTI Grant - $150,000
Project Title: Advanced cell sorting technology to properly investigate biological mechanisms in the presence of cellular heterogeneity

Dr. Brianne Wood, Assistant Professor
Funded Amount: CIHR (University of Ottawa SubAward) Foundation Grant - $10,000
Project Title: A Northern Ontario strategy to optimize health data and artificial intelligence for public health, population health, and primary health care (IKTRN)

Dr. Barbara Zelek, Professor
Funded Amount: CIHR (Unity Health Toronto SubAward) Operating Grant - $93,260
Project Title: Canadian ADAptive Platform Trial of COVID-19 Therapeutics in Community Settings (Can-ADAPT COVID) CANTREAT
Funded Amount: NOAMA CIOF - $50,000
Project Title: Collaborative Quality Improvement in Adolescent Mental Health During the COVID-19 Pandemic: A Geographic Analysis of Administrative Health Data
Funded Amount: NOAMA AFP - $49,811
Project Title: Prevalence of Metabolic Syndrome and assessing the existing facilitators and barriers in promoting healthy lifestyles in patients with Metabolic Syndrome in Northern Ontario

Dr. Petros Zezos, Associate Professor
Funded Amount: NOAMA CIOF - $50,000
Project Title: Upper gastrointestinal bleeds in northwestern Ontario: An epidemiological review of aetiologies, interventions, and outcomes

Faculty Publications

The Health Sciences Library conducts an annual faculty publications search for peer-reviewed articles. The citations provided are a snapshot of what is available at the time the searches are conducted. Best efforts are made to identify and validate NOSM University-authored publications. The 2023 NOSM University **Faculty Publications Bibliography** represents the unique citations. Unique citations are articles listed only once in the bibliography, even if there were multiple NOSM University faculty who authored a particular article. NOSM University faculty members are denoted in bold within each citation.

