

THE SCOPE

Comprehensive Support During CCCs



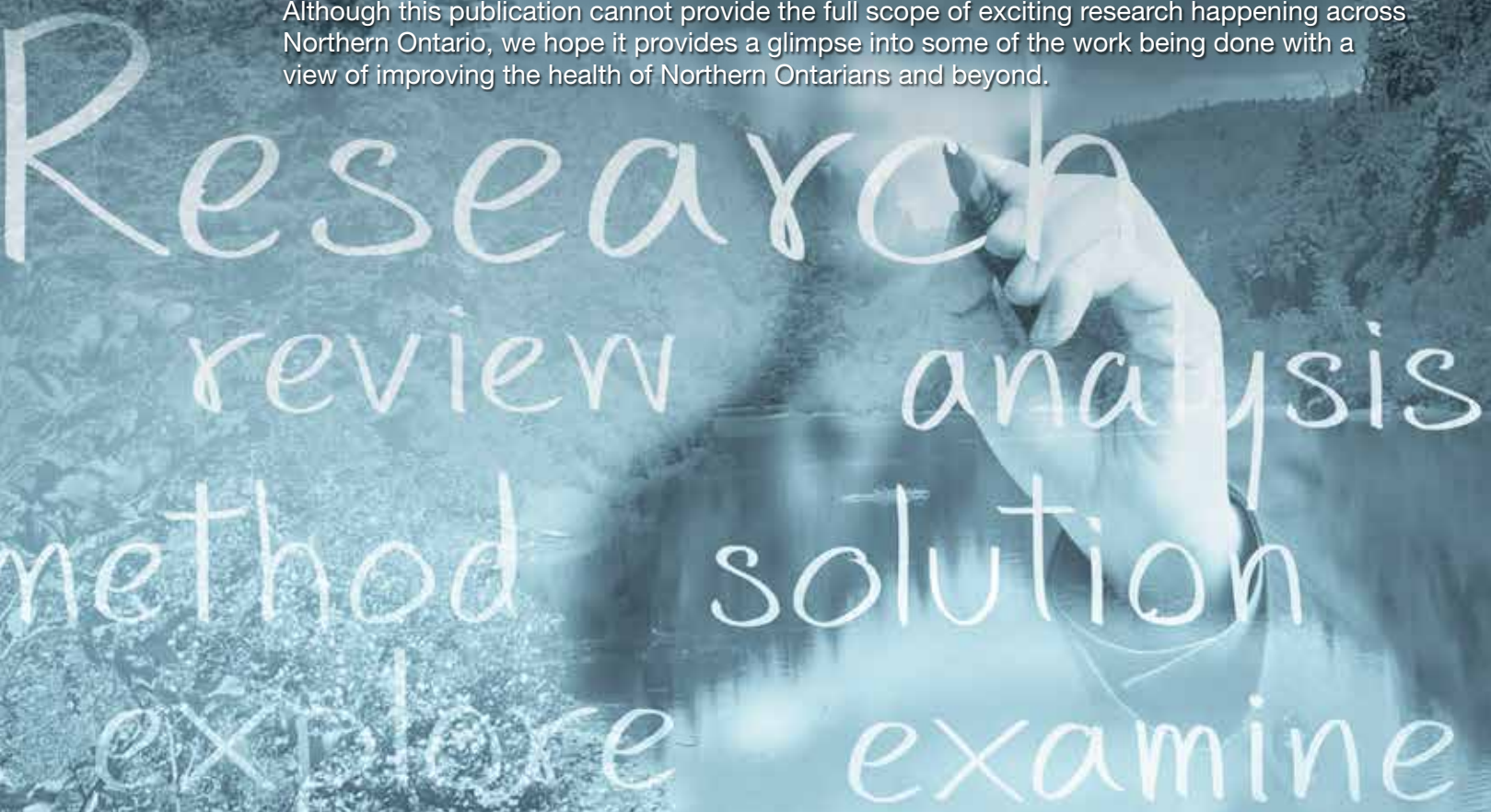
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WELCOME TO *THE SCOPE*

Scope can be defined as: the range of one's perceptions, thoughts, or actions; the geographical or perceived area covered by a given activity; or, a viewing instrument such as a microscope or telescope. In most modern usages of the word scope, there is a unifying theme of examination or investigation.

