



UNIVERSITY OF MANITOBA

ResearchLIFE

SUMMER 2021 | VOLUME 2

EXPERIMENTAL EQUITY

Why sex matters in
biomedical research

GETTING PAST THE BARRIERS

Seeking public transit equity

INNOVATING DIVERSITY EDUCATION

A new twist on
2SLGBTQ+ awareness

NOT SO SWEET FOOD POLICIES

Investigating inequalities
in law making

Message

FROM THE VICE-PRESIDENT
(RESEARCH AND INTERNATIONAL)



THE PAST YEAR HAS SHONE A LIGHT on the many inequalities that exist in our society. The University of Manitoba (UM) academic community is committed to embedding the principles of equity, diversity and inclusion (EDI) in every aspect of our research, teaching and service. UM President Michael Benarroch recently released the EDI Task Force Final Report, which will

guide our university's path forward in a meaningful way.

In May, the world learned of the 215 children whose remains were found at the site of the former Kamloops Indian Residential School. Words from Stephanie Scott, executive director of the National Centre for Truth and Reconciliation are shared within this issue. "There is a common theme of 'how could this happen?' in the questions raised. The answer is complex – rooted in racism and unjust policies."

Also in this issue, our feature stories highlight the scientific, creative and scholarly investigations of faculty members addressing inequities. Two newly appointed national research chair holders—Neeloffer Mookherjee and Robert Mizzi—undertake their investigations in very different realms, but with a shared purpose of creating equity. Researchers Orly Linovski and Natalie Riediger are each exploring inequities that impact the public in the area of public transit and food policies, respectively.

New NSERC President Alejandro Adem provides Insights into how EDI is essential in fostering and growing research excellence in Canada.

Much work remains to be done to ensure equity for all in our society, but with knowledge and a commitment of transparency, we can move forward to achieve this goal.

—Digvir S. Jayas, OC, PhD, DSc, PEng, PAg, FRSC





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Reimagining what archives can be, and do

The National Centre for Truth and Reconciliation (NCTR) is reimagining what its archives can be, and do, as it undertakes an ambitious project to restructure and decolonize its data, thanks to new funding (\$2.4 million from the Canada Foundation for Innovation's Innovation Fund).

Raymond Frogner, head of archives at NCTR leads the national project team set to rebuild the centre's digital architecture.

"The materials held within the Centre are of primary importance to Canada's future and I commend the NCTR on their efforts to reimagine how their archives can better serve all Canadians. Their project is a paradigm shift," says Catherine Cook, vice-president (Indigenous) at UM. "The University of Manitoba is honoured to support the work of the NCTR."

Currently, NCTR has access to roughly 5 million documents, siloed in various bureaucracies of government and church offices. The information was originally created by these institutions to meet their colonial needs and there was never a need or desire to connect the data points

in ways meaningful to Indigenous communities. This new project will take on the herculean task of finding the narrative held within these documents. It will shift the focus away from the institutions and onto the individuals: future archive users, for instance, will be able to follow

one student from school, to hospital, to school, and anywhere else they were shuttled about by settlers.

"The work to be done through this grant is so important, not only because it preserves our words, but it will make them more available to all, including future generations. It is one crucial step we must take towards ensuring this history is not repeated."

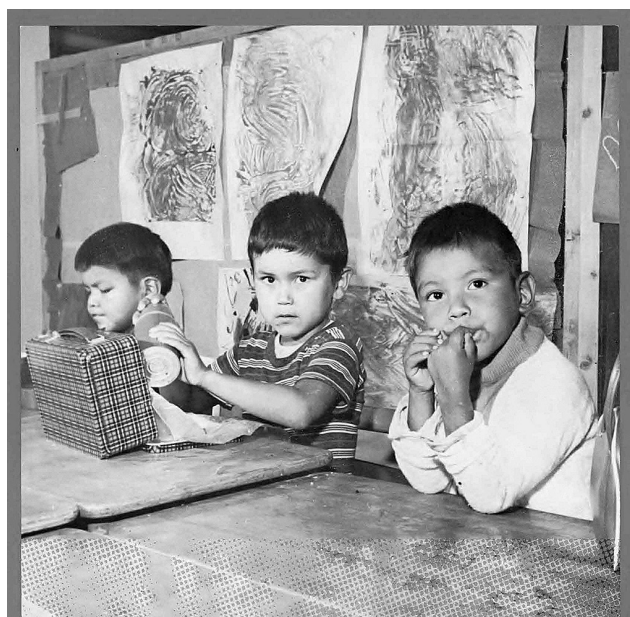
"Residential schools were a social engineering project of the federal government to basically erase Indigenous cultures from the Canadian landscape," says Frogner. "In one sense, the records held by NCTR are very much the institutional, administrative records of the colonial operation of these residential schools... But these records are more than the administration records

of schools. They record some of the most profoundly important events in a child's life, and to bring Indigenous voices to them, is to decolonize them."

This project will take four years to complete and it will maintain ongoing engagement with Indigenous communities as the projects evolve. It includes many team members from multiple institutions including the University of Manitoba, the First Nations Information Governance Centre, the University of British Columbia, the University of Winnipeg, Ryerson University, and the National Film Board of Canada.

"There was a time when we Survivors did not speak of our experience at Residential School," says Levinia Brown, NCTR Governing Circle member and Survivor. "Things are starting to change and we must honour those voices that were brave enough to share their pain. The work to be done through this grant is so important, not only because it preserves our words, but it will make them more available to all, including future generations. It is one crucial step we must take towards ensuring this history is not repeated."

The project will create a new international benchmark in cultural heritage policy, Indigenous rights management, Indigenous research and education methodologies, and Indigenous perspectives on IT development.



Lunch-time and small boys at kindergarten class held in Alberni Indian Residence, Alberni, B.C.

— Berkley Studio

Most images in NCTR's archives only have the viewpoint of the colonists attached to them, as shown in this image. The new digital architecture project will rectify this by having Survivors explain the context of the photos, providing their voice and perspective. // Image: NCTR

215 Innocent Children



The remains of 215 innocent children were found in unmarked graves on the former site of the Kamloops Indian Residential School. The horror, anger and grief shared collectively by Indigenous people across Turtle Island is as raw as it is heavy. In our grief we hold ceremony, we bring little shoes to the steps of the perpetrators, we pour out our shared trauma on social media, we share contact information for crisis lines, we lower flags and turn the country orange.

The mass gravesites of precious children whose lives were cut tragically short because of the residential school system, like those recently uncovered on the traditional territory of the Tk'emlúps te Secwépemc people, have only been the subject of initial conversations with the Canadian government. This must change.

As Executive Director of the National Centre for Truth and Reconciliation (NCTR), the calls continue from media and they did not slow in what would typically be four days of mourning for some Indigenous Peoples in Treaty One where the Centre is located. There is a common theme of 'how could this happen?' in the questions raised. The answer is complex — rooted in

Photo used with the permission of Deschatelets Archives.

racism and unjust policies, but as the former Manager of Statement Gathering during the Truth and Reconciliation Commission, I am not surprised this truth has finally come to light.

For years Survivors and their families shared lived experiences of loved ones who went missing. Some students stated they witnessed the death and murder of children at residential schools. Many parents were never notified of their child's passing, nor were they told where their children were.

For years Survivors and their families shared lived experiences of loved ones who went missing. Some students stated they witnessed the death and murder of children at residential schools. Many parents were never notified of their child's passing, nor were they told where their children were.

For many, the Truth and Reconciliation Commission (TRC) was the first time Survivors and families could confront these questions in a safe space where there was common understanding. Sadly, it was the first time for many that they were believed and listened to.

As a mother, grandmother, and Auntie, the idea of 215 children discarded without the intention of being discovered is an unthinkable horror that now cuts into our news headlines. As technology becomes increasingly available to find the missing, what was once hushed discussions and painful memories is undeniable truth for the world to see.

The above is an excerpt written by Stephanie Scott, executive director of the National Centre for Truth and Reconciliation.

To read the full statement visit:
nctr.ca/215-innocent-children



Best of the Best



Presenting the 2020 recipients of the Terry G. Falconer Memorial Winnipeg Rh Institute Foundation Emerging Researcher Awards. These exemplary UM faculty members are in the early stages of their careers and have displayed exceptional innovation, leadership and promise in their fields of research, scholarly work and creative activities.

1

APPLIED SCIENCES

Noman Mohammed (computer science) addresses data privacy and security issues for emerging technologies. Within this broad theme, he works in three subareas: privacy data sharing, secure data integration and secure computation on encrypted data. Mohammed has designed a number of data-sharing systems, where he has demonstrated through analysis and evaluations, how techniques from cryptography, machine learning and computer systems can be applied to significantly improve privacy protection for different application scenarios such as healthcare, location-based services and social networks.

2

CREATIVE WORKS

Katherine Boyer (School of Art) Boyer's art and research is entrenched in Métis history, material culture, architectural spaces (human made and natural), which encompass personal and family narratives. Her works often explore boundaries between opposing elements as an effort to better understand both sides of a seemingly dichotomous identity (of being Métis and Settler). The results are long, slow and considerably laborious processes that attempt to unravel and better understand history, environmental influences and personal memories.

3

HEALTH SCIENCES

Christine Kelly (community health sciences) is a qualitative policy researcher who is internationally recognized for her work

on directly-funded home care, championed by disability activists and their supporters as empowering and flexible. Her research delves into such questions as how can we design home care policy and services to enable diverse older people and people with disabilities to not just remain at home, but to thrive. In Canada, it is generally used by a small proportion of home care clients and is widely preferred by younger people with disabilities.

4

HEALTH SCIENCES

Jillian Stobart (College of Pharmacy) studies brain astrocytes and pericytes. These cells are wired within brain circuits where they have a role in communication. They also contribute to brain blood flow to ensure proper energy supply. The overall goal is to define how astrocytes and pericytes work in a normal healthy brain and how they change in aging and in models of Alzheimer's disease. This work will result in a better understanding of brain diseases and hopefully new treatments that improve patient outcomes in the future.

5

INTERDISCIPLINARY

Natalie Riediger (food and human nutritional sciences) conducts research that contributes towards improved food security and health equity. Much of her research is also focused on, and in partnership with, Indigenous communities, who experience a disproportionate burden of food insecurity in Canada. She utilizes a variety of different research methods to suit the research questions

that are of interest to her and the communities she works with. She applies theories of food security to policy or health issues not typically considered 'food security issues', such as sugar-sweetened beverage taxation or dietary gluten avoidance.

6

NATURAL SCIENCES

Kenneth Jeffries (biological sciences) studies aquatic ecosystems being affected by climate change, pollution and habitat destruction in order to understand how different species and populations respond to changing environmental conditions. He seeks to understand the cellular responses to environmental stressors in species of significant conservation concern (i.e., fishes, marine invertebrates) by determining sub-lethal stress thresholds that identify when stressors become detrimental to species.

