



**BRANDON  
UNIVERSITY**

# Passion and Enthusiasm Drive Discovery

RESEARCH CONNECTION



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# Big Ideas in Brandon

From our compact campus on the Canadian prairies to distant locations around the world to the far reaches of the cosmos, research at Brandon University ranges from microscopic to vast in scale.

While the scope is wide, a common thread is that big ideas can and do sprout from a small university. With our main campus located in Brandon, Manitoba, on Treaty 2 land, and a satellite campus in Winnipeg, on Treaty 1 territory, we view our status as a regional university as one of our greatest strengths. It drives us to be responsive to our local area, and to be resourceful.

Our energetic and committed faculty draw inspiration for their research and creative works from one another, from the communities we serve, and from other leading experts around the globe, building connections between Brandon and the world. These connections provide a significant foundation for us to build a vibrant and dynamic academic experience, producing ground-breaking research and first-class education for our students.

In these pages you will be introduced to a small sample of the ambitious and impactful research that takes place at Brandon University. Some of these projects have already been completed, while others are just scratching the surface of their potential. We hope that you will be as amazed as we are proud of the discoveries that take place here at BU.

## About *Research Connection*

These Brandon University research summaries and research features are based on *Research Connection*, a periodical publication intended to provide information about the impact of Brandon University's academic research, creative activities and expertise. *Research Connection* highlights BU research using a regular structure adapted with permission from the ResearchSnapshot clear language format used by ResearchImpact–RéseauImpactRecherche (researchimpact.ca). *Research Connection* is supported by the Office of Research Services and by the Centre for Aboriginal and Rural Education Studies, Faculty of Education. A special thank-you goes out to the Research Support Fund (RSF) for its continued assistance.

Many of the summaries presented in this booklet represent ongoing research, and there are always new findings to report. Find more online at [BrandonU.ca/Research-Connection](http://BrandonU.ca/Research-Connection).

## Research Ethics at Brandon University

Brandon University is committed to maintaining the highest standards of research ethics for all research activities involving animals, human participants and the secondary use of identifiable information.

For research activities involving animals, the Brandon University Animal Care Committee follows the guidelines of the Canadian Council on Animal Care that require that all teaching, research and demonstrations involving animals, receive prior approval before being implemented.

For human research projects, the Brandon University Research Ethics Committee follows Tri-Agency guidelines requiring that BU review and approve any research involving humans or the use of identifiable personal information before any data collection can begin.

BU also has a number of its own policies governing research. See [BrandonU.ca/Research](http://BrandonU.ca/Research) for more information.



## *Agile, Courageous and Inclusive Research at Brandon University*

Be agile. Be courageous. Be inclusive.

All members of the Brandon University community are encouraged to embrace these three important actions in *Mamaawii-atooshke aakihkiwiin*, our new Strategic Plan. These ideals are certainly evident in our faculty at BU and are truly exemplified in their research that you will read about in this collection.

Our size puts us in a sweet spot of being small enough to be agile in our work and mindset, able to adapt quickly and respond to new challenges, while being large enough to possess a wide array of expertise to produce remarkable cross-disciplinary research. We are courageous in our efforts to continually question ourselves and the world around us. Why settle for the status quo if there are ways that we can grow and thrive? Our research promotes inclusivity as we examine the inequities among us and ask how we can incorporate Indigenous and global perspectives into our outlook.

A key metaphor in *Mamaawii-atooshke aakihkiwiin* is the braid, inspired by Indigenous symbolism. In our case this represents the strength that we gain by connecting with one another and interweaving our membership and those who we serve — our students, faculty and staff and the community. Our research is one tool that we can use to establish and maintain those connections. Knowledge gained is meaningless unless it is shared, and there is so much that we can learn from one another.

We see that every day in our university as our faculty spread the insight that they gain from their research

and creative activities to our students. In fact, as you read through these projects you will see evidence of that sharing. These projects are being carried out by seasoned academics with years of world-class work under their belts, by undergraduate students getting their first taste of research, and by everyone in between. They are partnerships within our university, with other institutions and with representatives of our communities.

As we strive to be Canada's finest regional university, we are constantly mindful of our role and responsibility in our community as we work to elevate Brandon and Westman. Many of these projects look very directly through this local lens, addressing uniquely local issues. Others are much more global in scale. This is fitting for a university that is committed to providing accessible education for those from our region but also welcomes students from around the world, all with the common goal of building a better future through knowledge.

I hope that you will enjoy reading and learning from the summaries of this incredible research just as I have. The BU work represented here is something for us all to celebrate.

DR. DAVID DOCHERTY

President, Brandon University



## *Passion and Enthusiasm Drive Discovery*

Over the past decade, Brandon University has made great strides in expanding our research enterprise. A plethora of high-quality research, innovation and creative activity are integral to our practice. Our regularly published bulletin, *Research Connection* (initiated in 2017), summarizes the research of our leading scholars, scientists, artists, and students and highlights to the broader community the research and creative works that are happening in the Faculties of Arts, Education, Health Studies, and Science, and the School of Music at our University. This publication is the third glossy compilation of individual *Research Connection* articles and is itself a showcase for the excellence of research at Brandon University.

The focus of Brandon University's Strategic Research Plan 2021-2025 was the need for every researcher to be able to see themselves within the Plan. Thus, while connected research, collaboration, and interdisciplinary research remain major areas of study at BU, emphasis is also placed on the important contributions of disciplinary researchers to fundamental, methodological, and theoretical research in their fields. The Plan identifies seven primary themes at BU, which highlight our broad spectrum of research and embrace both established and emerging strengths and priorities. The themes are: Rural, Indigenous, and Community Connected Engagement; Social Justice, Cultures, and Identities; Health and Wellness; Biotechnology, Genomics, and Life Sciences; Climate, Environment, and Natural Resources; Fundamental Knowledge and Discovery; and Creativity, Ideas, and Imagination. Throughout this publication, you will

find that these threads are woven through a diversity of research studies.

Research increases our knowledge and enhances our lives. It also benefits our students. Research informs our teaching as faculty members and directly involves many of our students, both graduate and undergraduate in the process. This training of our next generation of researchers is an essential focus at BU. We are proud to engage students in dynamic research opportunities, from their first year as undergraduates through to graduate studies. Our smaller size is beneficial in that many undergraduate students work with faculty on research, opportunities that in larger institutions are reserved for graduate students. By participating in research, students gain critical thinking, problem-solving, analytical, and importantly, leadership skills that are invaluable in every future career.

It is stimulating to be a part of Brandon University as we continue to impact the lives of its students, the city, the community, and the world at large. Research and the pursuit of creative activities are foundational to the existence of a university. I hope as you explore this booklet, you will get a flavour of our passion and enthusiasm.

*Heather E. Duncan*

DR. HEATHER DUNCAN

Associate Vice-President Research, Brandon University

## Duo Fantasy

KERRY DUWORS, BMus, MMus

While the violin-piano repertoire is vast, the canon of standard works continues to dominate programming, pedagogy, and performance. We curated a program that pushes technical merits and artistic boundaries with rarely performed compositions spanning geographical regions, perspectives, voices, and musical styles. This album features three 20<sup>th</sup>-century works for violin and piano based on fantasia—musical compositions with roots in improvisation and free form. This research allowed us to question the connection each composition has to fantasia and the hybridity between Sonata, Fantasy, and Duo. The music of Heitor Villa-Lobos, Arnold Bax, and William Bolcom deserve to be better known. This recording fills a noticeable gap in the repertoire and firmly plants our artistic voice and interpretation into the music archive.

During an artist residency in 2017, my duo collaborator, Dr. Futaba Niekawa (Indiana University), and I surveyed and explored a series of 20<sup>th</sup>-century pieces for violin and piano based on fantasia. The goals of this study were to uncover Duo works that challenge the Classical Sonata form, exhibit strong nationalistic and exotic characteristics, require emotional and interpretative depth, and are rarely performed. In 2018, Villa-Lobos, Bax, and Bolcom were recorded in Banff's Rolston Recital Hall. The final phase of the project involved the distance collaboration between the producer (Seattle, Wash.) and artists (Brandon, Man., and Bloomington, Ind.) to establish the final master recording for Parma Recordings/Navona Records.