In this case, **Scope** includes all of these ideas. Research at the Northern Ontario School of Medicine (NOSM) is reflective of the School's mandate to be socially accountable to the diversity of Northern Ontario. As such, studies are being undertaken in a range of subjects including culturally appropriate care for Aboriginal peoples, new drug technologies, cancer screening methods, patient rehabilitation, lakewater quality, and so much more. Subjects being studied are as varied as the geographic area of NOSM's wider campus of Northern Ontario and as diverse as the researchers themselves: faculty members in the School's Human, Medical, and Clinical Sciences Divisions, residents, medical students, a broad range of health-professional learners, and collaborators.

Although this publication cannot provide the full scope of exciting research happening across Northern Ontario, we hope it provides a glimpse into some of the work being done with a view of improving the health of Northern Ontarians and beyond.



The Scope Research Newsletter of the Northern Ontario School of Medicine

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Feedback

We welcome feedback and suggestions about *The Scope*. NOSM is a school for all individuals and communities of Northern Ontario. What stories would you like to read about? Send ideas to communications@nosm.ca.

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WELCOME TO *THE SCOPE*



Dr. Penny Moody-Corbett

Research at the Northern Ontario School of Medicine (NOSM) is reflective of the School's mandate to be socially accountable to the diverse cultures of the region, tackling important questions related to improving the health of the people of Northern Ontario. Research by NOSM's faculty, staff, and learners covers a breadth of topics in clinical, community, and population health; biomedical sciences; environmental health; health education; and, health services.

This second issue of *The Scope* is hot off the press at the same time we celebrate the 10th annual Northern Health Research Conference (NHRC). Each year since 2006, NOSM has been hosting the NHRC in communities across Northern Ontario. The conference—hosted this year in collaboration with Northern College in Timmins—highlights research being done at NOSM, in the North, and beyond.

Celebrating ten years of the Northern Health Research Conference is a testament to the importance of research at the School. The NHRC has provided an occasion for networking each year, and for sharing and learning from each other about the valuable research that's happening right in our own back yard. The NHRC has provided opportunities for professional development, bringing together researchers that have various interests, and inspiring collaboration among like-minded peers.

As I complete my first year as the Associate Dean of Research at NOSM, I'd like to remind you that my team is here to help you with your research. The Research Support Group (RSG) can assist faculty, learners, residents, and staff. We are committed to ensuring all researchers have access to the guidance and support you need to be successful. Please don't hesitate to contact us via email at researchsupport@nosm.ca.

A DECADE OF NOSM RESEARCH

The Northern Ontario School of Medicine has contributed to many changes across the North since opening its doors in 2005. NOSM's 10th anniversary is an opportunity to reflect on and celebrate a decade of research at the School.

In 2012, Dr. Carita Lannér, NOSM Associate Professor, said: "We have ground-breaking, innovative work happening in Northern Ontario. It doesn't all have to happen in Toronto or Ottawa at the big universities. Up here, people have innovative new ideas that we can bring to fruition." Pages eight and nine of this issue of *The Scope* show an overview of the last ten years of research at NOSM.

It's exciting to think where the next ten years will take us.

NOSM CELEBRATES TEN YEARS...

WITH *Thanks*

Thank you | Merci | Miigwetch

With thanks to the many NOSM faculty in Northern Ontario who are engaged in research that contributes to the health of the people and communities of Northern Ontario.

CHIPPING AWAY AT THE SAME ISSUES



Visiting Scholars Discuss Research and Best Evidence for Providing Rural Maternity Care

Both Drs. Jude Kornelsen and Stefan Grzybowski stumbled upon an interest

in rural maternity care almost by accident. For Kornelsen, it was when she moved to Salt Spring Island in British Columbia (BC) in 1999, one year after the regulation of midwifery in Canada. Midwifery services on Salt Spring Island were in question at the time, and many women were forced to leave their community to deliver. For Grzybowski, his passion for rural maternity care was sparked while he was working as a rural family physician on Haida Gwaii, the Queen Charlotte Islands in BC. Should a patient in labour require a caesarian section, she would need to travel four hours to a centre that could provide this service, and that was only if the weather was good enough for the patient to be transported from the island.

Both Kornelsen and Grzybowski (now Co-Directors of the University of BC's Centre for Rural Health Research) asked: Can rural maternity services be provided in rural and remote communities? To answer this question, both looked to research. For the past decade, Kornelsen and Grzybowski have been researching rural maternity services and rural surgical services. First, they looked at the consequences of having women travel to access maternity services, and then began to gather research evidence that suggested ways to improve the delivery of rural services.

"The state of rural health services research is quite interesting," says Grzybowski. "There is a lot of planning and implementation that is based on opinion, based on

someone's best guess about the right thing to do. That's partly due to the fact that there's not much evidence out there about cost evidence or best practices. The way we've taken up our job as Co-Directors of UBC's Centre for Rural Health Research is to imagine what should happen, and to measure these strategies in order to inform the best planning process."