7

SOCIAL SCIENCES

Ee-Suel Yoon (educational administration, foundations & psychology) is leading scholar in the critical policy study of educational privatization and marketization. Her research has examined market-based reforms and their (un)intended negative impact on equity and diversity. Her research with historically marginalized social and Indigenous groups has shown that the reforms have had adverse effects on their families and children. Yoon's research is illuminating the impact of parental choice and programs of choice, including their impact on the stratified educational opportunities, experiences and outcomes of diverse learners.

Transformative Change-Maker



EACH YEAR IN CANADA, MORE THAN 10,000 CHILDREN ARE physically assaulted by their caregivers. In most cases, the violence is inflicted as punishment for a perceived misdeed on the part of the child. In some cases, the punishment ends in children's deaths. During the pandemic, children have become increasingly vulnerable as families have become more isolated and stress levels have escalated.

Enter Joan Durrant, a professor of community health sciences at the Max Rady College of Medicine, a globally known and respected researcher on violence against children. She is the recipient of the 2020 Dr. John M. Bowman Memorial Winnipeg Rh Institute Foundation Award in recognition of her more than 30 years of research that sought to understand and prevent the most common form of violence against children around the world – corporal punishment.

“The human and economic costs of violence against children are immense. My research demonstrates that the combination of law reform and parent support can have a dramatic impact at a societal level. I hope that governments will come to understand this and act to protect children and support families.”

She made the first of many trips to Sweden to understand how a society can think so differently about children and build legal and policy structures based on children's rights to protection and dignity.

Durrant became interested in the phenomenon of corporal punishment early in life.

“I did not experience it [corporal punishment] as a child, so I was very distressed when I learned that other children were being hit by their parents and strapped by the school principal and no-one was acting to protect them,” says Durrant. “As a graduate student, I learned that Sweden had prohibited all corporal punishment of children in 1979. I was amazed by this and became driven to find out how this was accomplished and what impacts it had.”

Since then, 61 more countries have prohibited all corporal punishment of children.

Durrant created a parenting program to support parents who want to shift away from a punitive approach and endeavor to teach their children in constructive, health-promoting ways. Her and her team have travelled to all regions of the world to implement this program.

“Everywhere we go, parents are overjoyed to learn that there is another way. Working with parents and community agencies in such highly diverse contexts has made me optimistic that we can change the world,” says Durrant.

Her research has uncovered the colonial roots of Canada's law allowing punitive violence against children and the law's power in perpetuating these acts: Durrant co-edited *Decolonizing Discipline: Children, Corporal Punishment, Christian Theologies, and Reconciliation* (University of Manitoba Press, 2020).

When asked about what the future holds for her, she says, “I hope that my research will bring change in Canada. I will continue doing all that I can to move this issue to the forefront. The human and economic costs of violence against children are immense. My research demonstrates that the combination of law reform and parent support can have a dramatic impact at a societal level. I hope that governments will come to understand this and act to protect children and support families.” **IR**

To learn more about Durrant's parenting program, visit positivedisciplineeveryday.com

Ideas Incubator

BY AMBER OSTERMANN

THE NEW CENTRE FOR SOCIAL SCIENCE RESEARCH AND Policy—or CSSRP for acronym lovers—opened earlier this year in the Faculty of Arts. The centre will provide training and professional development, help to advance public knowledge of social science research and policy, provide expert consultation to researchers of all levels and offer opportunities for social science research to maximize its impact on policy development.

“CSSRP will not only be an ‘incubator of ideas’ but it will also act as a forum to build partnerships, assisting researchers with fundraising, outreach and the building of further research networks,” says Tracey Peter, acting academic director.

“We strive to be a leader in social science research and policy by providing interdisciplinary training, consultation, support, shared infrastructure, promotion and collaboration at UM and to the wider community.”

Academic researchers, students, private industry and non-profit organizations are increasingly interested in using social science research methods in their own work, such as administering surveys, conducting interviews and focus groups and designing program evaluations. However, many of these groups have not had the opportunity to receive training in these methods and may not have had the time

to become experienced through the usual channels, such as university classes or degrees.

“The centre aspires to address this gap by offering social science and policy research expertise to those who need it, including collaborating with university and community members and organizations to conduct new research projects,” says Jennifer Dengate, CSSRP’s first director. They’ve been busy so far since their opening, partnering to offer both skill-building workshops for community-based researchers and Qualtrics® training. This summer they will host a sure to be popular series for researchers on grant development and writing.

Other objectives for the centre include fostering increased knowledge and application of Indigenous research methodologies, or ways of knowing, and the development of evidence-based, actionable equity, diversity and inclusion (EDI) assessments for organizations. The CSSRP advisory board will help to further these goals.

CSSRP is eager to engage with private industry and non-profit organizations across Winnipeg, Canada and internationally. Connecting with UM alumni now working in the industry is an important goal to both support them in their current work and also learn from their experiences.

Work is underway on a new certificate program in social science research and policy, offering hands-on skills training that will help to increase the certificate holder’s employability. The program will be flexible, offering everyone the option of participating in individual workshops if they have a specific interest or working towards completing a full certificate.

“We strive to be a leader in social science research and policy by providing interdisciplinary training, consultation, support, shared infrastructure, promotion and collaboration at UM and to the wider community,” says Dengate. **IR**

Interested in being a CSSRP research affiliate? UM faculty, external individuals with academic affiliations and organizations are welcome. Email cssrp@umanitoba.ca

Fostering Research Excellence



BY PROFESSOR ALEJANDRO ADEM, PRESIDENT
OF THE NATURAL SCIENCES AND ENGINEERING
RESEARCH COUNCIL OF CANADA (NSERC)

Research can only be excellent, innovative and impactful when it benefits us all. In the minds of the presidents of the three federal research granting agencies, there is no doubt that equity, diversity and inclusion (EDI) foster research excellence.



A S SUCH, WE DEVELOPED, UNDER THE LEADERSHIP of the Canada Research Coordinating Committee, the Tri-Agency EDI Action Plan. This plan outlines actions needed to increase fair access to research support and to promote equitable participation in the research system. In addition, the Indigenous strategic plan, *Setting new directions to support Indigenous research and research training in Canada*, guides our efforts.

We recognize that First Nations, Inuit and Métis are rights-holding as First Peoples of Canada and initiatives to support Indigenous research and research training should be developed through distinctions-based approaches.

It is worth highlighting that the COVID-19 global pandemic and the increased recognition of systemic racism have reinforced the importance of continuing to embed EDI considerations into tri-agency programs, policies and practices.

THE CANADIAN INITIATIVE IS DESIGNED TO ENCOURAGE ACTIONS IN POST-SECONDARY INSTITUTIONS TO ADDRESS BARRIERS FACED BY UNDERREPRESENTED GROUPS. THE UNIVERSITY OF MANITOBA IS AN AFFILIATED INSTITUTION OF THE PROGRAM AND A PROUD SIGNATORY OF THE DIMENSIONS CHARTER.


The granting agencies, together with two other Canadian federal research funders, signed the San Francisco Declaration on Research Assessment (DORA) recognizing that citation statistics as a metric to assess academic impact can over-value publication and devalue other forms of expertise and experience. This, in turn, can marginalize some scholars, especially women, Indigenous Peoples (First Nations, Inuit and Métis), persons with disabilities, members of visible minority/racialized groups and members of 2SLGBTQ+ communities.

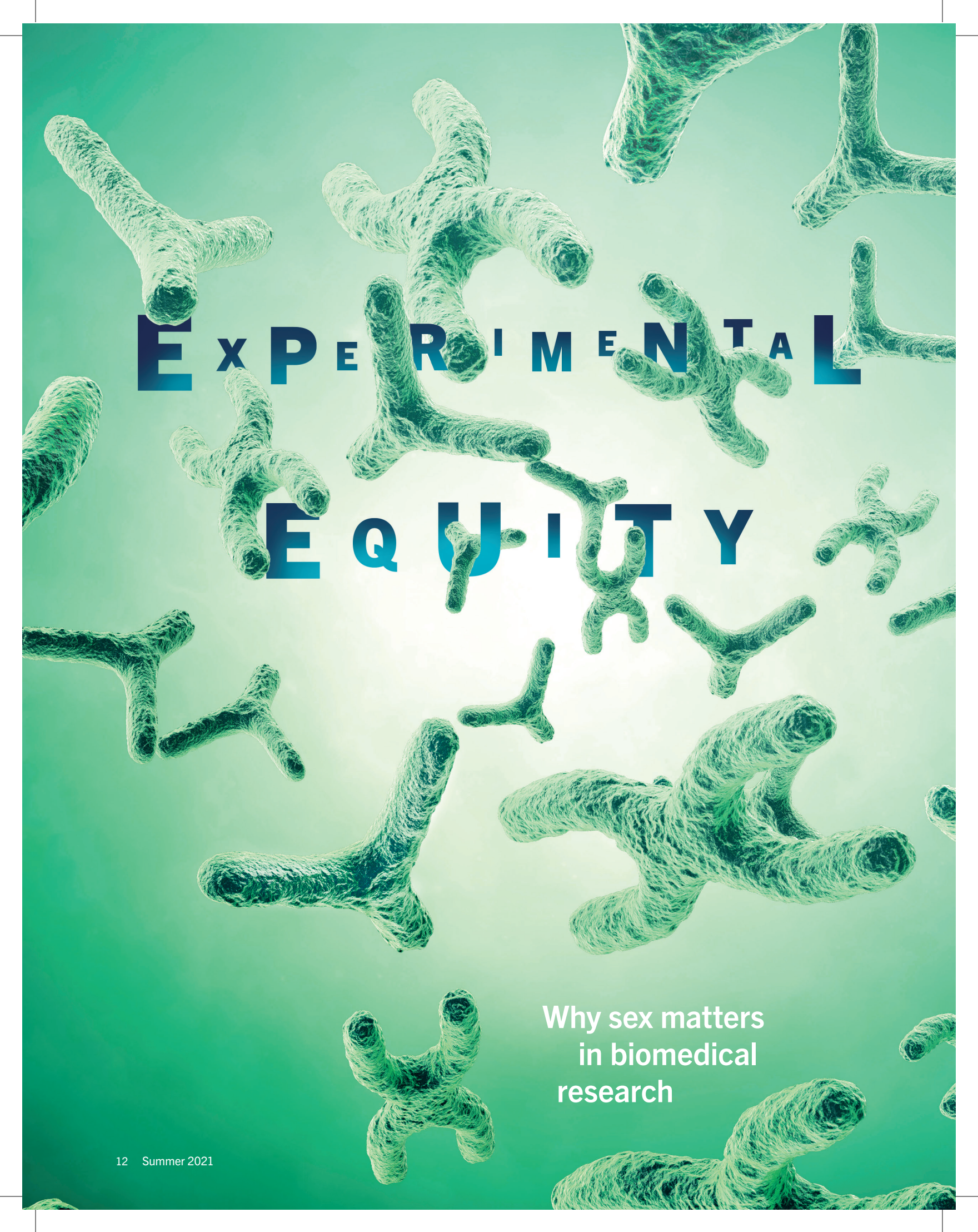
As a mathematical scientist, I am drawn to numbers and I cannot stress enough the importance of establishing a good baseline to inform decisions. Disaggregated data helps reveal diversity gaps and track progress against measures of equity, diversity and inclusion. All institutions benefit from collecting and analyzing disaggregated data as a critical tool toward dismantling persistent systemic barriers and improving equitable representation of all communities. Since 2018, the granting agencies have used the

self-identification questionnaire to gather data from individuals who are applying for funding and this initiative will be expanded in the coming year to evaluation and governance committee members.