We name things to make sense of them, and then names take on a life of their own. We then start adding qualifiers to soften the blow—to equivocate. That is precisely the phenomenon represented on this disc—three works, one a Sonata, one a Fantasy, and one a Sonata Fantasia.

*Fellow researcher: Futaba Niekawa, DMA*

## Embodied music composition: Uncovering layers of meaning through a collaborative process

MATTHEW STECKLER, PhD

Drawing on social constructivist theory and phenomenology, an original creative work is meaningful only to the extent that participants bring intentionality to bear on the work in its lifeworld (which can include their own prior experiences). Therefore, a creative process that asks more from participants in producing real sound and gesture as source material, and justifying those creative decisions narratively, has the potential to be meaningful on intersubjective levels rarely seen. While the music cognition field has demonstrated an important embodied component in music's perception and improvisation, this ongoing research adds implications for how music can be meaningfully composed.

This research examines the lived experience of improvisers working within various social play spaces in a process of embodied composition. Investigators, given different themes, produced their own short recordings and a journal entry explaining their choices.

All investigators noted the purposeful ambiguity of the given theme/assignment and consequent diversity of data; the natural flow to the performances/recordings; the meaningfulness of the process; an increased sense of agency, reciprocity and collaboration; and the participants' openness to having ownership over material and data to be morphed via the group embodied dynamic.

The study can apply to other professional and educational environments to further determine its replicability and yield a rich variety of creative output and meanings.

## Shifts in regular music programming: Engaging Grade 3 boys in the singing process

MELISSA SPRAGGS, BMus, BEd, MMus (c)

Many mixed-gender choral programs in Manitoba and across Canada have low male membership and struggle to recruit male singers. Researchers have found that male attitudes toward singing decline between third and fourth grade. At this age, children become self-conscious and may resist participation in singing. Finding ways to engage boys in singing in Grade 3 could help promote lifelong singing.

Ten Grade 3 boys from mixed-gender classes in rural Manitoba participated. Surveys determined students' preferred activities in music class and music styles, musical backgrounds, and their interests in and out of school. At the end of the study, students were asked to discuss and record how the songs and activities in music class impacted their feelings, attitudes, and engagement surrounding singing.

Strategies explored included student involvement in the selection of musical repertoire, incorporating topics of student interest into singing activities, varied accompaniment instruments, utilizing a psychomotor approach to teaching singing, and the influence of male singing role models, as well as several other effective interventions (e.g., appealing songs, movement, games, creativity, humour, rhythmic speech, and appropriately challenging repertoire). Music teachers can use these strategies to help engage Grade 3 male students in singing, and to help them choose teaching materials that reflect student musical preferences and interests.

# Pieces for peace



MICHELLE LAM, PhD

Director of Brandon University Centre for  
Aboriginal and Rural Education Studies (BU CARES)

The Canadian government holds a two-way street model of integration as an ideal, where both newcomers and Canadians adapt for and benefit from one another. However, the vast majority of settlement and integration education seeks to educate newcomers about Canada, with a paucity of resources dedicated to educating Canadians about the experiences of newcomers. In an environment of increasing populism and xenophobia, research-based resources that can educate and prompt empathy, imagination, and understanding of the experiences of others are needed. This research focuses on the outcomes of a tool developed to meet this need and to provide a launchpad for discussions around topics such as identity, intersectionality, integration, race, culture, values, and more: the *Refugee Journeys Board Game*.

To play the *Refugee Journeys Board Game*, players progress from “Start” to “Finish” around a circular path. They play with an identity card, which details different aspects of their identity, such as age, language ability, cultural background, sexuality, health, and others. As they progress through the game, players pick up experience cards that impact their progression in the game. For example, a card may set them back, cause them to lose time, or move them forward. No two people play the game the same way, and different identities will experience the game differently, highlighting systemic issues and inequalities. After each experience card is played, players engage in a guided discussion about how that experience would impact their identity. Players are invited to share their own experiences with each topic if they wish.

The project involved using the game with three groups of high school students, post-secondary students, educators, and researchers at two different locations in Western Canada. After each game was played, the researcher collected feedback from players through a feedback form. Participants involved in this board game project reported an increase in empathy for newcomer groups arriving in Canada and knowledge about policies, procedures, and the experiences of others. Many identified an appreciation for “putting players in the shoes of refugees.” As one player commented, “As players, you discuss these issues not merely as concepts but as human realities.”

*The Refugee Journeys Board Game is available here: [thegamecrafter.com/games/refugee-journeys](http://thegamecrafter.com/games/refugee-journeys). It can be used to educate community members, students, educators, administrators, or service providers about the integration experiences of newcomers to Canada. Playing a board game can provide people with a space to talk about these issues in a non-threatening environment and can build new knowledge and relationships between players.*

# Rogue, fast-moving hydrogen clouds as a new probe of galactic magnetic fields

BAILEY FORSTER, Physics Student

Our home Galaxy, the Milky Way, is a disk-shaped system of stars and gas embedded inside a spherical halo of low-density gas. The halo is home to rogue, fast-moving clouds of cool hydrogen (High-Velocity Clouds [HVCs]) that rain down vertically onto the disk. Invisible magnetic field lines from the Galaxy extend up into the halo, and energetic particles moving along these lines emit polarized radio waves, illuminating the halo in radio “light”. As that light makes its way to us, a process called Faraday Rotation “imprints” the foreground on this background polarized light by rotating the direction of polarization in a complex but predictable way. Using new radio observations, we discovered the never-before seen imprints left by HVCs.

We observed with the radio telescope array of seven dishes operated by the Dominion Radio Astrophysics Observatory (DRAO) in Penticton, British Columbia. Linking these dishes together effectively “synthesizes” a single large telescope 600 meters wide, allowing DRAO to produce among the finest-detailed maps of any radio telescope on Earth.

The DRAO telescope is able to make images of the hydrogen gas moving towards or away from us at different velocities. The telescope also observes the degree of polarization of the background halo light. This is the degree of alignment of radio waves “waving” in the same direction—if all waves are oscillating in the same direction, we say the radio emission is 100% polarized. Emission from the halo is about 70% polarized, but the HVCs in the foreground change this amount as the light passes through them.

We discovered that HVCs show similar structures to Faraday rotation features in polarization maps—something very unexpected since gas that rotates polarization should be hot and ionized, not cool and neutral found in normal HVCs. Our maps also show that hot gas in the largest cloud is “dragging” the magnetic field lines along as it falls, stretching the field out and wrapping it around the cloud’s leading edge like a volleyball would stretch a net.

This is the first-ever direct observation of HVCs interacting with the magnetic field in the halo. Our discovery is also exciting as it demonstrates that HVCs can be used as a tool for probing the invisible magnetic field in the galactic halo.

*Fellow researchers: Tyler Foster, PhD, Roland Kothes, PhD, Alex Hill, PhD and Jo-Anne Brown, PhD*

## On the generalized fractional Laplacian

CHENKUAN LI, PhD, CHANGPIN LI, PhD, JIANFEI HUANG, PhD,  
& JOSHUA BEAUDIN, Mathematics Student

Fractional calculus is the theory of integrals and derivatives of arbitrary order, which unifies and generalizes the integer order differentiation and n-fold integration. Fractional derivatives provide an excellent instrument for description of memory and hereditary properties of various materials/processes. Fractional calculus is useful for developing sophisticated mathematical models that accurately describe complex

systems. Fractional powers of the Laplacian operator arise naturally in the study of anomalous diffusion, where the fractional operator plays an analogous role to that of the integer order Laplacian for ordinary diffusion. By replacing the Brownian motion of particles with Lévy flights, one obtains a fractional diffusion equation in terms of the fractional Laplacian operator of order  $0 < s < 1$  via the Cauchy principal

# Sketching the shape of space and time

JEFF WILLIAMS, PhD

In 1938, Élie Cartan proposed a geometric approach aimed at creating a classification system—a taxonomy—for the differential equations of calculus. His system depended on finding solutions to an equation, which—because of its exceptional complexity—proved intractable.