"We're really at a crisis in organizing rural health services in BC, and I suspect in other jurisdictions across Canada as well," says Kornelsen. "We need evidence to help us sort through the best way to provide services that meet the needs of rural residents. We're really passionate about how we can inform policy based on the great evidence we have, so that people in rural areas—in Canada and internationally—can benefit from better services."

These experiences and areas of research expertise led Kornelsen and Grzybowski to be selected as NOSM's second PSI Foundation Visiting Scholars. They will travel throughout Northern Ontario during June 2015 to share their research and expertise in rural BC with NOSM administration and faculty across the North.

"Knowledge is an incredibly powerful way of moving things forward," says Grzybowski. "When you're planning in a vacuum, you often end up in curious places with unanticipated consequences. When imagining pragmatic solutions to rural health service dilemmas, we believe that working together can help us see things that maybe people haven't imagined before. I hope, during our visits at NOSM, we're able to bring a bit of experience from away, which can cause people to gain insights they may not have imagined before."

"We're also looking forward to getting out of our own context, and learning from the folks at NOSM," says Kornelsen. "We're from different parts of the country, but we're trying to chip away at the same issues. We're looking forward to exchanging ideas in the North, as well, and to sharing insights about how we can improve rural services in BC and Northern Ontario."



PSI

PSI FOUNDATION

DEDICATED TO DOING GOOD

The PSI Foundation Can Support Your Clinical Research and Continuing Education

During the Great Depression in the 1930s, many Canadians refrained from seeking medical care because they could not afford to pay the physician for their services. So, in the late 1930s, the OMA began investigating a province-wide, voluntary, prepaid medical care program to ensure that citizens could seek the medical care that they needed. This led to the creation of the Physicians Services Incorporated (PSI), a physician-sponsored prepaid medical care plan. Physicians were paid directly by PSI when subscribers sought their care, rather than charging the patient, who would later be reimbursed. During this process, the physicians willingly forfeited 10 percent of their fee in order to establish a fund for any indigent patient who was unable to pay for their care.

In the 1970s, PSI was faced with an interesting situation. With the implementation of a national medicare program in 1969, insurance for medical care was no longer needed to help people pay for their care. Rather than deciding to return the funds to the doctors that had originally forfeited a portion of their fee, the physicians of Ontario chose to use the money to fund clinical research and education that would better the health of the people of Ontario. With that, the Physicians Services Incorporated Foundation was created.

Since the 1970s, the funding in the coffers of the PSI Foundation has grown to more than \$100 million, even while the organization has issued \$150 million in clinical research and education grants. Now, the PSI Foundation funds research with near future clinical impact for the people of Ontario. In addition, PSI provides funding to develop physician skills in areas identified by the communities for which they care.

“PSI is the most amazing organization that I have ever been involved with,” says Dr. Jim King, President of the PSI Foundation. “We are very passionate about the good PSI has done, for physician careers and the health of Ontarians, and we’re focused on providing good stewardship to ensure that PSI continues to do good in the future.”

In total, PSI has funded \$520,000 to NOSM researchers in support of clinical research or continuing education, and they want to see that number grow.

“We’re very engaged in receiving submissions from NOSM,” says King. “The applications we have received have had a very high percentage of success. We really encourage physicians in Northern Ontario to take advantage of the process, and to apply to PSI for funding for clinical research.”

Some of the many initiatives of the PSI Foundation include:

- › Health research grants
- › Health-care research by community physicians
- › Educational fellowships for practising physicians
- › Resident research grants
- › Resident research prizes
- › PSI Foundation Fellowship for Translational Research
- › The PSI Visiting Clinical Scholar Award

To learn more about clinical research or educational grants provided by PSI, visit psifoundation.org.



IN FOCUS

DR. DOUG BOREHAM NOSM'S DIVISION HEAD OF MEDICAL SCIENCES

The Medical Sciences Division at NOSM is the organizational unit responsible for teaching and research in the basic medical sciences. The faculty members act as discipline experts, give lectures and demonstrations, and facilitate small-group sessions in the undergraduate medical education curriculum, and supervise graduate students and postdoctoral fellows.

Dr. Doug Boreham is NOSM's Division Head of Medical Sciences, as well as the Bruce Power Research Chair in Environment and Health. Originally from Elliot Lake, Boreham has spent the last 29 years conducting health research. In this edition of *The Scope*, we put Dr. Doug Boreham 'in focus' to learn more about his experience as a researcher and the work he is doing to impact the health of the people and communities of Northern Ontario.