I strongly believe that it will take collective action across the research ecosystem to produce a deeper change and achieve a truly inclusive culture. Many post-secondary institutions across Canada are already taking important steps to increase EDI in their environment.

In this regard, I want to recognize the leadership of the University of Manitoba and its very own Vice-President, Research and International, Dr. Digvir S. Jayas. When assuming the interim position as President of NSERC, he established a special ad hoc committee on EDI. This now permanent standing committee is instrumental in developing inclusive policies for the benefit of the whole natural sciences and engineering research community. During his time at the helm of NSERC, he also supported the development of the tri-council pilot program *Dimensions: equity, diversity and inclusion Canada*. The Canadian initiative is designed to encourage actions in post-secondary institutions to address barriers faced by underrepresented groups. The University of Manitoba is an affiliated institution of the program and a proud signatory of the Dimensions charter.

An equitable, diverse and inclusive research ecosystem won't happen overnight but our individual actions are part of the solution. Whether we are conducting research, studying at a post-secondary institution, developing policies, or administering programs, we all have an important role to play in ensuring that Canada's research system supports and values participation by all. 



ExP**E**R**I**M**E**N**T**A**L**

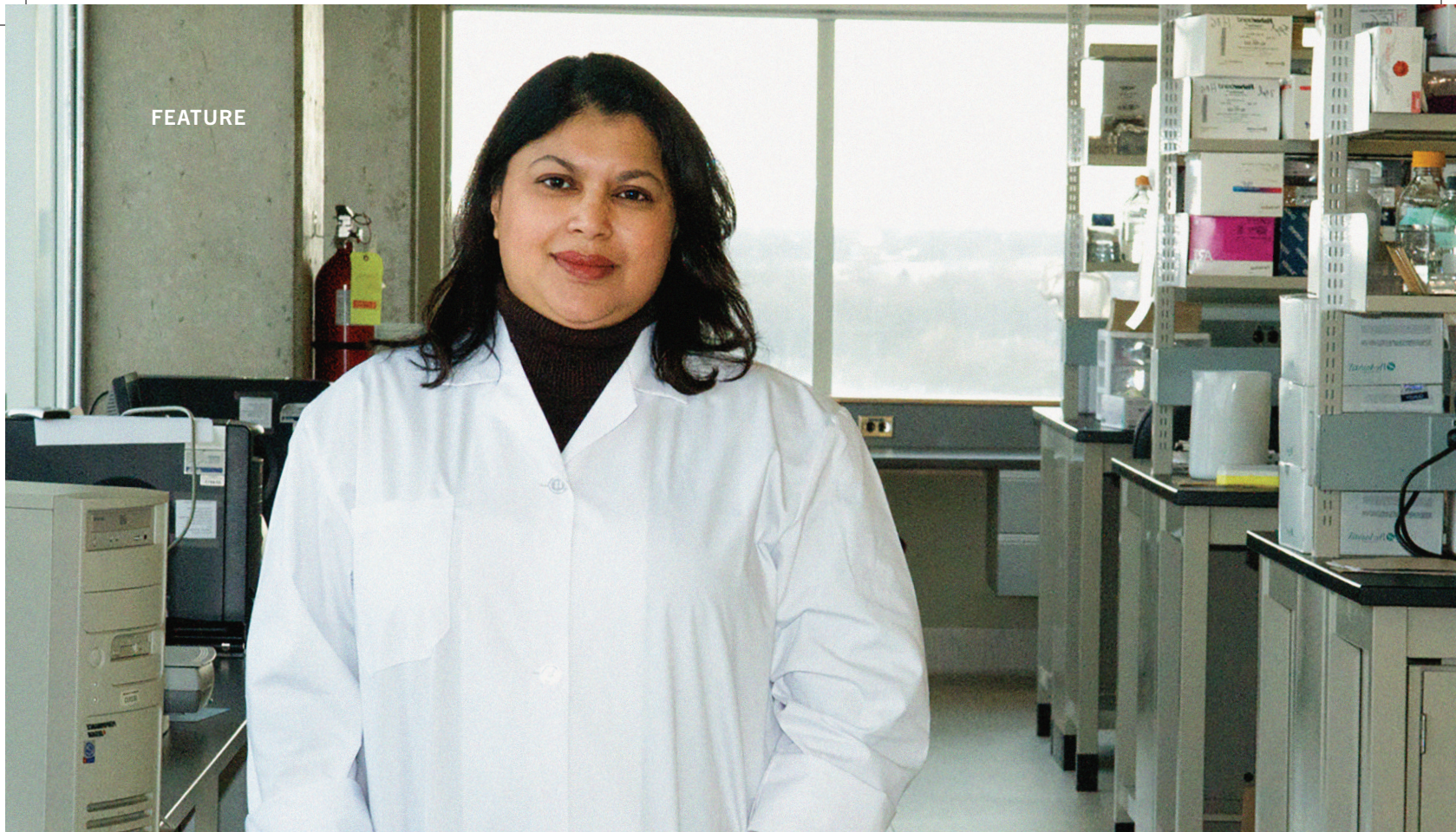
EQ**U**I**T**Y

Why sex matters
in biomedical
research



BY ALISON MAYES

Women with asthma tend to experience more severe symptoms than men. Women are also more likely to be non-responders to steroid treatments for the disease. “That means women are more likely to develop uncontrolled asthma,” says Neeloffer Mookherjee, a UM immunologist whose research focuses on lung inflammation. “Yet these sex-related differences have largely been ignored in drug development research, which has taken a one-size-fits-all approach. If drug-testing experiments are skewed toward males, the treatment can be less effective when applied to females.”



THE PROFESSOR OF INTERNAL MEDICINE AND IMMUNOLOGY in the Max Rady College of Medicine says scientists are only beginning to investigate how disease risk, disease progression and response to treatment differ between the sexes in many illnesses.

Mookherjee's expertise in this emerging approach to research has earned her a prestigious, four-year funded position as Canada's first Sex and Gender Science Chair in Circulatory and Respiratory Health. The chair was awarded in 2020 by the Institute of Gender and Health, part of the Canadian Institutes of Health Research.

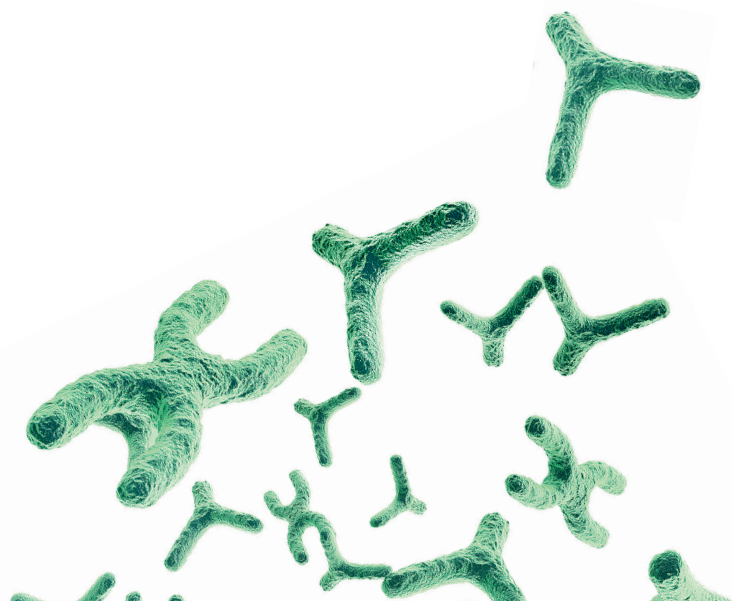
Professor Neeloffer Mookherjee, CIHR Sex and Gender Science Chair in Circulatory and Respiratory Health, Max Rady College of Medicine

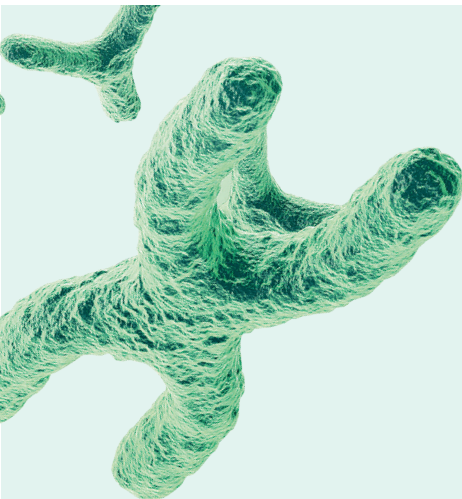
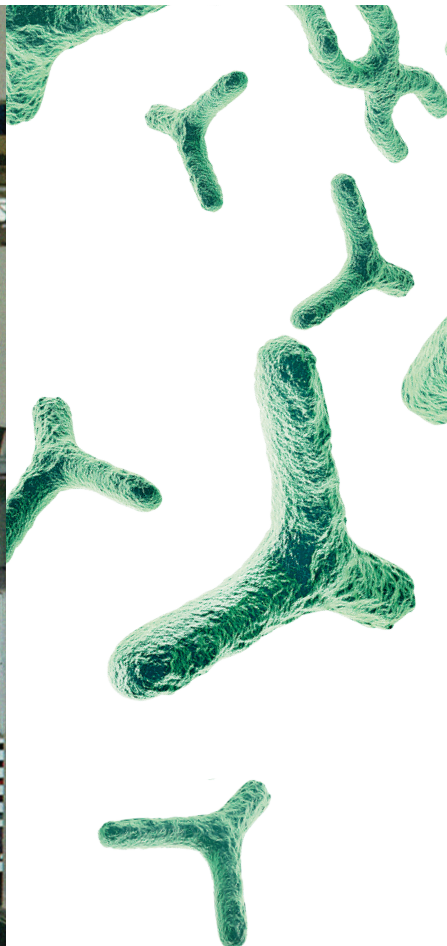
“THE ULTIMATE GOAL IS PERSONALIZED MEDICINE THAT TAILORS TREATMENT TO INDIVIDUAL CHARACTERISTICS, INCLUDING BIOLOGICAL SEX.”