My colleague, Dr. Tina Harriott from Mount Saint Vincent University, and I are working on the null-surface formulation of general relativity, which provides a new framework for Einstein’s relativistic theory of gravity. In low dimensions, to be precise, two dimensions of space and one dimension of time, the main equation of the null-surface formulation turns out to be identical to Cartan’s remarkable equation of 1938.

The null surfaces are central to both Einstein’s geometric approach to gravity—where null surfaces represent the event horizons of black holes—and to Cartan’s geometric approach to differential equations—where such surfaces are directly related to the existence and determination of solutions of differential equations in general.

Considerable simplification was achieved by our requiring spacetime to have two dimensions of space and one of time. We made the unorthodox assumption that some of our major dependent ‘variables’ were constant, or even zero. At that point, we began our search. We found two nontrivial solutions of Élie Cartan’s equation—an equation that had remained unsolved for eighty years.

One of these solutions uses the familiar log function and a parameter  $t$ , which can be interpreted as the time that passes when drawing a trajectory across a spacetime of 2+1 dimensions.

$$y = t \div [ t + \log \sqrt{1-t} - \log \sqrt{1+t} + 1 ], \text{ and}$$

$$x = 1 \div [ t + \log \sqrt{1-t} - \log \sqrt{1+t} + 1 ].$$

This solution is interesting because of its simplicity and because the curvature (usually denoted by  $R$ ) of spacetime varies from point to point and depends in a simple way on  $t$ :

$$R = (-1 + 1 \div t^2)^4.$$

When  $t$  is zero, the curvature  $R$  will become infinite and produce a singularity in spacetime—as would occur at the centre of a black hole or the instant of the “Big Bang.”

Our solutions provide insights into the theory of differential equations (through the relationship with the work of Élie Cartan) and into the theory of gravity (through the relationship with Einstein’s general relativity).

value integral. The fractional Laplacian operator of order bigger than or equal to one remains undefined by an explicit integral formula, although there is strong demand in many applications.

Studying the fractional Laplacian through distribution theory is a new approach. Working on this since 2018, we made the first connection between the fractional Laplacian and generalized functions based on Gel’fand normalization, Pizzetti’s formula, and surface integrals in an  $n$ -dimensional space to successfully extend the operator for all orders bigger than zero and even some

complex numbers. We have defined the fractional Laplacian over a new space  $C_k(\mathbb{R}^n)$ , which contains  $S(\mathbb{R}^n)$  as a proper subspace for any order bigger than zero. We presented two theorems showing our extended fractional Laplacian operator is continuous at the endpoints, with examples opening a new direction for defining the fractional Laplacian for complex values by analytic continuation. Results can be used to study many partial differential equations arising from areas in science and engineering. In 2020, we established an explicit integral representation of the generalized Riesz derivative, widely considered nonexistent in the past.



# The amateur beard grower on YouTube



CHRISTOPHER J. SCHNEIDER, PhD

Professor, Sociology

Pogonotrophy refers to beard cultivation, including growth and grooming practices. This research focuses on the role of online media sites in disseminating information about pogonotrophy (e.g., growing advice, grooming techniques, style, etc.) and how social media has contributed to the growth of the beard industry and the “professional beardsman.”

It was the Internet that paved much of the way for amateur beardsmen to turn into so-called professional beardsmen. In the 2000s, Jack Passion established himself as a beard celebrity and parlayed his fame to market beard products online; he is sometimes credited as the first “professional beardsman. Although genetics are generally acknowledged as the primary driver of beard growth, there is no shortage of information and advice on the Internet that promotes the myth or idea that beard products cause growth (they do not). Nevertheless, this myth benefits beard entrepreneurs and their companies. In the early 1970s, according to Grossworth (1971) in *The Art of Growing a Beard*, just one brand of moustache wax was available on the market. There are now dozens of waxes, oils, and balms—an entire beard product grooming industry sold online.

An initial search of YouTube for the word “beard” returned more than four million results. To limit the volume of data, a subsequent search was filtered by “beard,” “channel,” and “view count,” returning the *Beardbrand* channel as the top result. With 1.3 million subscribers, *Beardbrand* is the most popular YouTube channel to feature beard-themed videos. Comments made to all videos with the word “beard” in the title (310 in total) were collected for analysis. This process netted a total of 62,061 comments. Conceptual and relevant data identified during the research process were sampled and categorized into three themes that were constructed from the analysis of comments.

The first theme, the *yeard quest*, is a user commitment to grow a beard for a period of one year—a “yeard. *Beardbrand* heavily promoted the yeard quest, suggesting that viewers let it grow to see what they could grow and imploring users to subscribe to their channel and return for new videos with grooming tips to help them on their yeard journey. User comments also encouraged and supported others on the yeard quest. The second theme, the ideal type, summarized what users believed a beard should look like (full and thick, like the *Beardbrand* models) and not look like (unkempt, bald spots, or deficient hair growth). Users regularly posted questions about the links between beard products like oils and facial hair growth—the belief was oils facilitated beard growth, possibly driving *Beardbrand* sales and the sales of other beard products. The third theme, how to beard, involved a range of advice on living with a beard, how to eat (neatly!) with facial hair, use beard oil, or how to trim, for example. This research finds that *Beardbrand* products, literal oils, balms, and more, but also their cultural products (videos and interactions with users), serve primarily to drive the company itself and the beard product industry more generally.

This research, while it only trims the surface, supplies some preliminary understandings about the role of YouTube in fostering contemporary beard culture online. Analysis of user postings, for instance, provides some needed insight into distinctions between the so-called professional beardsmen and amateur beardsmen. The research findings can be used to assist in developing a more critically engaged audience of amateur beard growers and pogonophiles (lovers of beards).

## Being African, male, and an international student negotiating mental health and wellness

ADAMS ABDUL SALAM, MRD, RACHEL HERRON, PhD, MAIRO AHMADU, BA, CANDICE WADDELL-HENOWITCH, PhD, JONATHAN A. ALLAN, PhD, KERSTIN ROGER, PhD, & MARGARET DE JAGER, BA

Values, practices, and beliefs associated with being a man can influence men's relationships with healthcare. Generally, men are less likely to engage with the healthcare system and thus may not seek support for mental health issues. Existing research typically does not focus on gender, "race," and culture as factors influencing the mental health experiences of men international students, even as they are more pronounced than among their women counterparts.

To understand how gender, race, and culture influence men international students' experiences of mental health and wellness, Adams Abdul Salam conducted small group discussions and interviews with 12 international students on understandings of "manliness," mental health, and participants' common experiences. To participants, a man was someone physically and emotionally stable and takes charge of and deals with their problems. One equated being a man to a warrior. Even though participants often described support networks,

they indicated they would not rely on them for emotional support. Even when they considered seeing a counselor, participants decided they needed to deal with it on their own. Participants explained that expectations to send money "back home," pay increasing tuition fees, balance work and school, and buy health insurance contributed to their stress. They felt isolated due to racism and a lack of culturally specific supports and opportunities. Physical separation from neighbours and communities further contributed to loneliness.

Findings underscore the need to provide more culturally sensitive support to African male international students (e.g., mentorship programs, cultural associations), the need for more opportunities to connect with the larger community, and the need to strengthen international students' advocacy groups and mechanisms in universities to address work, tuition, and health care stressors that exacerbate mental health problems.

## Men, masculinities, and infertility

JONATHAN A. ALLAN, PhD

Men's infertility has become a growing concern in repeated news reports and scientific studies about the declining quality and quantity of sperm and sperm reproduction. Recent headlines noted that COVID-19 might cause male infertility. Against this backdrop, this study considers men, masculinities, and infertility to provide a cultural analysis of how we put into words and images men's experiences of infertility.