Tell us about your area of research.

My research has always focused on the effects of low dose radiation, in terms of cancer risk and other diseases. Much of my research over the last five years has looked at diagnostic radiation. When you go to the hospital and get a CT scan, a PET scan, or a mammogram, what does that mean in terms of your health? We know the benefits of these diagnostics tests that use radiation, as well as the benefits of using radiation to treat disease. But there's still people that worry about the risk of diagnostic tests that use radiation. We're giving around 60 million CT scans a year, and we never did that before. So now, some people are wondering, "do these tests cause cancer?"

What have you found? Does low-dose radiation have negative impact on our health?

Humans have been studying the effects of high-dose radiation on a population for the last 70 years, since the end of the Second World War. Many people thought, "Well, if large doses of radiation are bad, then it must all be bad. We'll just extrapolate from the effects of high-dose radiation to low-dose radiation using a mathematical calculation to extrapolate your risk of cancer from a CT scan based on what we know about the negative health impacts of atomic bombs." But that never made much sense to me.

Our research looks at what actually happens to the body when we're exposed to low doses of radiation. In fact, what we see is that radiation in small doses stimulates modulating effects, which have a net positive effect on the organism in all sorts of ways. For example, we did a lifetime study in cancer prone mice which showed that low doses of radiation through diagnostic CT scans were not harmful at all. In fact, they were beneficial—the mice got less cancer and actually lived longer. The same thing happened with PET scanning.

I've been doing this work for 29 years now, and every experiment I've ever done says that these low doses of radiation basically stimulate your repair systems and make you healthier as an organism.

Why is that? How come radiation is beneficial in small doses?

I've done research where I compare exercise and diagnostic radiation in animal systems. That research has shown that actually exercise and low doses of radiation have the same impact on the body in terms of health. They both create free radicals in the body, and these free radicals stimulate processes—they protect against things like free-radical damage to DNA, mitochondrial damage, and membrane oxidation. Everyone knows exercise is good for you in so many ways, and that exercise actually reduces cancer risk. Basically, both exercise and low doses of radiation slow down processes in the body that are like aging—they stimulate our repair systems and help make us healthier.

What got you interested in this?

I'm originally from Elliot Lake, which is a uranium mining town. I became interested in radiation research when I came to Laurentian University in 1982 to study biology. Everyone says that all radiation is bad for you, and I just didn't buy that—not only because I'm from Elliot Lake, but also because I knew that we are surrounded by natural radiation all the time. I'm radioactive, you're

radioactive. Everything we eat and drink is radioactive. The earth's crust is naturally radioactive, and the sun is constantly blasting us with cosmic radiation. So just by nature of the fact that we live on this planet, we're exposed to radiation. It's not that much, but it can still be pretty significant. So I've spent the last three decades looking at how these low doses of radiation affect us.

I know that you've been doing research with the SNOLAB. Can you tell us about that?

The SNOLAB—SNO stands for Sudbury Neutrino Observatory—is an underground science laboratory. Essentially, it's a clean lab two kilometres underground, which shields the environment from any cosmic radiation—things like protons and neutrinos. After everything we know about low doses of radiation, we thought, "What happens when we take it all away?" So we're going down into the SNOLAB to see how cancer risk is affected in the absence of natural radiation. Our hypothesis, based on what we know about low-dose radiation, is that taking it all away is not good. We believe that the natural radiation around us actually reduces cancer risk. We believe that we still get cancer up here, but that we'd get more if we didn't have radiation.



Located two kilometres below the surface near Sudbury, SNOLAB is an underground science laboratory specializing in neutrino and dark matter physics.

A DECADE OF NOSM RESEARCH



September

NOSM officially opens, welcoming a class of 56 students at Laurentian University in Sudbury and Lakehead University in Thunder Bay.

November 15

The report *Creating a Sustainable Health Research Industry in Northern Ontario* is released. The key theme of the research initiatives will be tackling the questions of importance to improving the health of the people of Northern Ontario.



February

With \$330,000 in funding from Northern Ontario Heritage Fund Corporation and FedNor, NOSM hires 12 research interns to engage in a spectrum of biomedical and clinical research activities supporting faculty from NOSM's three divisions: clinical, human, and medical.



June 1

Algoma University in Sault Ste. Marie hosts NOSM's second annual Northern Health Research Conference.