“The entire field of incorporating sex and gender-based analysis into biomedical and health research is very new,” she says. “Canada is becoming a world leader in this field, and this chair will allow my lab to be at the forefront of advancing it. The ultimate goal is personalized medicine that tailors treatment to individual characteristics, including biological sex.”

Mookherjee, a UM faculty member since 2008, studies the molecular processes involved in chronic inflammation. In her lab at UM's Manitoba Centre for Proteomics and Systems Biology, she conducts some of her experiments using mice, and others using human lung cells.

It has long been standard practice, she says, for immunologists to study mice or human cells of only one sex.





APPLYING WISDOM TO WOMEN'S EQUITY

Dr. Neeloffer Mookherjee had excellent mentors throughout her training as a scientist in India and British Columbia. But something was missing: not one mentor was a woman.

The immunologist says that although more women are attaining leadership positions now, women continue to face barriers to achievement in scientific careers.

"We need to do a better job of providing the supports, mentorship and resources to allow women to succeed, advance and lead," she says.

In 2018, Mookherjee founded Women in Science: Development, Outreach and Mentoring (WISDOM), a Manitoba organization supported by the Rady Faculty of Health Sciences. The group, which welcomes people of all genders, works to address the under-representation of women in science, particularly in leadership.

Affiliated with the Society for Canadian Women in Science and Technology, WISDOM aims to increase the number, retention and status of academic women scientists. Recently, it held an online speaker series featuring experts in equity, diversity and inclusion from Canadian universities.

Gender-based discrimination in academia is often nuanced, Mookherjee says, but it still discredits and demoralizes qualified women. It can discourage them from applying for promotion or tenure, or from staying in a leadership position in which they feel isolated and unsupported. "Those nuanced barriers impact the career trajectory," she says.

Mookherjee, who self-identifies as a woman of colour and continues to chair WISDOM, says UM's commitment to equity, diversity and inclusion is having a noticeable impact.

"It is moving in the right direction," she says. "We all need to work together to provide equal opportunities for everyone."

"Recently, data has started coming out that the immune response is wired differently in males and females," she says. "That has been the impetus to take sex differences into account in designing our experiments and analyzing data. The knowledge and the tools to do so have only been available to researchers for about a decade."

"THE MAJOR FUNDING AGENCIES ARE NOW REQUIRING RESEARCHERS TO EXAMINE SEX AS A VARIABLE BY USING ANIMAL MODELS AND CELL LINES OF BOTH SEXES,"

Mookherjee points to a landmark study co-led by scientists from McGill University and Toronto's Hospital for Sick Children. Published in 2015, it showed that the long-accepted theory that pain perception relies solely on immune cells called microglia is only true in males. Interfering with the function of microglia blocked the sensation of pain in male mice, but had limited effect in female mice.

"This study revealed that in females, a different kind of immune cells—T cells—are also involved in perceiving pain," says Mookherjee. "That was a paradigm-shifting result."

Such findings have helped turn the tide toward equitable research design. "The major funding agencies are now requiring researchers to examine sex as a variable by using animal models and cell lines of both sexes," Mookherjee says.

FEATURE

In asthma research, a key challenge is that both chronic lung inflammation and the steroid drugs that control it can weaken the immune system. That makes asthma patients susceptible to infections, including respiratory viruses.

“WE’RE STARTING TO IDENTIFY INFLAMMATORY PROTEINS IN THE LUNGS THAT DIFFER IN MALE AND FEMALE MICE WHEN THEY’RE EXPOSED TO ASTHMA-INDUCING ALLERGENS. IN A YEAR OR SO, IF WE DETECT THE SAME DIFFERENCES IN LUNG CELLS FROM ASTHMATIC MEN AND WOMEN, THAT WILL BE EXCITING.”

Mookherjee’s current research focuses on innate defence regulator (IDR) peptides, which are synthetic versions of human “defender” molecules. In 2018, her team was the first to publish evidence that IDR peptides are effective against asthma. “These peptides can control both inflammation and infection,” she says.

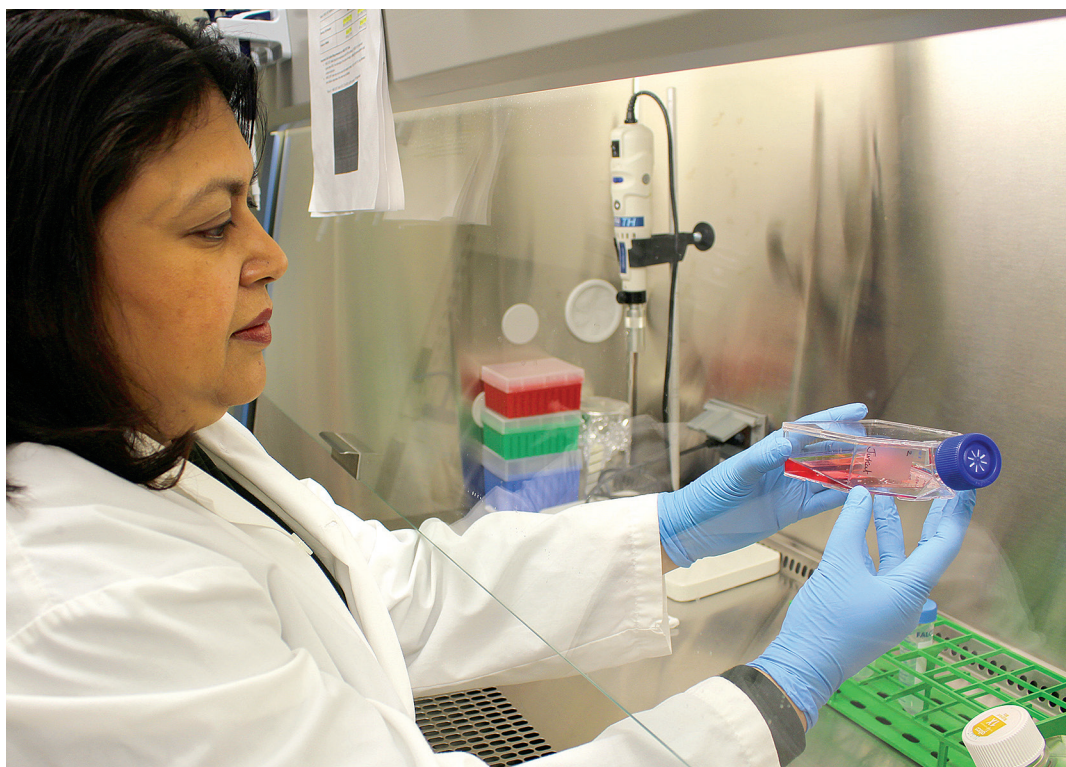
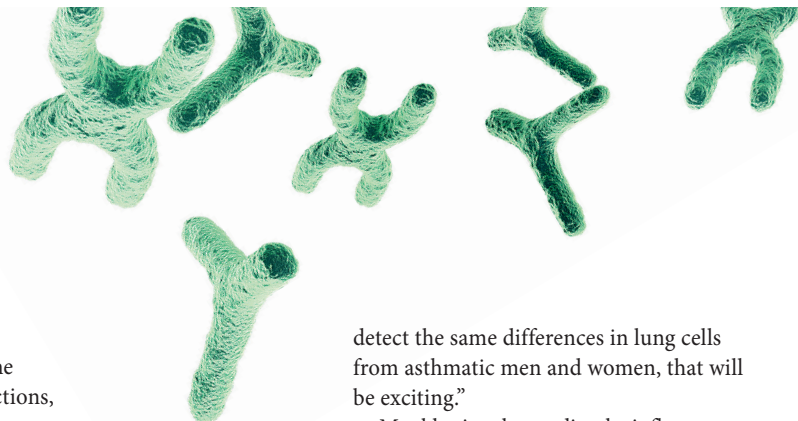
Her lab is now investigating sex-related differences in IDR peptides’ effects on the immune system. “We’re starting to identify inflammatory proteins in the lungs that differ in male and female mice when they’re exposed to asthma-inducing allergens. In a year or so, if we

detect the same differences in lung cells from asthmatic men and women, that will be exciting.”

Mookherjee also studies the inflammatory process in arthritis—another disease that is more prevalent and severe in women. In preparation for including sex as a variable in her arthritis research, she plans to develop female mouse models with various kinds of arthritic joints.

A unique aspect of Mookherjee’s Sex and Gender Science Chair is that it includes dedicated funding for outreach, communication and capacity-building. That is enabling her to promote sex and gender-based analysis through events such as workshops and symposia.

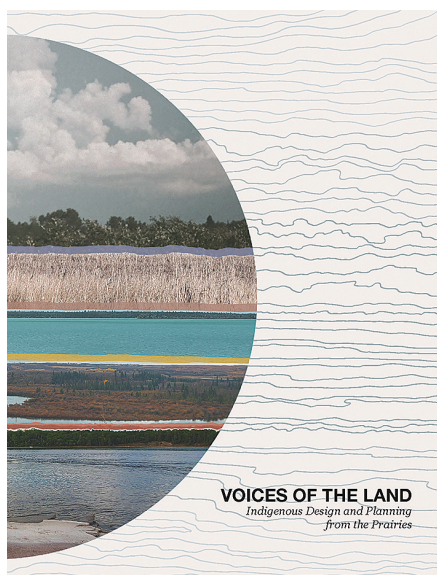
She also belongs to a number of networks and groups, such as the Biology of Breathing Group at the Children’s Hospital Research Institute of Manitoba. “Through these affiliations, I’ll be able to advocate for sex and gender-based analysis and train researchers to integrate it into their own research programs,” she says. **IR**



LEFT & TOP:
Mookherjee in the
lab and image of
peptides generated
from her research.

Voices of the Land:

Indigenous Design and Planning from the Prairies



Cover artwork:
Meighan Giesbrecht

C O-EDITORS, REANNA MERASTY, NAOMI RATTE, Danielle Desjarlais, Desiree Theriault (Indigenous Design and Planning Students' Association (IDPSA), Faculty of Architecture, University of Manitoba, 2021). Designers: Danielle Desjarlais, Desiree Theriault

This publication was produced on the original lands of Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene peoples, in Treaty One Territory and on the homeland of the Métis Nation.

When we met in fall 2019 we were motivated to introduce more culturally informed teaching to our school. Both of us struggled to see ourselves reflected in the way that we were taught to think about design. Throughout our time in the Bachelor of Environmental Design Program, we felt a lack of culturally relevant content, and experienced the underrepresentation and misrepresentation of our Indigenous cultures. During this time we felt alienated and disconnected from our identity. Recognizing the need to find a

platform to host honest conversations around inclusion and representation, we founded the Indigenous Design and Planning Students' Association (IDPSA).