Drawing on examples from popular culture, literary studies, and film studies across the twentieth century, which are mostly in English (but also from Spain and Latin America), the researcher focuses on how stories of men's infertility are told and represented across a variety of

media. These experiences of fertility and infertility are compelling and nuanced, broad and diverse, and at times, unexpected, ranging from the tragic and melancholic to the comedic and hilarious. The stories that are told call into question not only masculinity but also fatherhood, men's health, and how we think about the family.

While the study is invested in all representations of infertility, it responds directly to growing anxieties and concerns about men's sperm production over the course of the twentieth century. In the final stages of the project, the future of infertility and the impact of COVID-19 is considered. Ideally, the final product, a book titled *Men, Masculinities, and Infertilities*, will be of interest to a range of readers.

## Mental health: Are men talking about it?

RACHEL HERRON, PhD, MAIRO AHMANDU, BA, CANDICE WADDELL-HENOWITCH, PhD, JONATHAN A. ALLAN, PhD, KERSTIN ROGER, PhD, MARGARET DE JAGER, BA, & ADAMS ABDUL SALAM, MRD

Our recent research found that men in rural areas wanted to talk about their mental health, but they identified barriers to expressing their mental health to friends, in their community, and at work.

There are challenges finding safe spaces to talk about mental health. Most study participants talked to a spouse about their mental health. A smaller number talked to siblings or parents about their mental health. Notably, several mentioned that they did not discuss their mental health with their fathers because they believed they would not "get it." Some participants expressed difficulty talking with their male friends about their mental health, and others discussed actively building "really healthy friendships with other men" so

they could "spread their qualms." For many participants, their work environment and community contributed to their stress and isolation, specifically the independent and competitive nature of rural work. Other participants said community gossip prevented them from talking about mental health. Finally, participants identified a lack of opportunities in rural communities as contributing to mental health problems and a lack of spaces for social connection.

There are needs for community-based responses that address rural practices and values about what it means to be a man, and for different places for men to express their mental health needs including more supportive communities, work environments, and social spaces.

# Assessing equity in Brandon's foodscape



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Coordinator of this Study

The health status of community residents is largely driven by the social determinants of health, which are the economic and social conditions that shape the health of individuals and communities as a whole. The foundation of health equity is the belief that all people can reach their full potential and should not be disadvantaged because of their social and economic status, social class, race, ethnicity, religion, age, disability, gender, gender identity, sexual orientation or any other socially determined circumstance. Health inequities are systematically associated with underlying social disadvantages. They reflect unequal opportunities to be healthy and are therefore considered to be avoidable, unjust, and unfair, making food security a social justice issue.

The objective of this study was to explore food security through an equity lens in Brandon, Manitoba. Food security refers to all people at all times having access to sufficient, safe, nutritious food to maintain a healthy and active life. Community food security includes social concerns, access to food, quantity and quality of food available, and policies and programs that support food security. Brandon University and the Brandon Neighborhood Renewal Corporation teamed up to explore what is in place within the City of Brandon that promotes food security and what ought to be in place within the City of Brandon to do so.

This study gathered information about affordability, accessibility, availability, and preferences regarding food choices in Brandon, the ability of residents to use that food safely, and existing food-related resources and policies in the city. Data

were gathered through a community-wide household survey, key informant interviews with community stakeholders working with potentially food-insecure residents, and an environmental scan of existing community resources and food-related policies within the city of Brandon.

Study participants reported varying degrees of public awareness about community food resources and services. Food hampers and the local soup kitchen were identified as being accessed most often. Farmers' markets were well used, but perceptions about the higher cost of fair trade food products prohibited many individuals from purchasing them. There was strong support for community gardens throughout the city. The majority of respondents obtained their foodstuffs from local supermarkets; however, Geographic Information System mapping of retail food outlets provided evidence of food deserts in Brandon. Food deserts occur when people have limited access to healthy food due to socioeconomic constraints or health issues that limit their mobility. This study found a number of high-risk areas for food insecurity and two specific food deserts: one on the eastern edge of downtown and the other in the southern portion of the city. Those residing in these areas may be forced to purchase their groceries at a local convenience store or find the means to travel a greater distance. This finding is important for urban planning and healthy public policy development.

Findings from this study support and inform food-related programming and policies by local agencies and organizations and the municipal government.



## How waxworms eat plastic

HARALD GROVE, MSc Student,  
& SACHI VILLANUEVA, MSc Student

Waxworms are the caterpillars of the greater wax moth, *Galleria mellonella*. These insects are common pests of apiaries and feed voraciously on honeycomb. They also voluntarily feed on polyethylene, a type of plastic commonly used in shopping bags. Because their natural diet of honeycomb is chemically similar to polyethylene, the waxworm may have evolved the necessary biochemical adaptations to degrade plastic wastes.

Plastic resists degradation leading to accumulation in landfills and marine ecosystems, negatively affecting our environment. As a solution, research has focused on identifying microorganisms like bacteria and fungi capable of plastic biodegradation. When isolated, these microorganisms can biodegrade plastics, albeit very slowly. However, when a waxworm with an intact intestinal microbial community (microbiome) consumes plastic, the biodegradation process is expedited. Our research solidifies the essential partnership between the waxworm and its microbiome to allow for polyethylene breakdown and provides an additional research avenue to develop new methods of plastic bioremediation.

This research revealed that many digestive processes of honeycomb-fed caterpillars were similar in polyethylene-fed larvae, suggesting normal intestinal function on a plastic diet. While their normal metabolism is geared towards deriving energy from bulky wax comb hydrocarbons, these pathways can be co-opted for the degradation of synthetic polymers like polyethylene. This research provides evidence that aspects of microbial and animal metabolism work together during polyethylene degradation. Enzymes from the animal and resident gut bacteria may be combined to develop a technology that may be used to degrade our plastic waste in the future. Further research should look at identifying and exploiting the enzymatic machinery involved in this pathway.

*Fellow researchers: Bryan Cassone, PhD, &  
Christophe LeMoine, PhD*

## Fen peatland restoration and ecotone creation in southeastern Manitoba

PETE WHITTINGTON, PhD, & MARIA STRACK, PhD

Peatlands cover only 3% of the Earth's surface yet store more carbon than all the world's forests combined. In Manitoba, nearly a third of the land area is occupied by peatlands. A very small percentage of Canada's peatlands is used for horticultural peat production. Prompt and active restoration following peat extraction is critical to ensuring these sites quickly become carbon accumulating ecosystems again, including an ecohydrological connection with the surrounding landscape.

This five-year research project aims to test new, and refine existing, restoration techniques and adapt them to the prairie climate. We found that, given the drought conditions that the province experienced in the summer of 2021, the peatland sites were also very dry. No water table was present within the peat profile in the peat extraction areas, and water tables were also very deep or absent in the natural areas. This meant that there was little to no meaningful ecohydrological connection present, which is not uncommon at these sites' pre-restoration. A field visit in October showed slightly higher water tables in the natural areas, but still, no water tables were present in the peat extraction areas. The DEM showed very favourable conditions for the restoration project, with a relatively flat landscape and less than 50 cm in elevation changes across most of the site; this will make maintaining a consistent water table depth across the site much easier to manage. The tasks for 2022 will include monitoring of carbon dioxide and methane emissions from the site as well as continued hydrological monitoring.

## Rethinking sequence stratigraphic models: Insights from the Book Cliffs, Utah-Colorado

SIMON A. J. PATTISON, PhD

Sequence stratigraphy is a widely used and proven technique for unraveling the geological history of coastal areas worldwide. Stratigraphic patterns are driven by changing sea levels (climate), sediment supply (climate, tectonism), and subsidence rates (tectonism). Conventional sequence stratigraphic models are based on exceptional outcrop exposures of fluvial (river), coastal plain (lagoon, swamp), shallow marine (delta, beach, shoreface), and shelf environments in the 300-kilometre-long Book Cliffs of Utah and Colorado. The Book Cliffs outcrop belt has some of the best exposed fluvio-deltaic deposits in the world.