View the Library Guide

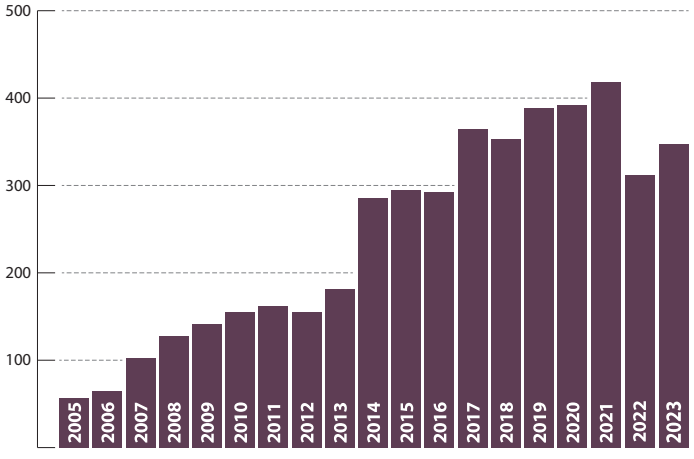
351

Total number of unique publications in 2023

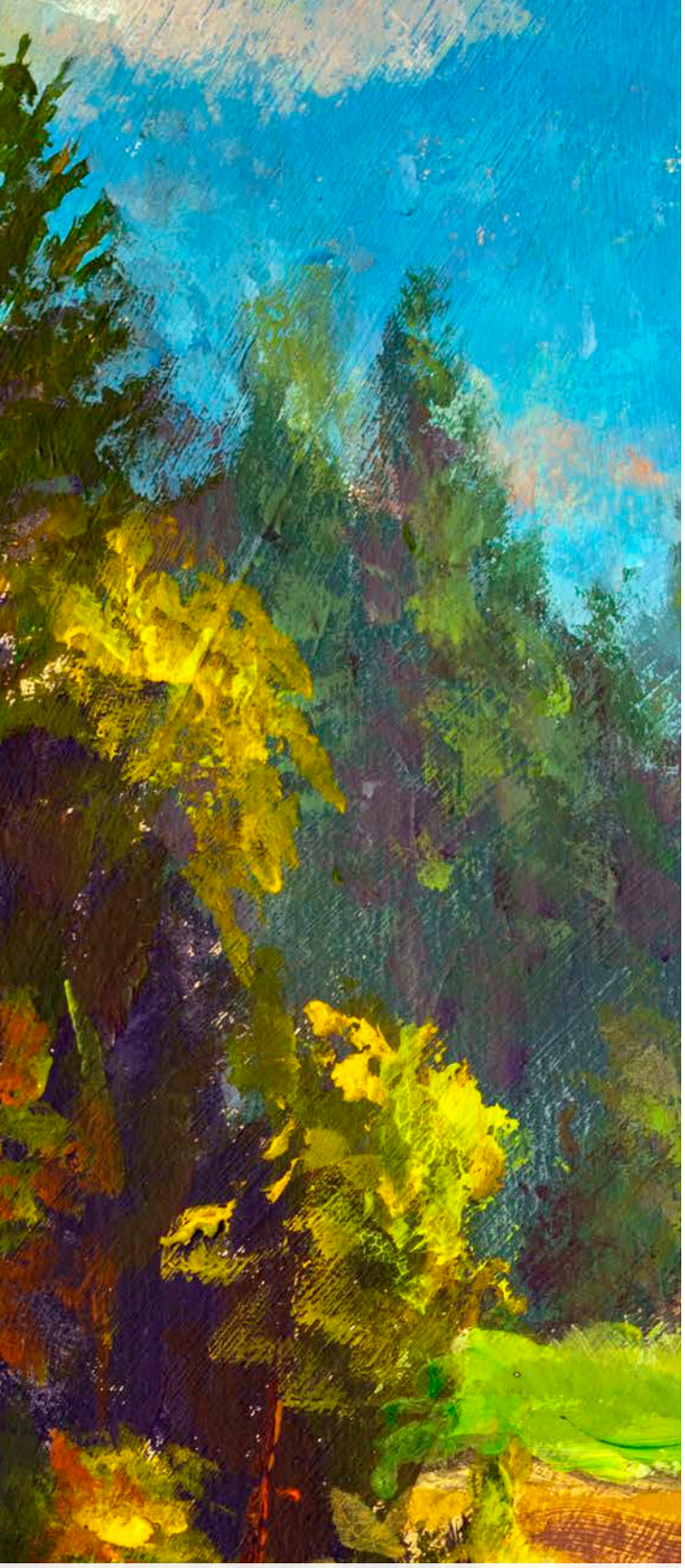
4473

Total number of unique publications 2005-2023

Total Number of Unique[1] Publications Organized by Year, 2005-2023



[1] "Unique" in this bar graph means that a publication was counted only once, even if there were multiple NOSM University faculty members listed as authors in the publication.



Research Office

Responsible Conduct of Research Policy

NOSM University recognizes the importance of research, including innovation and scholarly inquiry, in the advancement of new knowledge. As such, NOSM University requires all research, innovation and scholarly inquiry conducted by its faculty, staff, and learners, and under its auspices be performed in the most rigorous and responsible manner according to the guidelines established by the **Tri-Agency Framework: Responsible Conduct of Research** (2021).

The Research Office developed a Responsible Conduct of Research (RCR) **webpage** to support the newly approved **NOSM University Responsible Conduct of Research Policy**.

NOSM University researchers were encouraged to explore these new additions, including available resources such as the **Network of Networks (N2) RCR Mega Course**, and to reach out to **research@nosm.ca** with any questions.

NOSM University & Laurentian University Research Agreement

Vital Northern health research will continue—and perhaps expand—thanks to **a new deal** reached by NOSM University and Laurentian University. A new research agreement was negotiated by the universities following the establishment of NOSM University as Canada's first independent medical university in 2021.

"Our institutions have always worked closely on Northern health research," said Dr. Sarita Verma, President, Vice-Chancellor, Dean and CEO of NOSM University. "We have an opportunity to continue to leverage each others' strengths to better serve the needs of Northern Ontario."

Laurentian University has collaborated with and supported NOSM University since its inception. Where NOSM University has emerged to play a critical role in Northern and rural medical and clinical research, Laurentian has the systems and supports in place to enable such a high level of research.

NOSM University and University of Waterloo Partnership

Canada is facing a health care crisis due to escalating costs, a shortage of health-care professionals and increasing needs from an aging population. The effects of this crisis are felt more profoundly in remote, rural and Indigenous communities, where the shortage of health-care workers is greater. That's where the University of Waterloo's partnership with NOSM University comes in.

Read more about how the University of Waterloo and NOSM University are **working together** to train and retain health-care professionals in Northern Ontario.

Communications and Support

We're listening! In 2023, the Research Office received 2077 distinct email threads.