April 1

The Northern Ontario Academic Medical Association (NOAMA) is established to develop and enhance the academic culture in Northern Ontario. Physician clinical faculty who are interested in undertaking scholarly activity in relation to patient care are able to submit proposals to NOAMA to be considered for funding.

May 29

NOSM at Lakehead University in Thunder Bay hosts the fourth annual Northern Health Research Conference.

2004

2005

2006

2007

2008

2009

April

The Northern Ontario School of Medicine (NOSM) introduces its Associate Dean of Research, Dr. Greg Ross.



March 8

The Heart and Stroke Foundation of Ontario (HSFO) provides NOSM with the first research placement program worth \$240,000 over five years. NOSM medical students will conduct research on health issues of relevance to Northern Ontario while working with an established researcher.



March 31

The Honourable Tony Clement, Minister of Health and Minister for FedNor, officially opens NOSM's state-of-the-art research laboratories with a \$6 million investment. Research will focus on Northern health issues and the unique health concerns facing Northerners.



April 21

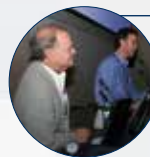
Eight NOSM students receive the first Founding Dean's Summer Medical Student Research Awards. An annual award going forward, the summer research projects will span a broad range of areas, from biomedical studies to social research.

June 2

The first annual Northern Health Research Conference is held at Algoma University in Sault Ste. Marie.

May 31

The third annual Northern Health Research Conference is held at Nipissing University in North Bay.



June 9 - 14

NOSM hosts the inaugural International Conference on Community Engaged Medical Education in the North (ICEMEN). The five-day conference focuses on the practicalities of Community Engaged Medical Education program delivery, including topics of curriculum, program management, faculty development, research, and evaluation.



November 3

NOSM hosts a three-day Partnership Opportunities in Research Gathering in Thunder Bay. Over 100 participants from Aboriginal communities, NOSM, and health research organizations attend this unique event. The first forum of its kind in Canada, the Gathering includes lively debate on a range of topics regarding research involving Aboriginal peoples and their communities.



June 5

The tenth annual Northern Health Research Conference is held at Northern College in Timmins.

August 26

The School and the people and communities of Northern Ontario are creating a Strategic Plan for the School for the years 2015-2020. NOSM's Strategic Plan 2015-2020: Reaching Beyond Extraordinary Together will launch officially in September 2015 to coincide with NOSM's new academic year. The fall will also mark 10 years since NOSM opened its doors.



June 4

Dr. Joe Eibl, NOSM researcher and staff member, receives the Governor General's Gold Medal Award during the spring convocation ceremonies at Laurentian University in Sudbury. Dr. Eibl is one of many graduate students from Laurentian University and Lakehead University working in collaboration with NOSM faculty members in the School's research laboratories.



June 7

NOSM and the North Bay Regional Health Centre (NBRHC) combined their conferences (Northern Health Research Conference and the NBRHC Research Conference) into a single event. The event is held at Canadore College in North Bay.



September 9

NOSM, the Heart and Stroke Foundation, and the Ministry of Training, Colleges and Universities introduces Dr. Sheldon Tobe as the new HSF/NOSM Chair in Aboriginal and Rural Health.



June 10

The sixth annual Northern Health Research Conference is held at the Active Living Centre in Huntsville.

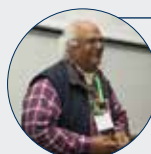
2010 | 2011 | 2012 | 2013 | 2014 | 2015

June 4

The fifth annual Northern Health Research Conference is held at Laurentian University in Sudbury.

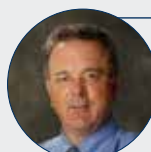
June 22

NOSM launches a new strategic plan intended to guide the School's progress through the years 2010 to 2015. The plan states that NOSM will focus on further developing its research agenda in line with its distributed education model, and continue to broaden the academic experience of its learners, faculty, and staff. These research activities will respect the unique cultural attributes of NOSM's Aboriginal, Francophone, and other culturally distinct partners.



May 10

The seventh annual Northern Health Research Conference is held at Lakehead University in Thunder Bay in conjunction with the 7th Meeting of the Canadian Oxidative Stress Consortium (COSC). The joint conference attracted over 150 delegates from across the country and around the world.



September 1

Dr. Douglas Boreham is appointed NOSM's new Division Head of Medical Sciences. Dr. Boreham brings with him his role as the Bruce Power Research Chair in Radiation and Health.



October 9 - 14

NOSM hosts Rendez-Vous 2012, five world conferences in one, and welcomes more than 850 delegates from nearly 50 countries and six continents. Rendez-Vous 2012 participants engage in thought-provoking discussions related to a shared commitment to the conference's theme of *Community Participation in Education, Research, and Service*.