A multi-decade-long research program has exposed serious flaws in the conventional model. This was an intensive field-based research program with over 1,100 days in the field. The study area extends across the entire length of the Book Cliffs, from east-central Utah to western Colorado. A critical reexamination of the archetypal Desert Member to Castlegate Sandstone stratigraphic interval in the Book Cliffs of Utah-Colorado revealed that, contrary to earlier

conventional models, there is a clear temporal, genetic, and spatial linkage of nearshore terrestrial and shallow marine deposits. Stacking patterns are predominantly driven by fluctuations in sediment supply and not relative sea level change. Hence, widespread application of the conventional sequence stratigraphic model has led to an over-estimation of sea level rises and falls. An alternative sequence stratigraphic model showing temporally and spatially linked, laterally adjoining nearshore terrestrial and shallow marine facies belts is the best fit for the Campanian Book Cliffs strata. This model should be widely applicable to similar nearshore terrestrial and shallow marine settings worldwide. Applications include improved correlating and modelling of reservoir and non-reservoir rock bodies across terrestrial and shallow marine facies belts. The research results could have major implications for predicting the occurrence and continuity of sandstone reservoirs (i.e., hydrocarbon and freshwater reservoirs) and for interpreting the history of sea level changes. It will also add to the growing body of scientific knowledge on the scale, timing, and frequency of natural environmental change.

# Build back better in recovery:

A key to the successful community  
recovery from a disaster



ETSUKO YASUI, PhD

Associate Professor,  
Applied Disaster and Emergency Studies (ADES)



**R**ecovery from a disaster not only takes a physical and emotional toll on individuals but also involves prolonged and infuriating processes. This is especially true if the affected communities lack access to adequate assistance to manage their recovery. During a disaster, the local government is overwhelmed and unable to provide appropriate assistance to those who are vulnerable. As a result, emergent organizations are often created to serve vulnerable communities, which the disaster-affected government cannot support.

If a community does not have the appropriate knowledge and skills to prepare for a disaster, it will suffer greatly if a disaster does happen—especially now that weather-related disasters are more frequent and intense due to the climate change impacts. More and more communities are affected by disasters, and some are affected repeatedly. It is important for these communities to be able to recover fast before the next disaster strikes and increase resilience during the recovery period.

“Build back better in recovery” is widely promoted by the United Nations’ Sendai Framework for Disaster Risk Reduction as one of its priorities for action. While this objective is essential to minimize future risks, many communities lack the readiness to plan and implement successful recovery.

This study suggests that even a community with limited resources can achieve recovery with help from emergent organizations. I examined the emergence of the volunteer group Machi-Communication—established in the aftermath of the 1995 Kobe Earthquake—to understand how this community-based organization assisted the Mikura community in achieving its recovery. Many emergent organizations tend to be short lived because their services are no longer needed when the immediate needs of the communities are met. Emergent organizations leave without a trace, and there is no mechanism for them to preserve their knowledge and experiences to be utilized by future emergent groups. Machi-Communication is one of the few organizations remaining active today. It

Even a community with limited resources can recover with help.

continues to support the Mikura community and other communities affected by different disasters. This study presents its accumulated wealth of knowledge and skills.

Machi-Communication was created by young, spontaneous volunteers who did not have any experience as disaster volunteers prior to the 1995 Kobe earthquake. Today, Machi-Communication is a well-established non-profit organization that continues to contribute to meeting immediate recovery needs and building local knowledge, enhancing community resilience, and sharing knowledge and expertise for safer communities. This transformation was made possible by the people involved in this community recovery. They shared their concerns and future prospects, discussed collective problems, and found meaningful ways to approach issues. This emergent organization learned how to do it better and work together—ultimately leading to its organizational growth.

The research can aid communities and the general public in developing disaster plans. Practitioners and governments can use this research to develop policies and frameworks to improve community disaster management.

## Suicidality in rural and remote communities: Stakeholder conversations

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The suicide rate is higher in rural than urban communities (Hirsch, 2006; Hirsch & Cukorwicz, 2014; Singh et al., 2013). Stakeholder Conversations were held in six rural communities across Canada (British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, and Newfoundland and Labrador) to develop recommendations for future research and knowledge translation related to suicidality in rural Canada. Stakeholders included community members, community leaders, and those in the health care sector, education, research, or other related occupations. Participant discussion took place in ZOOM breakout rooms after a presentation on the scoping review findings. A round table discussion following breakout rooms provided the opportunity for participants to share findings of significance and any final comments.

Barriers identified to seeking help were rural culture, masculine norms, and stigma. Rural culture tends to be close-knit, which

affects anonymity/confidentiality when seeking help. Limited published research explores the lived experience of suicidality in rural communities, which stakeholders felt was missing from the research. Qualitative research into suicidality in Canadian rural communities is also missing. Many stakeholders (72%) had personal experiences with suicide, losing family, friends, community members, or clients to suicide, and/or having battled with suicide ideation/attempts themselves. Stakeholders indicated those with lived experience with rural suicide have valuable information for developing prevention, intervention, and postvention programs; they are an important piece of the solution and ready to start the conversation to reduce the incidence of suicide in rural communities. *The most voiceless people are the people that are dead, they can't speak to us ... so sadly we're the closest to a voice that these people are having...* (Roy, Manitoba).

## A scoping review of suicidality in rural and remote communities

BY KYRRA HUNTER RAUCH, BA (Hons), DONNA EPP, RN, BScN, CDE, JESSE WINDSOR, BSc (Hons), MA, JENNIFER DAUPHINAIS, MA, RACHEL HERRON, PhD, STACEY LEE, BA (Hons), MLIS, SHARRAN MULLINS, RPN, BA, BScPN, DOUG RAMSEY, PhD, KIM RYAN, RPN, RN, BScPN, MEd, ANDREA THOMSON, RPN, BScPN, MPN, & CANDICE WADDELL-HENOWITCH, RPN, MPN, PhD

A scoping review, which synthesises the literature on a particular topic, revealed a lack of research on suicide in rural Canada. This is concerning as the suicide rate has been found to be higher in rural and remote communities. A search string of relevant terms was entered into seven academic literature databases identified as relevant to the project. Articles were included if: (1) they were published between 2009 and July 2020 and (2) examined suicide or suicide-related behaviour in rural communities.

Based on a full-text screening of 19,719 articles for a larger project, 63 Canadian articles remained, 39 of which did not focus on Indigenous communities and contexts. Many of the studies reviewed sought to identify risk factors that influence suicide. Rural residence was the most prominent risk factor—regardless of age—and can be

associated with additional risk factors, including agricultural vocation, access to means, and limited access to mental health care; male sex was also a prominent risk factor. Urban residence, female sex (more likely to attempt suicide, but less likely to complete suicide), and social support, particularly family, were identified mitigating factors.

Interventions are aimed at individuals at risk for suicide/suicide-related behaviour, with the goal being prevention. Only one intervention was identified, and the results have not yet been published. No articles were found on postvention regarding support for individuals or families following a suicide attempt or death. This review also identified gaps in the current literature published on rural suicide in Canada, including a lack of qualitative research and the need for more intervention and postvention research.

# How does COVID-19 stress impact young adults' mental health?



BARBARA GFELLNER, PhD  
Professor Emerita, Department of Psychology

The COVID-19 pandemic caused an increase in mental health problems among young adults. This may also lead to further complications as it occurs at a time in their life when young people are negotiating identity issues in education, vocational pursuits, relationships, values, goals, and future planning. Hence it is important to monitor the prevalence of mental health issues of young adults and determine how they may alter over time to provide appropriate supports for students' well-being.

This research highlights cross-sequential findings on university students' mental health before the pandemic and after its onset with the imposition of social and physical restrictions and classes taught by distance methods. As well, the way in which COVID-19 stress perceived by students is associated with psychological difficulties and dysfunctional identity development provides important directions to enhance the provision of support and counseling services.