This publication is supported by a community of Indigenous designers connected to the University of Manitoba. We are grateful for the distinguished alumni who took the time to speak with us. We are inspired by their trailblazing efforts in design. These alumni have been influential in our own journeys. We are especially grateful to Ryan Gorrie and Rachelle Lemirux for creating Aboriginal Architecture in 2009, which was the catalyst for this publication.

Recognizing the need to find a platform to host honest conversations around inclusion and representation, we founded the Indigenous Design and Planning Students' Association (IDPSA).

This is the first-ever publication by IDPSA. In it, you will read profiles of our members, along with their artistic visions and designs. There are profiles of our esteemed Indigenous faculty members and alumni, and you will be inspired by the conversations we had with several leading Indigenous designers.

Our faculty leadership has graciously supported each of our endeavors. From the creation of this publication, to hosting lecture events, to integrating Indigenous content into core curriculum. The validation of our voice in design education has been reassuring and we are hopeful for the future.

At its heart, this publication is an act of ceremony. We are proud of our Indigenous identities. We acknowledge that the path ahead of us is unknown. We hope that this publication inspires the next generation of Indigenous designers to find their voice in design. **IR**



GETTING PAST THE BARRIERS

Seeking

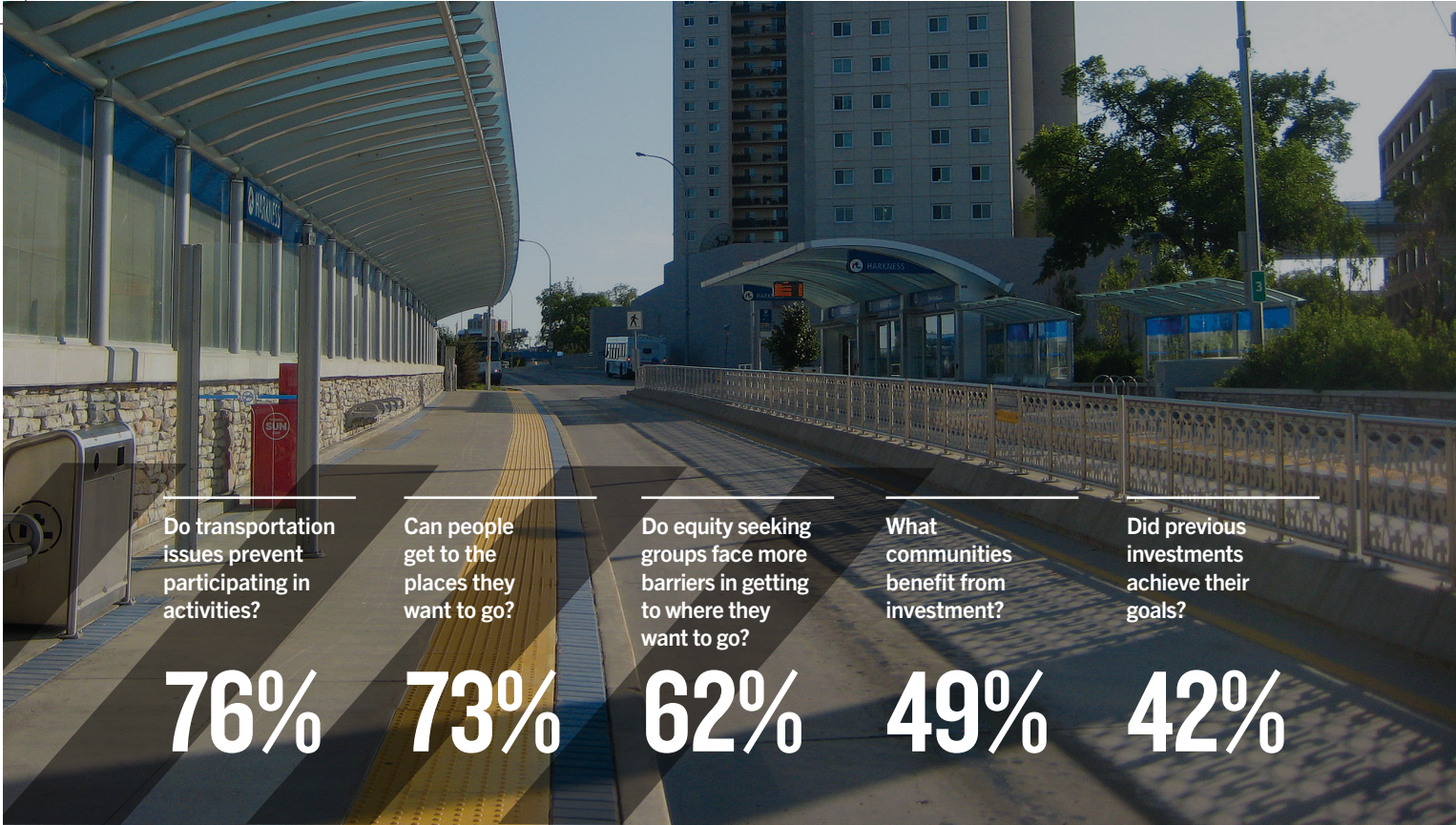
Public Transit

BY SHARON CHISVIN

Public transportation plays a vital role in society. It makes it possible for people to travel to and from work and school, access essential services like grocery shopping, daycare and medical care, and participate in social and recreational activities. But what happens when that public transportation is unreliable, inaccessible, ineffective, unsafe or too expensive? Who exactly does it affect? And what kind of impact does that have on those individuals and on society as a whole?



Equity



Do transportation issues prevent participating in activities?

76%

Can people get to the places they want to go?

73%

Do equity seeking groups face more barriers in getting to where they want to go?

62%

What communities benefit from investment?

49%

Did previous investments achieve their goals?

42%

THOSE ARE SOME OF THE QUESTIONS THAT ONLY Linovski has been addressing since arriving at UM eight years ago. Linovski is an assistant professor of city planning in the Faculty of Architecture and a registered professional planner, with a profound interest in social justice and equity issues and the way that those issues keep individuals from fully participating in society.

That interest is reflected in all of her research.

“My research focuses on transportation equity,” Linovski explains. “So it’s thinking about what are the barriers for people in terms of the transportation system, how it limits what sorts of opportunities they’re able to access, and how we can improve that through transportation planning and investments.”

“IT’S THINKING ABOUT WHAT ARE THE BARRIERS FOR PEOPLE IN TERMS OF THE TRANSPORTATION SYSTEM, HOW IT LIMITS WHAT SORTS OF OPPORTUNITIES THEY’RE ABLE TO ACCESS, AND HOW WE CAN IMPROVE THAT THROUGH TRANSPORTATION PLANNING AND INVESTMENTS.”

That research, she continues, is two dimensional. One side of it focuses on the planning process and how planners and engineers work to understand the needs of equity-seeking groups that have been historically and currently marginalized in terms of access to opportunities. The other area of her research works directly with equity-seeking, community-based organizations and their members to understand their needs and how they can be better integrated in the planning process and in outcomes from transportation investments.



Orly Linovski, assistant professor of city planning in the Faculty of Architecture and a registered professional planner.

TOP: Bus rapid transit station, Winnipeg

Community responses to “what measures should be used to make transit investment decisions?”

RIGHT: Equity Maps Maps showing access to built and proposed transit, based on need indicators

CREDIT: Linovski, O.; Manaugh, K.; Baker, D.

Linovski’s current primary research project is focused on that second dimension. The project, funded by a SSHRC Knowledge Synthesis Grant, is exploring community members’ lived experiences with public transit and equity and seeking to understand how aspects of a person’s identity affect their experiences of discrimination or privilege in the realm of public transit.

“A lot of transportation research focuses on modelling, so trying to understand potential opportunities and potential barriers,” Linovski explains. “But the lived experience research really wants to understand people’s experiences in their day to day lives, things that are not easy to understand through quantitative methods—so things like experiences with policing, with violence, with harassment and with multiple barriers that inform how people have access to opportunities or don’t have that access.”

Linovski and her graduate student team of researchers are gathering that data in collaboration with several well-established community-based organizations, as well as from targeted public surveys that the team designs and distributes to equity-seeking groups representing people of colour, people from low income neighbourhoods and people living with disabilities, among others.

Public transportation barriers are a huge concern and burden for people from these demographics, Linovski emphasizes. People who have mobility options, who own their own vehicles or who have easy access to vehicles, have agency over their time and their ability to get where they need or want to go and take advantage of all sorts of opportunities. But individuals who rely on public transportation do not have that agency and as a result miss out on countless opportunities and experiences.

“TRANSPORTATION INEQUITY, CAN BE SO SEVERE AND NEGATIVELY IMPACT SO MANY FACETS OF PEOPLE LIVES.”

What do they do when they have a family emergency to respond to? How can they get to work on time or pick up their children from daycare on time when a bus is running late?

“Equity research is important because there can be strong incentives for the groups in society who benefit from inequity to not see or understand the systems that serve those with privilege at the expense of marginalized groups,” says Aaron Snider, a student in the Master of City Planning program and one of Linovski’s research assistants. “I see research like Dr. Linovski’s as key to highlighting those systems and to understanding where inequity originates.”

Once all of the current project data is collected, Linovski and her team will begin the task of synthesizing and translating the findings for a range of stakeholders, including government, which, ideally, will then use the findings to facilitate best practices in policy and program development.

“All of my research is motivated by having an impact on policy, hopefully in a positive direction,” Linovski says.

Transportation inequity, she adds, can be so severe and negatively impact so many facets of peoples’ lives. The good news, however, is that community engagement, combined with equitable planning, programs and policies—and equitable investment—can help to alleviate much of that imbalance. **IN**

Combined High-need Indicator

Higher score: ↓ income/education; ↑ unemployment/recent immigration

Low indicator score
High indicator score

Proposed BRT
Constructed BRT



Winnipeg



Ottawa

PANDEMIC EFFECTS

ONLY LINOVSKI AND HER RESEARCH TEAM have long been aware of how transportation inequities negatively impact people from certain communities much more than other communities. The pandemic has made that reality difficult for anyone to ignore.

“Many of the burdens of the COVID-19 pandemic are unevenly distributed across society, including in relation to transportation,” says Dominique Camp, a student in the Master of Urban Planning program and one of Linovski’s research assistants. Recognizing this, she adds, has reinforced the need for the kind of research that Linovski conducts.

During the course of the pandemic it became increasingly evident that individuals working in essential or frontline services were often the same individuals who relied on public transportation to get to and from their places of employment. But public transportation, which in pre-pandemic days was often deemed unreliable, inaccessible, unaffordable and unsafe, became even more so in cities across North America in the last year and a half.