June 6

The ninth annual Northern Health Research Conference is held at the Sioux Lookout Meno Ya Win Health Centre (SLMHC) in Sioux Lookout. Hosted in the Josias Fiddler Conference Room, NHRC participants were welcomed by SLMHC, the Sioux Lookout First Nations Health Authority, and Lac Seul First Nation.

July 2

NOSM is pleased to announce the appointment of Dr. Penny Moody-Corbett as Associate Dean of Research and Senior Associate Dean of NOSM at Lakehead University in Thunder Bay.



\$94,000 AWARDED FOR MEDICAL STUDENT RESEARCH

This year, 15 NOSM medical students were awarded summer research awards from the Northern Ontario School of Medicine and the Heart and Stroke Foundation (HSF). This is the 10th year that NOSM has awarded the NOSM Dean's Summer Medical Student Research Awards. These awards are open to current NOSM medical students interested in working on a research project under the supervision of a NOSM faculty member. These awards will be remunerated at \$2,000 per month and the students can choose to complete the project in either an eight- or 12-week term. The term of the award must be completed between June and August on a full-time basis (35 hours per week).

Similar to the NOSM Dean's Summer Medical Student Research Awards, the HSF and Toronto-Dominion (TD) Bank are currently funding three Summer Medical Student Research Awards. This is an opportunity for second-year NOSM medical students who have completed their first-year Integrated Clinical Experience (ICE) placements in an Aboriginal community to continue their research work with the community. Again, the students work with a NOSM faculty member, but must also have the support of the community leadership in the Aboriginal community within which the placement will take place. For the HSF/TD Summer Medical Student Research Awards, the medical students' project must address factors related to cardiovascular or cerebrovascular health. These projects are three months in length at \$6,000 per student, with an additional \$6,000 of travel funding per award.

HSF/TD Summer Medical Student Research Awards

- › A project titled *Outcomes of Cardiac Surgery in Aboriginal Patients in Northern Ontario* will be undertaken by **Claire Burrows**, second-year NOSM medical student, with the supervision of Dr. Rony Atoui.
- › **Christopher Olivier**, second-year NOSM medical student, will be looking at the prevalence and rate of chronic kidney disease in the Sioux Lookout area with Dr. Sheldon Tobe.
- › Second-year NOSM medical student **Meagan Roy** will be working with Dr. Sheldon Tobe on a project titled *Lifestyle Considerations on Rates of Hypertension and Diabetes in Mattagami First Nation*.

NOSM Dean's Summer Medical Student Research Awards

- › Third-year NOSM medical student **John Coccimiglio** is undertaking a project titled *Analysis of the Content of Electronic Health Messages Sent via an Electronic Health Record in a Rural Practice* with the guidance of Dr. Adam Moir.
- › **Daniel Dalcin**, second-year NOSM medical student, is working on a project titled *Antibiotic Use and Clinical Infection Tracking in the Sioux Lookout Region of Northwestern Ontario* with the supervision of Dr. Michael Kirlew.
- › *Critical Discourse Analysis of the Evolution of Psychiatric Diagnoses in the Diagnostic and Statistical Manual of Mental Disorders* is being studied by **Geoffrey Leblond**, first-year NOSM medical student, with the supervision of Dr. Stacey Ritz.
- › *Understanding the Intersection of Mental Health and Opioid Addiction Treatment* is the title of first-year NOSM medical student **Esa Leinonen's** project, which will be supervised by Dr. David Marsh.
- › **Tin Li**, second-year NOSM medical student, is being supervised by Dr. Leslie Sutherland while undertaking a project titled *PCR Analysis of RNA BP Expression in Lung Cells*.
- › First-year NOSM medical student **Alana Rawana** is undertaking an analysis of current and forecasted patient visits to the emergency department and the effect on hospital admissions under the guidance of Bruce Weaver.
- › *Molecular Mechanisms Involved in Hypoxia Regulation of Adrenaline Synthesis* is being studied by first-year NOSM medical student **Melissa Stacey** with the supervision of Dr. TC Tai.
- › Second-year NOSM medical student **Leandra Stringer** will be working with Dr. Anne McDonald on a project titled *Development and Evaluation of an Electronic Hospitalist Handover Tool to Improve Patient Care and Reduce Medical Errors*.
- › *Excessive Weight Gain in Pregnancy: A Growing Problem in Our Communities* will be studied by first-year NOSM medical student **Michelle Taylor** with Dr. Karen Splinter as her supervisor.
- › **Joelle Thorgrimson** will be working with Dr. Marina Ulanova on a project titled *Natural Immunity Against Haemophilus Influenzae Type A (H1a) in a Population with a High Incidence of Invasive H1a Disease*.
- › First-year NOSM medical student **Brooke Wilson** will be undertaking a project titled *Suicide Training: Changing Attitudes and Actions - An Evaluation of SafeTALK Training for NOSM Students* with Dr. Eva Neufeld.
- › The effect of a colon cancer screening program on incidence of and stage at diagnosis of colon cancer in Wawa will be studied by **Kristen Zahn**, second-year NOSM medical student, with the guidance of Dr. Mike Cotterill.