This research utilized data from an ongoing cross-sequential study on student adjustment and functioning at university. It enabled the comparison of students' responses from the pre-COVID-19 (Fall 2019) cohort with those of the subsequent COVID-19 (Fall 2020) cohort. The online survey included demographic information and standardized measures: the Identity Distress Scale (Berman et al., 2004) and the Counseling Center Assessment of Psychological Symptoms [CCAPS] (Locke et al., 2012). In addition, the COVID-19 cohort rated on a 5-point scale "the extent to which s/he has been feeling nervous, anxious, on edge, or stress because of COVID-19.

Each cohort included approximately 300 students (Mage = 19.5; SD = 2.1 years; 82% female, respectively). As expected, the COVID-19 cohort had elevated scores for psychological symptoms on the CCAPS-Distress Index and scales for Depression, General Anxiety, Social Anxiety, and Academic Distress. Lower alcohol and drug use was indicated by the Fall 2020 students, which may be due to the lack of social gatherings with friends and physical confinement. Most COVID-19 cohort students (61%) reported that they felt COVID-19 stress often, frequently, or much of the time. Significant correlations were found between psychological symptoms, identity distress, and perceived COVID-19 stress. Apart from direct effects between these variables, the analysis (using statistical techniques of Hayes, 2018) supported: (1) the indirect role of psychological symptoms as a mediator linking perceived COVID-19 stress with identity problems; (2) a significant interaction between perceived COVID-19 stress and psychological symptoms indicating a moderating influence; and (3) specifically, psychological symptoms moderating the relationship between perceived COVID-19 stress and identity distress among students with low to average but not for those with elevated psychological difficulties.

These results indicate the need to focus on psychological symptoms and how they may change over the course of the pandemic to promote optimal identity development. The complexity of mental health concerns related to the pandemic are underscored. The findings indicate a need to focus on identity difficulties in supportive and counseling services for students with different psychological problems.

## The way of the Kalmyks: Early documentation of their culture

PAUL SHORE, PhD

The Kalmyks (or Calmuks) are a people indigenous to Southern Russia, having emigrated there in the early 17<sup>th</sup> Century from Mongolia. Despite experiencing persecution, colonialism, deportation, and exile, they have preserved their language, music, and many of their folkways, and Kalmyk culture is undergoing a revival. Today Kalmykia is a constituent republic of the Russian Federation.

In 1700, Catholic Jesuit missionary Jan Milan journeyed to the land of the Kalmyks. While there, he learned some of their languages, met people of all social classes, and had some hair-raising experiences. He observed their religious practices, astronomical and mathematical knowledge, music making, dancing, and feasting and learned how traditional spiritual practices had combined with Buddhist beliefs. Milan's account of his encounter with the Kalmyks ended up in the National Library of the Czech Republic.

I ran across the only scholarly article done on Milan and his visit, done by a Russian working in Prague during the Nazi occupation of that city (an intriguing story in itself!). With the help of colleagues around the world, I put together a study of what Milan wrote and drew, requiring reading the manuscript in Latin and analyzing passages that reproduced Kalmyk language, prayers, and incantations. The artwork, showing traditional Kalmyk dress, warfare, daily life, and ancient tombs on the Crimean Peninsula, was also studied carefully.

Milan's manuscript is not known to scholars of Kalmyk or Mongolian culture and is thus of great interest, especially since Milan's illustrations and documentation of Kalmyk written language are probably the oldest records in existence. By examining what Milan understood and reported on—as well as noting what he did not understand—we can gain insights both into the Eurasian Indigenous culture in 1700 and the approaches Westerners used when reporting on Indigenous cultures throughout the world, including in Canada.

## *Mésentente Cordiale:* Italian policy and the failure of the Easter Accords, 1937–1938

BRUCE STRANG, PhD, FRHistS

British and Italian representatives signed eight agreements, commonly called the Easter Accords, on April 16, 1938. The various agreements aimed to settle all outstanding disputes between the two governments, and it appeared that both Powers had committed to observe the territorial status quo in the Mediterranean basin. However, Benito Mussolini and Neville Chamberlain had very different aims; two years later, fascist Italy and Britain were at war.

The Italian government pursued limited tactical aims in these agreements, wanting to make as few concessions as possible while securing official British recognition of the Italian defeat of Ethiopia's military in 1936; rejecting French participation in these accords to prepare the ground for a war to seize Tunisia, Corsica, Nice (Nizza), and parts of Savoy from France; and targeting Anthony Eden, British Foreign Secretary, as diplomats feared he sought to block Italy's expansion in the Mediterranean, even at the risk of war. The Italian government eventually secured British recognition and orchestrated Anthony Eden's resignation from the Cabinet. Neither side gained a tremendous advantage from the accords; they could not reach a genuine meeting of the minds.

Archives in Italy and Britain provided evidence of Italian foreign policy and debates about policy in the British Cabinet. The digital revolution made some British Cabinet and military planning documents available online, and diverse published works rounded out the sources of research. This research will inform debates in history and political science about failures to prevent war in the 1930s, showing the dangers of wishful thinking among government leaders. It provides evidence that seemingly comprehensive accords or peace treaties can have such divergent interpretations that the tightest pacts can fail. This research shows the vast intellectual gulf between those in the 1930s who pursued peace through conciliation and those who sought to expand their territory and resources through threats and violence.

## The Qur'an up close

PAUL SHORE, PhD

Those who understand (or misunderstand) the message of the Qur'an are in the news every day. This research looks at a rare document written in 1622 by Ignazio Lomellini, a Jesuit priest from Genoa, Italy, who transcribed the Arabic document and translated it into Latin. The project began when I noticed no one had studied this manuscript; it had sat in an Italian library for more than a century. I left for Italy to look at the manuscript, spending almost 3,000 hours studying Arabic and consulting with international colleagues, with progress still to make.

The insights (and prejudices) of Christians of that time regarding the Qur'an and Islam are laid bare. Because this translation is a "rough draft," with many words and phrases crossed out and replaced, with notes that Lomellini wrote to himself, the manuscript captures how the translator thought and made decisions. Did

Lomellini make an accurate translation? Often it is most informative when he did not, since his mistakes tell us about the resources he had and thus about what other people of his time and place could learn about the Qur'an. I worked on translations of the Qur'an by other Western Christians of the period and then delved into the translator's attempts to bridge the grammar, syntax, and way of thinking between the Qur'an and his own time and place—a gap of more than a thousand years and thousands of miles. I also explore the commentaries that Lomellini wrote on the Qur'an, which hope to convert Muslims to Christianity. A major academic press has expressed interest in a book on the manuscript.

This study can help us assess modern translations of the Qur'an and to appreciate—and critique—the work modern translators have done on one of the most influential books in human history.

## Sir Alexander Cadogan and the Steward-Hesse affair: British cabinet politics and future British policy, 1938

BRUCE STRANG, PhD, FRHistS

This research explores Neville Chamberlain's attempts to establish a secret channel through George Steward, his Press Secretary, and Fritz Hesse, a Nazi official in the *Dienststelle Ribbentrop*, to circumvent the British Foreign Office. This talk explores the government's actions to halt Chamberlain's unconstitutional activity, providing interesting insight into British Cabinet politics before the Second World War and the policy of appeasement. It also highlights the great perils for international relations and national defence when politicians ignore evidence and trust their gut feelings about political leaders.

Hitler refused to cooperate and follow up after meeting Chamberlain, Édouard Daladier, and Benito Mussolini in Munich, September 1938, so Chamberlain sent Steward to meet with Hesse to convince Hitler to follow Chamberlain's preferred path of conciliation, disarmament, and peace. MI5, the Security Service, learned of this channel. Sir Alexander Cadogan, the top civil servant in the Foreign Office, then debated how to curtail Chamberlain's activity and whether to inform his boss, Viscount Halifax. In the end, Cadogan and Halifax sought to shut down Chamberlain's efforts to sidestep the Foreign Office and over time limited Chamberlain's attempts to appease Hitler.