We're helping our researchers manage their funding. We've reviewed 34 REB applications and 55 agreements.

We're helping our researchers get funding:

- 5 internal faculty awards ($36,500)
- 27 internal student awards ($134,711)
- 120 funding proposals submitted ($11,379,424)
- 68 external awards received ($6,737,488)
- 147 active awards with $4,906,799.33 dispersed in 2023

We're supporting our research labs: training and troubleshooting (109 hrs), maintenance and repairs (207 hrs), health and safety and process improvement (145 hrs), 16 faculty and students have been onboarded.

We're communicating:

- 22 newsletter issues
- 270 subscribers
- 45.1% open rate

Annual Northern Health Research Conference (NHRC)

The **2023 NHRC** was held in Thunder Bay from Thursday, June 1, to Friday, June 2, 2023. The hybrid format provided opportunities for collaboration and community networking, and highlighted projects underway from students, residents, and community-based researchers.

It kicked off with a pre-conference session titled, *Research at NOSM University: The basics and beyond*. The conference included 24 oral presentations and 43 poster presentations across the following NOSM University research themes and priorities:

- Clinical and Translational Health
- Biomedical and Basic Sciences
- Population and Public Health
- Humanities and Social Sciences

The conference had a total of 118 registrants from varied backgrounds:

- 12 NOSM University students
- 40 non-NOSM University students
- 12 NOSM University Clinical Sciences Division faculty
- 4 NOSM University Human Sciences Division faculty
- 8 NOSM University Medical Sciences Division faculty
- 3 non-NOSM University physicians
- 26 others
- 13 NOSM University staff

Participants enjoyed the keynote address titled '*Thunder Bay's New Urology Research Era: Moving from Bench to Bedside*' by Dr. Hazem Elmansy, Associate Professor, as well as a networking reception hosted by the Dr. Gilles Arcand Centre for Health Equity.

Alexandra Klem was the recipient of the 2023 Dr. Roger Strasser NHRC Student Travel Award. For the second year, the conference included student awards for top oral and poster presentations:

- ***Top Oral Presentation - Undergraduate Student***
  Malcolm Davidson
  "Exploring the Development of a Canadian Frostbite Care Network in Canada: a Qualitative Approach"

- ***Top Oral Presentation - Graduate Student***
  Jenna Gilchrist
  "Influence of Sex Hormones Estrogen and Androgen on Catecholamine Biosynthesis"

- ***Top Poster Presentation - Undergraduate Student***
  Taryn Thompson
  "Multiple exercise bouts increase GLUT4 expression in cardiac tissue following DOX treatment"

- ***Top Poster Presentation - Graduate Student***
  Jillian Zitars
  "Suitability of the Mobile Crisis Intervention Team Model for Northern Context: A Preliminary Analysis"

The 2023 NHRC Scientific Planning Committee thanks all participants for their continued interest in this conference geared towards exploring research activities within Northern Ontario arising from community-based activities.

Clinical Faculty Research - Environmental Scan

NOSM University conducted an environmental scan in order to identify our clinical faculty researchers and recognize their research accomplishments from the last five years (2017-2022).

A Northern Ontario Heritage Fund Corporation (NOHFC) intern was hired to support this environmental scan process. Data was collected from available sources such as the NOSM University faculty publications database, Northern Ontario Academic Medical Association (NOAMA) reports, Local Education Group (LEG) surveys, Thunder Bay Regional Health Sciences Centre (TBRHSC) reports, and available Curriculum Vitaes (CVs) to compile a database that reflects the research activities of clinical faculty members.

The data was analyzed and the results of the environmental scan is available in **English** and **French**.

2023 Timeline

JAN — **RCR Policy Announced**

FEB — **AI North Partnership**

MAR — **NOSM University and Laurentian University Research Agreement Signed**

APR — **Jessica Dougherty accepts one-year contract extension as Research Laboratory Coordinator**

JUL — **Appointment of Dr. Robert Ohle (Heart and Stroke Foundation of Canada/NOSM University Chair in Indigenous and Rural Health)**

AUG — **Hope Lachapelle accepts one-year contract as Research Coordinator**

SEP — **Temerty Foundation donation and naming of the Dr. Gilles Arcand Centre for Health Equity**

NOV — **Linda Liboiron-Grenier accepts continuing position as Research Services Administrative Coordinator**

DEC — **NOSM University and University of Waterloo Partnership**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