A DRIVING FORCE BEHIND ROAD SAFETY

Those who live in Northern Ontario are often no strangers to driving. For some, it's nothing to drive four hours to a larger city, even for common essentials like furniture or clothing. With so much geography to cover, it's no wonder that Northern Ontarians spend a lot of their time on the road.

Driver safety is a topic that some NOSM researchers have taken up as one of their primary areas of focus. NOSM Human Sciences faculty members Dr. Michel Bédard, Sacha Dubois, and Bruce Weaver are members of the Centre for Research in Safe Driving at Lakehead University, and have dedicated their time and skills to trying to conduct research about what makes a safe driver. Of their several research projects, Bédard, Dubois, and Weaver have been investigating how different factors affect a driver's ability to perform the task safely.

"If you ask the average person on the street about impaired driving, they'll automatically think about impairment with alcohol," says Weaver. "But driving researchers nowadays think about impairment much more broadly than that, in terms of the use of drugs, but also fatigue."

Among other factors, Bédard, Dubois, and Weaver—along with their colleagues at the Centre for Research in Safe Driving—have spent some time looking at the effect of benzodiazepines on driver safety. Benzodiazepines are part of a type of medication known as tranquilizers, which are commonly prescribed as sleep aids and muscle relaxants that depress the central nervous system. The question they have asked is: how safe is it for people to drive when they take benzodiazepines?

In order to understand this, Bédard, Dubois, and Weaver analyzed data from the last 20 years in the Fatality Analysis Reporting System (FARS), a database maintained by the United States government. (Dating back to the 1970s, FARS holds information about every motor vehicle crash on a public roadway in the United States that involved at least one fatality.) To determine whether or not benzodiazepines were associated with responsibility for the crash, the team compared drivers with and without benzodiazepines in their system (while controlling for other relevant variables), and found that those with benzodiazepines in their system had significantly greater odds of having committed one or more unsafe driving actions (for example, failure to keep in the proper lane) prior to the crash.

"Thinking about impairment in driving is relevant in places like Northern Ontario, where drivers may be on the road for many hours," says Weaver. "Whether it's as a result of prescribed medication or even fatigue, it's important for drivers to think about how safe they are before hitting the road for a long trip."



Bruce Weaver

COMPREHENSIVE SUPPORT DURING COMPREHENSIVE COMMUNITY CLERKSHIPS



Dr. Jennifer Swerdlyk

NOSM Resident Assesses Symptoms of Anxiety and Depression in Third-Year NOSM Students

According to recent scholarship, medical students experience depression, burnout, and mental illness at a higher rate than the general population.¹ As someone with an interest in supporting mental health, these findings caught the attention of Dr. Jennifer Swerdlyk, NOSM alumna and current NOSM Family Medicine resident from Thunder Bay. Her interest in mental health services was sparked during her nursing training and subsequent career prior to entering medical school, leading her to think about how NOSM medical students are coping with the stress of their studies.

During her two years of residency at NOSM, Swerdlyk undertook a research project to assess whether or not NOSM medical students experienced symptoms of depression and anxiety during their third year of medical school, while they live and learn in mid-sized communities in Northern Ontario. She hypothesized that this third year away, known as the



Comprehensive Community Clerkship (CCC), was a time of increased stress for NOSM students who leave their families, friends, classmates, and systems of support behind during their eight months in a new community. In addition, Swerdlyk felt that the stress of clinical situations and high-stakes evaluations was exacerbated by heightened familial and financial stress caused when students had to support two residences—one of themselves in their new community, and one in their home city for their family.

“We assessed medical students four times during their CCC and we did see a clinically and statistically significant increase in depression and anxiety scores from the first assessment in August to the second assessment in November,” says Swerdlyk.