Research was conducted in the National Archives in Kew, London; through online records of British government documents digitized by the National Archives; and with letters, papers, and diaries of British politicians, civil servants, diplomats, and military officers. This research furthers evidence of the growing split within the Cabinet regarding Chamberlain's continued appeasement of Hitler. It foreshadows the change British policy would undergo and the outbreak of war in 1939. This should lead Canadian Prime Ministers to think carefully about their recent moves to curtail the power of the Cabinet Ministers and Members of Parliament and lead them to decide to reverse the increasing tendency of Prime Ministers to see themselves as Presidential figures.

# When “just doing my job” just isn’t enough



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**T**his study explored situations where registered nurses (RNs) acted in accordance with the professional scope and role description, policy, and procedure but were perceived to be harsh, uncaring, or insensitive. Fourteen RNs from Manitoba shared stories of their challenges and experiences, coping strategies, and recommendations for change. This provided an opportunity for participants to share their stories and identify strategies to improve the working environment for registered nurses in Manitoba.

The participants shared experiences of when they felt they were judged as being harsh or uncaring. They provided examples such as setting limits and enforcing boundaries with clients and family members, providing negative feedback to students and sometimes failing them for unsafe practice, and following policies and directives from management. Participants explained why they acted the way they did in a particular situation as part of their nursing roles and responsibilities. Although there may have been discomfort, discontentment, and difficulties—at the end of the day—the participants advised that they were just doing their jobs in accordance with the scope of practice and organizational policies and procedures.

Two themes emerged from the interviews: (1) feeling judged and (2) system issues. Feeling judged related to the nurse’s image in terms of the public’s perspective and expectations of a “good nurse” as well as the individual’s personal image and reputation. System issues were evident in relation to limited resources in health care, the availability and education of those in leadership and administrative positions, intraprofessional and interprofessional team issues, and nurse abuse.

Participants were asked how they coped with the difficult situations they had shared. Responses regarding coping and resilience were evident through the themes of reflective practice, knowing self, practicing self-care, having strong work and personal relationships, and seeking formal support and professional help.

Recommendations were sought from the participants and categorized into the following themes:

1. **Relational practice** — This included the provision of client-centred care while ensuring that team members take care of each other with kindness, compassion, and acceptance.
2. **Talking it out** — All participants discussed the importance of and need for opportunities to debrief.
3. **Leadership** — Participants appreciated the complexity and scope of leadership roles but needed leaders to be present (available in the

workplace), competent (provide education regarding leadership), and compassionate.

4. **Seek support** — Participants described the need to seek formal and informal supports.
5. **Education** — Several participants identified the need for education about conflict management, managing difficult people and situations, and how to have difficult conversations. Some also noted the need for ongoing education for the public regarding the role of the nurse.

This research provides recommendations regarding nursing practice, leadership, and education.

## Favouritism in competitive sports: Relationships with general self-worth & positive experiences

SHANNON GADBOIS, PhD

Previous research in this area (e.g., Gadbois et al., 2019) emphasized that athletes experience greater general self-worth as well as psychological benefits if they are engaged in their sports. Though organized sports offer a broad range of opportunities for positive experiences, the context of competitive sports may present unique situations with negative experiences, and if those experiences are significant enough, they may ultimately lead to lower general self-worth and/or disengagement from sports altogether. Although some athletes in competitive team sports will be perceived as more capable than others, it is a problem when differential treatment is perceived as preferential treatment (favouritism). The purpose of this research was to study athletes' perceptions of favouritism related to their general self-worth, engagement, and positive experiences in their sports.

Competitive sports team athletes were asked to describe themselves as athletes and report their experiences on many topics, including opportunities

for skill development, goal setting, personal/social skills development, and perceptions of favouritism toward others in their sport. Youth also completed a measure of general self-worth and sport engagement. Consistent with previous research, athletes with more experience playing competitive sports also reported more opportunities for benefits like greater social skills development and general self-worth. Those reporting greater self-worth had a stronger perception of their sports ability, psychological engagement in their sports, and perceived social/personal benefit. In contrast, those reporting a greater perception of favouritism in their sports also reported more negative experiences and generally lower psychological engagement and self-worth. Perceived favouritism was a significant predictor of general self-worth above perceived sport competence and engagement. Coaches may pay close attention to what each athlete contributes and should clearly identify and communicate the roles of all team members and promote opportunities for all athletes' development.

## Not just for muscle! Creatine supplementation and fat loss in older adults

SCOTT FORBES, PhD, & JOEL KRENTZ, PhD

As people age, they tend to lose muscle and gain fat. The prevalence of obesity in aging adults has risen substantially over the past few decades, and the risk for many chronic diseases is elevated with an increase in body fat and loss of muscle mass. As such, finding effective and sustainable interventions that can positively impact body composition (increase muscle and/or decrease fat) as we age is extremely important. One promising intervention is the combination of creatine (a naturally occurring nitrogen-containing compound) and resistance training (a well-known strategy that prevents the loss of and increases muscle mass and strength in adults of all ages). Despite a large body of evidence, nearly all studies have focused on examining the impact on muscle, and to date, no one has systematically considered the impact of creatine and resistance training on fat mass in humans.

Studies that met our inclusion criteria (randomized controlled trial at least five weeks long, with participants aged 50+, a placebo group, and reported fat data) were included in our meta-analyses. Those who resistance trained and supplemented with creatine experienced a greater reduction in body fat percentage compared to those who resistance trained but ingested a placebo. The creatine group also lost a half kilogram more fat mass; however, this was not statistically significant. Creatine, a safe supplement for healthy adults, can be used in conjunction with resistance training to enhance muscle mass and reduce body fat percentage. This study allows researchers and practitioners the opportunity to examine creatine supplementation from a holistic perspective, suggesting it can positively impact body composition. These findings may be clinically meaningful on a population level and suggest creatine may play a dualistic role in combatting long-term muscle wasting and increasing obesity in the aging population.

## The costs of care in contemporary poetry by women in Québec

DOMINIQUE HÉTU, PhD

This project examines how ambivalent and problematic care forms trigger different responses in contemporary poetry collections written by women in Québec, showcasing the significance of literature for confronting, exploring, and imagining the costs and ambivalences of care. The collections show the political and cultural interweaving of caring practices that perpetuate oppressive structures and those that allow healing, hospitality, and solidarity. The collections' shared concerns about embodied suffering and defiance to reclaim space uncover a promising cultural, ethical, and political discourse on vulnerability and disruptive care through poetic work.

The language and strategies found in the collections interrogate care-related and patriarchal violence that shapes, disrupts, and haunts the bodies found in poems, bodies in crises that claim hospitality and agency in hostile and caring worlds. Drawing on intersecting research in feminist care ethics, vulnerability studies, and comparative literature, I looked at how poetry complicates and challenges normative discourses on care and reimagines how power dynamics operate/impact caring practices.

Collections highlight the interconnection between autonomy and dependency and the multitudes of care. These dynamics often reinscribe minoritized subjects in essentialized and naturalized roles of caregivers or receivers subjected to practices that dismiss/deny their needs and agency. The texts also offer a critical thinking of care by imagining new relational models through intertextuality, figurative language, and symbolism. Thus, this poetry not only models philosophical or political configurations of care ethics; it contributes its own knowledge to lived experiences of pain and hostility. Texts address care as a historical and essentialized source of injustice and a radical, transformative category for rethinking subjectivity, vulnerability, and hospitality through form, poetic discourse, and symbolic worlds. Literature has the potential for assessing and at times pushing back against oppressive care practices and institutions. This research stresses a lot remains to address the ubiquitous presence of care.

## Biochemical effects of a schizophrenia-associated gene mutation

NEAL MELVIN, PhD,  
EMIL REID, BSc (Hons),  
& KANISHA PATEL, Honours Student

Schizophrenia is a condition that causes disordered thought, hallucinations, delusions, and short-term memory problems. Currently, medications used to treat the disorder do not address all symptoms. This research will determine the functional effects, if any, of a particular schizophrenia-associated gene mutation in the calcineurin gene. This gene has been associated with short-term memory deficits in experimental animals and therefore may account for these same deficits in humans with schizophrenia. This may lead to the development of new drugs aimed at addressing this currently under-addressed symptom.