As the pandemic raged and many economies shut down, transit routes were sporadically suspended or cancelled, making the process of getting to work—for those who had to get to work—more of a challenge than usual. The suspension or rerouting of some services also led to inevitable overcrowding on other services, making social distancing near impossible at a time when the sharing of public spaces, and especially the sharing of overcrowded public spaces, was a major risk factor for COVID-19 transmission.

“The pandemic has made transit inequity more apparent to some people,” Linovski says, “but for the majority of people this is a reality that they have lived with for a long time.”

By engaging with and directing her research questions to those familiar with that reality, Linovski aims to provide policymakers and planners with the insight and knowledge needed to redress a long-standing injustice.

Creating intelligent maps

BY SEAN MOORE



YOU CAN BUY A VARIETY OF MAPS OF THE CANADIAN PRAIRIES, but none of them show the information governments—keen to provide safe and efficient transport of freight—are in need of, which is why civil engineers Jonathan Regehr and Babak Mehan are embarking on a novel project to create maps no one has ever seen, using artificial intelligence (AI).

The duo are working with National Research Council (NRC) who provided \$1.6 million in collaborative R&D funding for the project that will apply AI to improve the resilience, fluidity and safety of road freight transport in Canadian Prairie and northern regions.

“There are many natural and human-made risks that can arise and disrupt transport and risks to moving certain freight,” Mehran says. “So what we want to do in this project is to address these challenges by applying artificial intelligence. By using AI, we would be able to find new

methods to manage such a large network in a more efficient and safer way.”

They will begin the first phase of their project by cataloguing truck routes and activities such as the number, type and weight of trucks using the roadways and how they collectively behave under various road-weather scenarios. Such data, though fundamental to designing and managing safe, reliable and efficient transportation

networks, is lacking not only in Canada, but in most of the world.

The second phase will directly involve experts from the NRC’s Digital Technologies Research Centre, including Chaouki Regoui, and will

“There are many natural and human-made risks that can arise and disrupt transport and risks to moving certain freight. By using AI, we would be able to find new methods to manage such a large network in a more efficient and safer way.”



Jonathan Regehr,
associate professor,
civil engineering,
Price Faculty of
Engineering



Babak Mehran,
associate professor,
civil engineering,
Price Faculty of
Engineering

build on the first phase collaboration with experts from Manitoba Infrastructure, and International Road Dynamics, a Saskatchewan based ITS (Intelligent Transportation Systems) company. This phase will create the first-ever models of Prairie provinces road logistical networks.

The new models will reveal what the crucial networks are, their weaknesses and what consequences arise when catastrophic risks become reality: supply chain vulnerabilities resulting from extreme weather, or which rural highways should ideally be four-lanes. The models can also be used to develop weather-responsive traffic management strategies such as a variable speed limit to improve traffic safety in winter.

“With only so many public sector dollars to spend on road infrastructure upgrades, we need to know what sections of highway are most critical for trucks and which highways are most vulnerable to risks, including risk associated with climate change,” Regehr says. “A great example is highway 75 in Manitoba, which is a crucial trucking link that is prone to flooding risks. We are seeing investments in that highway, but how many other vital roadways in the region face similar risks? What’s the probability of those risks emerging? What would the impact be to our logistical systems?”

Soon, we will know the answers. **IR**

Building nanoparticles for biomedical applications

BY RACHEL NICKEL

FUNCTIONAL MATERIALS CAN BE THOUGHT OF AS SIMPLE LEGO™ structures, where the overall properties are determined by the type of the blocks used in construction. Most of the materials that we encounter in daily life are the equivalent of a cube built with large DUPLO LEGOs™—incredibly well ordered with predictable properties. Just like how smaller pieces increase the intricacy of LEGO™ construction, the nanoscale materials that I study contain properties with a complexity not present in bulk materials.

Under the supervision of professor Johan van Lierop, my research is focused on magnetic nanoparticles. Magnetism is fundamentally a quantum mechanical effect and the size of these particles—10,000 of my nanoparticles will fit end-to-end in the width of a single hair—introduces a wealth of new physics. Electronic quantum effects become significant at surfaces, while the interaction between chemical composition and nanoparticle structure changes the material's properties. As a result, a complete understanding of these systems is elusive because the delicate interplay between interactions within the particles and between particles is not easily disentangled.

To gain new insights into nanomagnetism, I work to build new quantum structures composed mostly of iron and oxygen atoms. Varying the size and shape of these nanoparticles allows me to create different quantum interactions which can then be probed. The fundamental information obtained from these experiments will permit intelligent



Rachel Nickel is a Vanier scholar in the Department of Physics & Astronomy. She is studying iron oxide nanoparticles to determine how size and shape affects their properties. Her research aims to translate this quantum physics into biomedical applications.

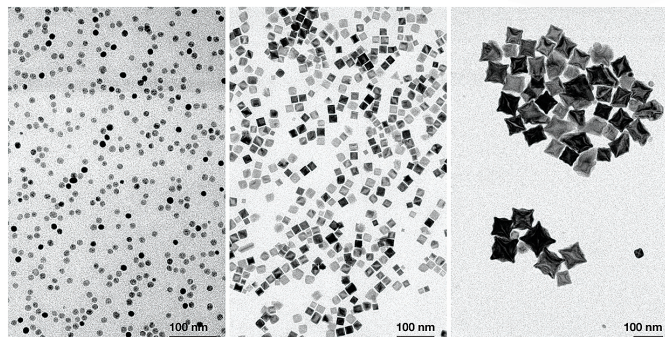
design of magnetic nano-particle systems for various applications.

In particular, my magnetic nanoparticles are well-suited for biomedical applications. One of the primary reasons for studying iron oxide nanoparticles is that they are non-toxic and have capabilities for both diagnostics and therapeutics.

“The fundamental information obtained from these experiments will permit intelligent design of magnetic nano-particle systems for various applications.”

For instance, my nanoparticles can be used for new imaging modalities with exceptional contrast and sensitivity that require relatively inexpensive equipment. These magnetic nanoparticles are also capable of converting electromagnetic energy into heat with significant spatial selectivity, giving them great potential for cancer treatments. Via careful control of quantum properties, I aim to combine these diagnostic and therapeutic abilities into a single ‘theranostic’ system, which will make for more efficient treatments.

Using the toolkit of LEGO™-like nanostructures that I am building, my research connects complex quantum science to real world applications. Although they are sub-microscopic, magnetic nanoparticles have enormous potential. **IR**



Nanoparticle image, Sphere, cube and octopod-shaped iron oxide nanoparticles.



INNOVATING DIVERSITY

EDUCATION

**A new twist
on 2SLGBTQ+
awareness**

BY SUSAN PETERS

The hunt for a bathroom exemplified a problem Robert Mizzi is studying in his academic work. In January 2017, he was giving a campus tour to a guest speaker and, at the same time, trying to find a gender-neutral washroom for the speaker in one of the University of Manitoba's buildings. "I guessed the library was progressive enough to have one, and I was right," says the associate professor, who joined the Faculty of Education in 2013.

M

MIZZI IS A NEWLY NAMED CANADA

Research Chair (CRC) in queer, community and diversity education, which includes a Social Sciences and Humanities Research Council grant worth \$600,000. He has embarked on a five-year research program to determine the effectiveness of anti-homo/transphobia education.

One common method is short, standalone 2SLGBTQ+ awareness workshops that organizations hold for a few hours, but the stand-alone workshops aren't effective at accomplishing significant changes in large organizations. So the question is, which educational methods will really lead to safe and diverse workplaces?

"The theme of the research program is to study educational interventions that go beyond traditional forms of interactions," says Mizzi.

"THE THEME OF THE RESEARCH PROGRAM IS TO STUDY EDUCATIONAL INTERVENTIONS THAT GO BEYOND TRADITIONAL FORMS OF INTERACTIONS."

Consider the bathroom: the lack of a gender-neutral bathroom in a faculty building says something about who is expected to use that building. During one stage of his research, Mizzi will focus on spatial justice, looking at how physical space can disenfranchise people.

"If Muslim student space is away from other religious groups on campus, what message does that send? If 2SLGBTQ+ space is in the basement, what message does that send?" explains Mizzi. He plans to ask students to draw on university campus maps to illustrate the places they find unwelcoming, along with the places they find attractive.

No ivory tower thinker, Mizzi hopes the learnings about spatial injustice shows those who design university spaces how the architecture can be more supportive. "What people within the disability rights movement have shown is that buildings can be redesigned to suit the needs of building users," says Mizzi.

Before entering academia, Mizzi was a middle-school teacher, worked in community and social development and consulted on international development projects. Ultimately he chose to focus on educators and education policymakers, because better training for educators and policymakers can flow throughout an organization to benefit more students. Internationally, Mizzi has worked on education projects in Kosovo, Catalonia, Northern Ireland and Japan. He's also a professionally trained actor with stage and television appearances in three countries. So there's little surprise to hear that while COVID-19 paused his CRC research, he has used the time to give virtual guest lectures, such as at the University of São Paulo in Brazil and the United Nations' University for Peace in Costa Rica.



Robert Mizzi, associate professor and CRC in Queer, Community and Diversity Education, Faculty of Education

TOP: Buddy bench photo taken in Hong Kong.

RIGHT: (L-R) outthereresearch.ca research team members Gustavo Moura, Clea Schmidt, Robert Mizzi

Along with spatial justice and an "activism" mural on 2SLGBTQ+ history, Mizzi also plans to study the impact of Gender Sexuality Alliances (GSAs, formerly known as Gay-Straight Alliances). The research has a twist, though: while the positive impact of GSAs on schools is known, Mizzi is wondering if GSAs can have a similar impact on adult education in corporations and large organizations like hospitals, libraries, community centres and post-secondary schools.

"I've never heard of this for adults. It's not a common practice," says Mizzi. The methodology will be to create GSAs in adult environments, then study how the GSAs evolve over time.

Like the rest of his CRC research, this stage will involve both academic research and ways to directly affect the community. Mizzi is used to discussing institutional changes with policy-makers directly.

"I have to acknowledge that politicians and leaders may not have the language to understand sexual and gender diversity and it may draw on some history they're not proud about in their own lives. I try to be sensitive but assertive in describing what needs to happen." He believes part of the problem stems from a lacuna in Manitoban's knowledge of 2SLGBTQ+ history, which is rarely taught [if at all] in Manitoba schools.

That mixed approach of the academic and activist worlds carries over into the advisory council assembled to guide his research.



VISUAL HISTORY

ONE ASPECT OF HIS CRC RESEARCH PROGRAM will see Robert Mizzi draw on his artistic and activism side to create a mural to tell 2SLGBTQ+ history in Canada, known as “artivism.”

“We never consider visual art as a source of information,” notes Mizzi. “Because I’m an actor, I have an appreciation for the arts. I’m at a stick-drawing level of skill, but I appreciate how aesthetics can reach people. In my acting, I’ve tried to reach people in that way.”