Contrary to other studies that have assessed longitudinal symptoms of anxiety and depression in medical students, Swerdlyk then saw a decline in symptoms during the third interval in February, likely because by this time, students had acquired coping strategies in their CCC environments, and learned what resources are available to them in their community. Although the results from the fourth and final survey after completion of the CCC

placement have yet to be analyzed, Swerdlyk suspects there will be a continued downward trend.

During the study, Swerdlyk asked students what could make their time on their CCC easier. Their

recommendations included a more in-depth orientation to their new community, a list of up-to-date mental health resources available to them within the community, a less full schedule for clinical work in the beginning to reduce feeling overwhelmed, and more flexibility with preceptors when it came to health appointments. They also recommended having a physician (that is not a preceptor) in the community assigned to their care, when possible.

“ONE OF THE PURPOSES OF THIS STUDY WAS TO PROVIDE FEEDBACK TO NOSM ABOUT HOW THE SCHOOL CAN FURTHER SUPPORT STUDENTS DURING THEIR CCC.”

“One of the purposes of this study was to provide feedback to NOSM about how the School can further support students during their CCC,” says Swerdlyk. “I know that the staff at NOSM are very invested in their students doing well, and I think they are also quite interested in hearing about students’ perceptions and experiences. I’m looking forward to sharing these findings with NOSM staff, to see if students’ recommendations can be implemented to support future third-years during their CCC placements.”

1. Schwenk TL, Davis L, Wimsatt LA. Depression, Stigma, and Suicidal Ideation in Medical Students. JAMA. 2010; 304(11):1181-1190. doi:10.1001/jama.2010.1300.



THE WAY OF THE FUTURE

NOSM Faculty Researches Telepractice in the North

One of Northern Ontario's claims to fame—its vast and alluring geography—can also be one of the most substantial barriers to delivering health services when paired with the region's low population density. Training learners from Northern Ontario in Northern Ontario—as NOSM does—has been a successful strategy in addressing the health professional workforce shortage that many Northern Ontario communities have faced for years. But it's not the only strategy for increasing access to health care in the North.

Dr. Emmanuel Abara, NOSM Assistant Professor in Urology, believes strongly that telepractice will play an important role in providing patient care in the future, especially in rural and remote areas. Abara is the Director of the Richmond Hill Urology Practice and Prostate Institute, and serves as a consultant urologist in many Northern Ontario communities such as Hearst, Kapuskasing, Smooth Rock Falls, Iroquois

Falls, Cochrane, Matheson, and Kirkland Lake. His interest in telepractice dates back to the 1990s, but really took off in December 2006 when he collaborated with the Ontario Telemedicine Network (OTN) to create the first community office-based urology telemedicine studio in Ontario.

Now with a wide range of definitions, telemedicine uses modern information technology such as videoconferencing to provide patient care, which can include patient consultation and management of care plans. Thanks to the growing use of technology in providing care, telepractice provides timely diagnosis and management, efficient use of health-care provider and patient time, reduced travel expenses, reduced impact and inconvenience on relatives, and most important of all, increased access to health services.

"NOSM is a twenty-first century medical school that is driven by technology," says Abara, who sees telepractice as a perfect fit with NOSM's activities. "Telemedicine is assisting



Dr. Emmanuel Abara

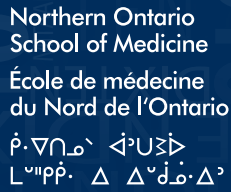
individuals like me to improve access and quality of care for their patients, and I believe telepractice will change the way that we deliver care in the future.”

Currently, Abara is researching the rate at which telemedicine is being taken up in Canada, along with the accompanying case law involving the use of telemedicine. Abara’s review of the literature and law found that telemedicine has had a growing adoption rate in Canada, with a variety of guidelines and policies around its use with various Canadian licensing bodies. In addition, Abara has compiled much data and information about the benefits and challenges of using telepractice.

“Although telepractice has its own costs and nuances, I believe that it can substantially reduce the estimated \$62 million currently being spent on travel grants to patients from Northern Ontario and remote communities for visits to specialists in big cities,” says Abara. “It can significantly

decrease the expected annual 12,000 visits to emergency departments from long-term care. Not only this, but I believe that a province-wide telepractice strategy has the potential of saving on the anticipated annual \$170 million costs for unscheduled emergency department visits, walk-in clinic visits and/or hospital admissions due to unmanaged chronic disease.”

Believing telepractice to be “the way of the future,” Abara is currently teaching NOSM learners to provide care via telepractice in order to prepare them for caring for patients in rural, remote, and Northern communities.



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Thanks



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