Inspiration comes from a mural at a community centre in Londonderry/Derry in Northern Ireland, where Mizzi ran a research project on how people with disabilities and LGBTQ people were affected by the peace accords. “The mural was massive, really detailed, starting with Oscar Wilde, with all the struggles and the achievements of U.K. history,” says Mizzi. “I want to take it even further.”

While still in the planning stages, Mizzi hopes the Canadian mural will be displayed on a prominent public building in Winnipeg. A further goal is for the mural to travel to schools and community spaces (one option might be to print the mural on a large piece of vinyl, which is easy to ship and hang).

The academic side of the project is to assess how policymakers in schools and colleges are impacted by that mural after they know more about Canada’s 2SLGBTQ+ history, says Mizzi: “What are the reactions from leadership now that people are aware of the struggles, how does that influence their policies and programs?”

“I HAVE TO ACKNOWLEDGE THAT POLITICIANS AND LEADERS MAY NOT HAVE THE LANGUAGE TO UNDERSTAND SEXUAL AND GENDER DIVERSITY AND IT MAY DRAW ON SOME HISTORY THEY’RE NOT PROUD ABOUT IN THEIR OWN LIVES.”

“It’s unusual for a CRC chair to have an advisory council, but it was important for the research to be meaningful to the community,” says Mizzi. Moving beyond the one-off workshop, the new research will position 2SLGBTQ+ people as teachers for leaders.

“It’s very much rooted in participatory engagement and community,” says Mizzi. “If you look at my history, I’ve worked on 2SLGBTQ+ education internationally and been involved locally with communities. I see this research as an extension of what I’ve been doing in the past.” **IR**





SPOTLIGHT ON STUDENTS

Passion for Research

BY CHRIS RUTKOWSKI

AN ASPIRING PHYSICIAN WON FIRST PLACE AND THE Dr. Archie McNicol Prize at the annual UM Three Minute Thesis (3MT®) finals on April 21, 2021.

Three Minute Thesis 3MT® is an annual competition where challengers have three minutes to explain their research and its importance or relevance, using only a single static image or slide to illustrate their topic. Competitors are assessed on comprehension, engagement and communication style.

“There really was so much talent, professionalism, and excitement seen at the competition today and it was a beautiful reminder that even in the toughest times, we can still work together to learn, grow and make an impact through our love of research.”

kind of feels like the pandemic brought the world to a grinding halt, it was really inspiring to see the resilience in all of the other students who are continuing to work and push themselves to advance their knowledge and understanding of the things that they are passionate about,” said De Leon.

Viewed by both a live virtual audience and a prestigious panel of judges, Nolan De Leon, a master’s student in physiology and pathophysiology, explained his thesis on using circular RNA for the prognosis and diagnosis of congenital anomalies. De Leon, who is working under supervisors Drs. Richard Keijzer and Andrew Tse, received \$2,500 for first place.

“I think something that was really great [about 3MT®] was the fact that even though it

“There really was so much talent, professionalism, and excitement seen at the competition today and it was a beautiful reminder that even in the toughest times, we can still work together to learn, grow and make an impact through our love of research.”

Danah Alhattab captured UM’s Retirees Association Prize for Second Place (\$1,250) for her work on understanding the role of scleraxis in perivascular fibrosis. A doctoral student, Alhattab wants to eventually run her own lab in the quest to develop better therapeutic approaches for patients. She explained: “It’s really hard to speak about the molecular part of your project; all the sophisticated stuff that we do in the lab and how to translate it to a lay audience, telling them how it’s significant and important.”

She added: “When I was developing my presentation, I tried to imagine how this basic science would be translated to future hospitals and patients and the impact it would have.”

Third place winner Sristi Mundhada received \$750 for her research on safe storage for flaxseed. A biosystems engineer, she is concerned with keeping food safe for consumers.

Mundhada noted: “What I love about the 3MT® competition is that when I was working



ABOVE & BOTTOM RIGHT:
3MT winner Nolan De Leon



Second place winner Danah
Alhattab



People's Choice winner
Sonu Varghese



Third place winner Sristi Mundhada

on my script I relived the moment when I decided this is what I wanted to do in my life and this is what I am so passionate about. It gave me the chance to love my project all over again and that was awesome.”

The online audience voted master's student Sonu Varghese as People's Choice for his enthusiastic presentation about exercise to

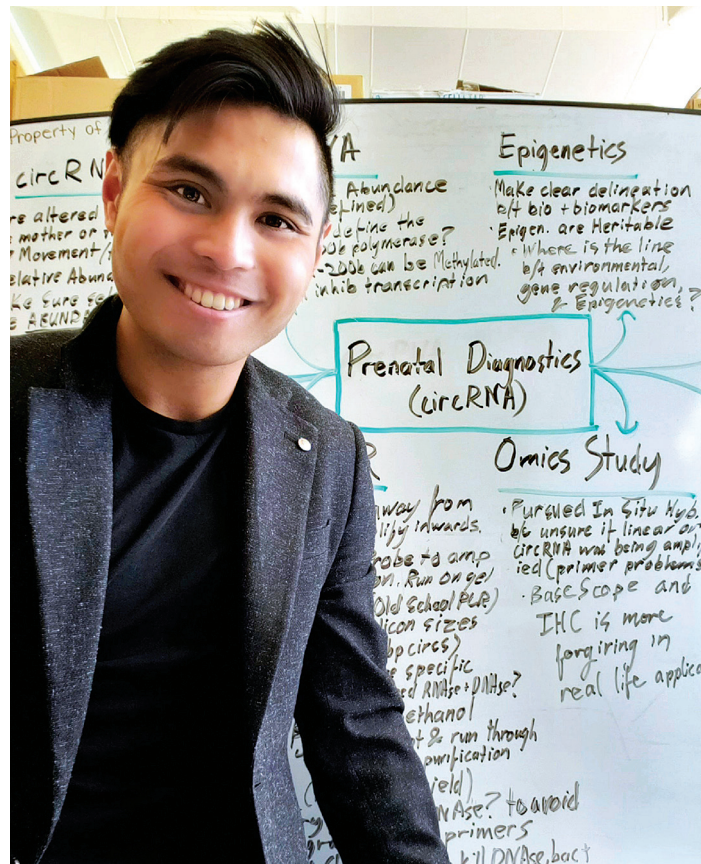
“What I love about the 3MT® competition is that when I was working on my script I relived the moment when I decided this is what I wanted to do in my life and this is what I am so passionate about. It gave me the chance to love my project all over again and that was awesome.”

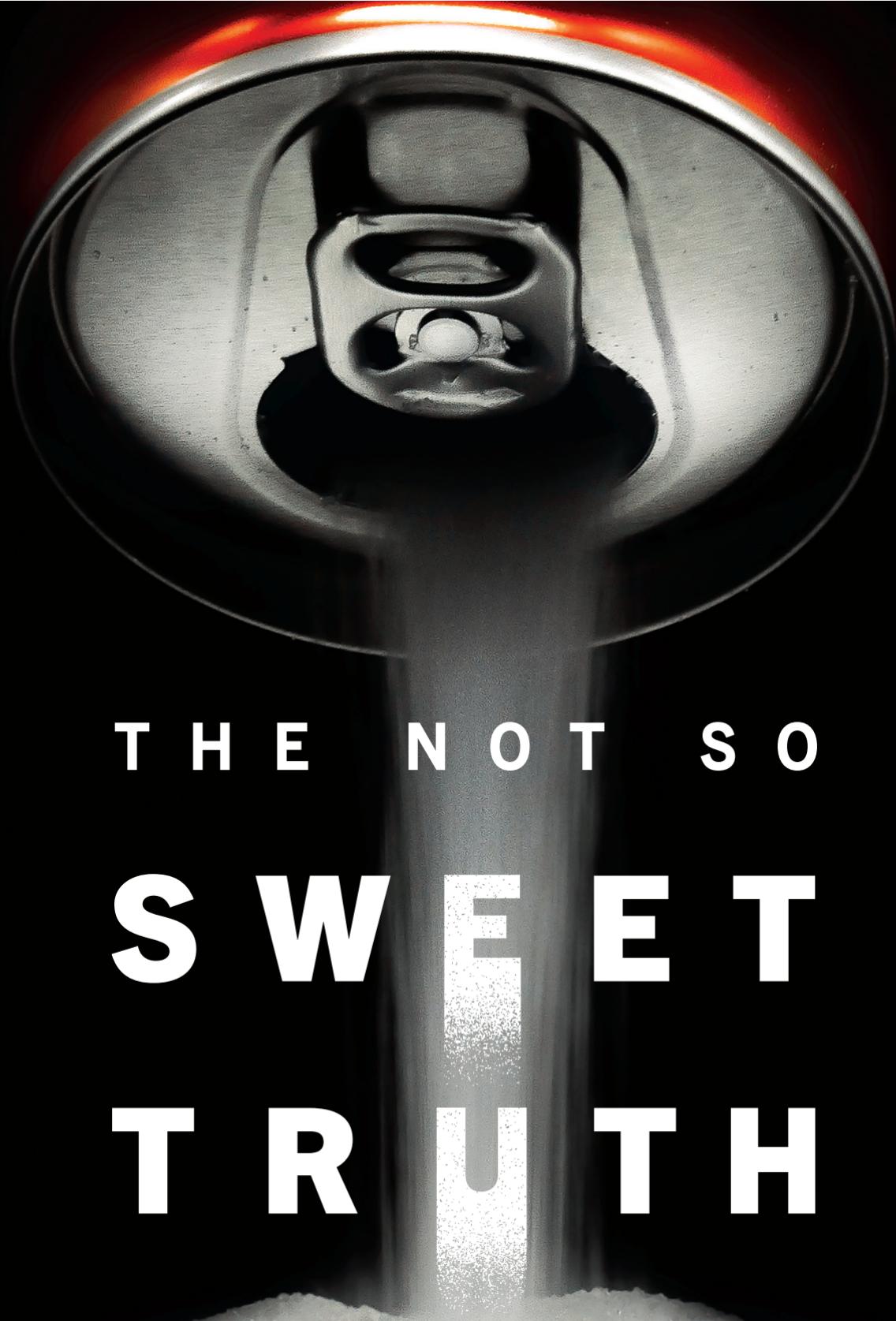
prevent cardio toxicity in women with breast cancer. His passion is in lifestyle interventions that can improve health outcomes.

Varghese said: “My favourite part about 3MT® is learning about all the different research being done around the university in all the different faculties. I find that being in science you are usually surrounded by presentations and abstracts that are within the physiology

and pathophysiology field, so you never really hear about great work like Sristi's on flax storage or other speakers who gave enticing talks about conservation and water quality. I think that's my favourite part of 3MT®—hearing about different topics from different faculties in a concise, quick manner in a way that is engaging and leaves you wanting more.” **IR**


To learn more about UM's 3MT® competition visit umanitoba.ca/3mt





T H E N O T S O
S W E E T
T R U T H

ABOUT FOOD POLICIES



Investigating inequalities in law making

BY SARAH HOURIE

Identifying inequities in Canadian food policies is what Natalie Riediger undertakes. Research by this assistant professor in UM's Department of Human Nutritional Sciences demonstrates how the distance between governments and the legislation they propose detrimentally affects marginalized communities, particularly First Nations in both urban and rural centres, such as those living on reserves and in Winnipeg, Manitoba.



BECAUSE RIEDIGER'S RESEARCH EXAMINES THE LEGAL contexts surrounding a proposed tax on sugary drinks, she partnered with Myra Tait—an alumna of UM—now an assistant professor at the University of Athabasca and First Nations lawyer to understand the legalities behind its enactment. They question whether governments can legally enforce the tax, as under the Indian Act, they cannot tax on reserves. However, as Riediger mentioned in our interview, “the Indian Act plays a big role in taxation on reserves, but it is its own conversation.” Self-determination must be at the forefront of any discussion.

Instead, Riediger is focusing her attention on understanding the social, economic, and cultural contexts that may influence the acceptability and effectiveness of a proposed tax on sugary drinks, which the Government of Canada considered in 2016, though did not implement.

“THE INDIAN ACT PLAYS A BIG ROLE IN TAXATION ON RESERVES, BUT IT IS ITS OWN CONVERSATION. SELF-DETERMINATION MUST BE AT THE FOREFRONT OF ANY DISCUSSION.”

Although the World Health Organization and Diabetes Canada supported taxing sugar-sweetened beverages in hopes to influence healthier choices, as Riediger's research explores, this policy may be harmful to marginalized communities. In working with Indigenous Peoples, she uses food inequities research to reveal the complicated nature of this proposal.

As it turns out, it is much more complicated than simply making a healthier choice at the supermarket. Riediger says that initial inquiries that led to her current project with the National Indigenous Diabetes

Natalie Riediger,
assistant professor
in UM's Department
of Human Nutritional
Sciences

Association indicate the legal contexts that would follow its implementation are nuanced and complex, “something governments should consider if implementing this tax.”

The target population for her research includes Indigenous residents in urban and rural settings: Winnipeg, Manitoba focusing on the North End, a central urban hub for Indigenous Peoples, and Flin Flon, a border town between Northern Manitoba and Saskatchewan. As well, she includes residents in First Nations reserves across Manitoba.

Winnipeg, home to one of the largest populations of Indigenous Peoples in Canada, exposes the contexts of Riediger's research. Before COVID-19 lockdowns, she and her team interviewed Indigenous adults in the urban and rural settings to obtain their perspectives and attitudes on taxing sugar-sweetened beverages. To ensure comparative data, she interviewed residents in River Heights, a predominately middle-class neighbourhood in Winnipeg.

“We uncovered various nuances in which inequities could emerge,” says Riediger. “For instance, small business owners vocalized their concerns about the impacts of the tax due to provincial cross-border

shopping. And, ultimately, we found that [soda] pop is very classed and folks who consume it are susceptible to judgement.”

Many participants from River Heights supported the tax, as they did not perceive it as negatively affecting them. One participant expressed that “pop isn’t even a food, so why shouldn’t it be taxed?”

Indigenous residents in the North End and Flin Flon were much more skeptical of its positive impacts and had substantial concerns regarding negative impacts among people who are food-insecure or lack access to clean drinking water. Residents became more trusting of the tax after they were asked what they would want the revenue to go towards.

“They were more comfortable with the idea when they felt they had a say in the matter,” indicated Riediger. “Once they knew how the tax would promote health in their communities.”

Thus, the inequities surrounding the sugar-sweetened beverages tax expose colonial narratives; to combat these inequities, community input, self-determination and trust are critical. Riediger and her team argue that any government, federal or provincial, should consider this context before implementing this potentially devastating tax.

FOOD SECURITY RESEARCH TELLS US THAT THE INABILITY TO PURCHASE FOOD INCREASES STRESS, INJURIES AND AFFECTS MENTAL HEALTH.

Many research participants only realized the overarching complexities of the tax when they recognized familiar beverages, such as Frappuccino’s, sweetened coffee, diet drinks and juices, whose eligibility for taxation may be fraught. Riediger suggests that it is almost like prompting interview participants to ask, “Is my sugar okay?”

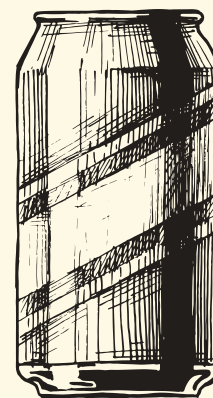
Her team is identifying intersecting issues within the research as they examine how, along with pop as a classed beverage, the actions of carrying it around in a shopping cart or purchasing it and giving it to a child can be stigmatized for Indigenous Peoples. There are multiple oppressions taking place simultaneously, which can be particularly detrimental for Indigenous mothers, who may experience judgment for giving pop or sugary drinks to their child, for their weight and their poverty. “Health is much more than pop and what we eat,” says Riediger.

Food security research tells us that the inability to purchase food increases stress, injuries and affects mental health. Riediger’s findings indicate that many Indigenous Peoples are not convinced that they will consume less pop if a tax is implemented, as pop is part of community gathering and socializing—although she says that “this ‘norm’ is changing.”

“This research is part of a global conversation that requires critical perspectives to ensure the inclusion of Indigenous voices during policy discussions,” shares Riediger. For her, conducting interviews and hearing the voices of Indigenous Peoples is fundamental to the research, as this project identifies the gaps in overarching policy initiatives.

She recognizes the power of listening to experiential knowledge and those directly impacted by the tax. “We need to give people time to pause, listen and really consider, or reconsider the tax,” comments Riediger.

“As a mixed-methods researcher, I recognize the importance of numbers, [but also] the social meanings of the community.” **IR**



THE NUANCES

RIEDIGER’S RESEARCH IS ESSENTIAL as it identifies the complexities of taxing sugary drinks in colonial contexts.

“Capitalism can be traced back to sugar production, and intertwined with capitalism, is colonialism,” she says.

An example would be the use of stolen lands to produce corn for corn syrup. The Indian Act may further complicate the tax when discussing its implementation in Indigenous communities. Although, it remains clear that paternalistic attitudes are still controlling the discourse surrounding legislation that will affect marginalized populations.

When interviewed, small business owners vocalized their concerns about the impacts of the tax due to provincial cross-border shopping and on lower income and working class Manitobans.

Many participants from River Heights supported the tax, as they did not perceive it as negatively affecting them.

Residents from River Heights were generally not of the opinion that the proposed tax will hurt many people, though there were concerns regarding potential lack of fairness.

UM Research Speaker Series and Events

Join us online to learn about the latest developments in an array of research topics.

These Café Scientifiques bring together experts with non-researchers—you, me, neighbours and friends—to talk about their research and the questions it raises. All discussions begin at 7:00 p.m. (CT) and end by 8:30 p.m. Pre-registration is not required.



CAFÉ SCIENTIFIQUE

Join us ONLINE to learn about the latest developments in an array of research topics. These Café Scientifiques bring together experts with non-researchers—you, me, neighbours and friends—to talk about their research and the questions it raises.

All discussions begin at 7:00 p.m. (CT) and end by 8:30 p.m. Pre-registration is not required.

VISIT:
umanitoba.ca/cafescientifique

CENTRE ON AGING

The Centre on Aging at UM, with its partners generates, supports and promotes interdisciplinary research on aging at Manitoba universities to improve the lives of older adults, their family, caregivers and communities. They host many events, including a speaker series that allows researchers in the field of aging to share insights into their academic research and discuss current issues.

VISIT:
umanitoba.ca/aging

NCTR DIALOGUES

The National Centre for Truth and Reconciliation (NCTR) is holding a discussion series with Survivors, Elders, researchers and Indigenous allies on various truth and reconciliation topics. This online discourse provides the public and educators with important discussions on truth and Reconciliation with Survivors, a discussion very few may be privy to in a pre- or post-pandemic world.

VISIT:
nctr.ca

TO VIEW ANY OF THE PAST OR UPCOMING CAFÉS VISIT: [UMANITOBA.CA/CAFESCIENTIFIQUE](https://umanitoba.ca/cafescientifique)

Facts

Dimensions Charter - Equity, Diversity and Inclusion

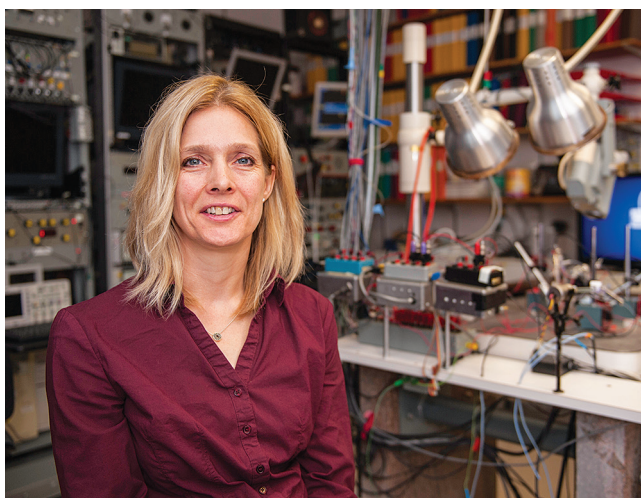


The University of Manitoba has endorsed the Dimensions charter to show our academic community's commitment to embedding its principles in our policies, practices and action plans.

Dimensions recognizes that a multiplicity of perspectives, lived experiences and the overall complexity of diverse individuals foster increased research excellence, innovation and creativity within the post-secondary sector. This program takes a multidimensional approach to equity, diversity and inclusion to achieve a future research community where all can thrive.

For more information on the UM's commitment to EDI in research and the Dimensions charter, visit umanitoba.ca/dimensions

Canada Research Chair Recruitment



University of Manitoba is firmly committed to ensuring equity, diversity and inclusion within the Canada Research Chairs program. This statement expresses our ongoing commitment to fostering a culture where all people feel valued, respected and included.

We are committed to ensuring that all Canada Research Chair applicants have fair and equitable access to opportunities throughout hiring, retention and advancement. Racialized persons/persons of colour, Indigenous Peoples, persons with disabilities and women have traditionally, and are currently, underrepresented in the Canadian workforce. UM acknowledges that strategies are necessary to ensure that researchers who are members of these groups are better represented among nominations for CRC positions.

To learn more about UM's EDI CRC action plan visit umanitoba.ca/research/chairs



Canoe perspective,
"Nibi Studio."
PHOTO: Danielle
Desjarlais, from *Voices
of the Land – Indigenous
Design and Planning
from the Prairie.*
(see page 17 inside)

Research**LIFE**