We are using a variety of recombinant molecular biological methods to study mutant calcineurin. We cloned the gene for human brain calcineurin and are in the process of having bacteria produce large amounts of the normal version of its protein as well as the mutated version found in some schizophrenia cases. Once produced and purified, we will test how the mutant version performs relative to the normal version. Since calcineurin is an enzyme, we will use an approach to measure how well it performs its specific chemical reaction. This will give us a readout of whether there are functional deficits associated with the mutation.

So far, we have cloned the gene and inserted it into bacterial cells that are specialized to produce human proteins. We are now determining the conditions under which we can produce large amounts of it for purification and functional tests. If we determine there is a deficit of function in the mutant protein, this may explain why short-term memory deficits occur in the disorder. It may therefore provide an opportunity to target the function of calcineurin with specific drugs to increase its activity.

## Caring masculinities and fathering on the Prairies

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CANDICE WADDELL-HENOWITCH, PhD, & KERSTIN ROGER, PhD

Men's lives are changing, and so too are their ideas about fatherhood. For this study, we interviewed 24 rural men from southern Manitoba about their thoughts and experiences of fathering and how it is affected by mental health and wellness. Drawing on caring masculinities, the research shows how the men's desire to be good fathers, perhaps even better fathers than their fathers. In thinking about men's mental health and wellness, we argue that fatherhood can be an important motivation for improving and tending to one's own mental health and wellness as well as that of the community.

Studies seldom consider fatherhood and mental health together, and when they do, they generally focus on the stress of becoming a new father. In this research, we explore how men experiencing mental health problems found motivation, relief, and wellness in fathering.

Over the course of our research, fatherhood emerged as a key theme related to mental health and wellness for the majority of men. Men

in the study spoke about fatherhood and, in particular, how they struggled to challenge normative masculinities when working with their fathers, their experiences of aggression, desires to be a better father than their father, and their reflections on changing practices and ideas about fatherhood and masculinity.

We argue that fathering can and does provide opportunities for rural men experiencing mental health and emotional distress to practice caring and connecting with their children in ways that support their mental wellness and sense of identity as men. This research contributes to research on changing masculinities and the consequences for challenging normative masculinities in rural space. It also contributes to health and social policy by highlighting the important role of fathering in mental health as well as equitable social policy, especially in light of current debates about family care and labour force participation.

## Grade 9 effects of video gaming and texting in northern Manitoba

MARION TERRY, PhD, & AMJAD MALIK, PhD

Research on factors that affect Grade 9 students (social relations, extra-curricular activities, and leisure-time activities) examined correlations between various factors and academic performance. Our findings (from a small sample of 21 northern Manitoba Grade 9 students' attendance and final marks in core subjects and a survey) yielded notable correlations, many statistically significant. Results affirm school counsellors' concerns over the relationships between non-educational video gaming and texting, academic performance, and other school experiences.

The more Grade 9 boys play video games, the less likely they have positive school experiences and engage in non-academic activities. They are more likely to have negative school experiences, self-concept attributes, and peer relationship attributes. The more they send text messages, the more likely they have positive rather than negative school experiences. The more they think or are told that they text too much, the less likely they attend classes and have

positive school experiences. The more Grade 9 girls think they play video games too much, the less likely they attend classes and have positive school experiences and the more likely they have negative self-concept attributes. The more they lie about time they play video games or are told they play too much, the less likely they earn higher school marks and the more likely they have negative self-concept attributes. The more they send text messages, the more likely they have positive school experiences and peer relationship attributes. The more they think that they text too much, the less likely they have positive peer relationship attributes. The more they lie about time they spend texting, the more likely they have negative school experiences.

School professionals can make data-informed decisions to warn parents and students about playing video games and texting excessively. Any activity that lures students away from their schoolwork will eventually compromise academic performance.



# Healing journeys:

Shared insights from Indigenous men in Brandon, Manitoba

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Colonialism has, in large part, contributed to trauma among Indigenous people. Mental health is not an Indigenous term; it was developed by Western medical professionals. What may seem like symptoms of mental health in Indigenous communities may also be legitimate responses to trauma, poor living conditions, and other inequities. Understanding the complex nature of Indigenous peoples' healing journeys is vital to address the mental health disparities between Indigenous peoples and their non-Indigenous counterparts. This research focuses on understanding well-being and the healing process from the perspective of Indigenous men, rather than focusing on mental health problems from a Western perspective.

Understanding Indigenous men's healing journeys is critical to moving beyond deficit-focused research on substance use and suicide. Little attention has been given to Indigenous men's experiences of healing and barriers to healing. Men involved in this collaborative research project described their healing journeys as non-linear processes of resilience, hope, and cultural reclamation constrained by experiences of systemic racism and internalized oppression.

The project used a community-based participatory research method to strengthen community partnerships with Indigenous co-researchers. Indigenous researchers led four two-hour sharing circles with Indigenous men. Seven men, including the co-researchers, shared their stories within the sharing circles, where ceremonies and traditional teachings were offered. Following the sharing circles, five individual interviews were conducted with Indigenous men.

Planning for the future, raising children, and "walking the good path" gave Indigenous men a sense of hope on their

healing journeys. Men identified constraints to living a good life; specifically, they struggled with losing relationships and a sense of belonging in an attempt to live a life free from drugs and alcohol. Ceremony provided a safe space for men and strengthened cultural connections with other men and their communities. The men in this collaboration identified a scarcity of cultural role models as a barrier in their healing journeys. The men also internalized oppression and racism, which acted as a barrier to seeking external support in an urban setting.

The stories shared in this project will be used to educate Western service providers about the barriers faced by Indigenous men when seeking help. Inequalities in service provision and systemic racism continue to undermine the efforts made by Indigenous communities on their path to wellness. Providing people with a safe space to ask for help and the provision of culturally sensitive support could facilitate stronger relationships between Indigenous people and Western mental health services. Indigenous men found healing through ceremonies and, if available, Indigenous role models. These resources need to be recognized and supported as an essential parallel system of care.

*In the spirit of humility, we acknowledge that by naming Jason Gobeil (Aboriginal Community Coordinator, City of Brandon) and Frank Tacan (Dakota Knowledge Keeper) as authors, we also recognize that the information shared within this Research Connection is not theirs alone. Indigenous teaching and knowledge sharing is a collective practice involving knowledge keepers, ancestors, families, and communities. We are grateful for the trust and sharing that has informed this research process. We thank the research participants for sharing their time and stories.*

## Development of disease diagnostics for soybean

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& CHRISTOPHE LEMOINE, PhD

Over the past 15 years, soybean production has exploded in Manitoba. It now accounts for the third-largest seeded area in the province and is one of the most economically important crops. Like all other valuable crops, soybean is bombarded by disease-causing microorganisms (e.g., fungi, bacteria, viruses) that can impact plant growth, survival, and harvesting yields.

Since soybean disease management relies on integrative strategies that are often tailored to the specific diseases present in a field, timely detection of the causal microorganisms is of utmost importance. In fact, a lack of this knowledge is the number one reason why many serious plant disease outbreaks occur.

Soybean diseases are typically diagnosed by visual inspection of symptomatic tissues by an agronomist, which has proven to be largely inaccurate. Our recent survey of agronomists found that less than 25% of these visual disease diagnoses were accurate. With this research, we aim to develop rapid, accurate, cost-effective, and sensitive diagnostic tools for the early detection of the most severe and prevalent disease-causing microorganisms of soybean in Manitoba.

We chose to focus on the ten most commonly found stem and leaf diseases in Manitoba. For each disease, we isolated the causal microorganism and produced pure cultures—basically, it is easier to grow them in agar plates in our lab instead of in soybean. Next, we identified sections of their DNA that are unique to each microorganism. These sections serve as “barcodes” to design the diagnostic tool using molecular biology techniques. The process is similar to forensic science, where scientists produce a unique DNA profile to identify the perpetrator. Once we confirmed that our DNA profiles were specific to each microorganism, we could optimize the technique so that we could test symptomatic soybean tissues for all ten potential diseases at the same time within a couple of hours.

The diagnostic tool can be incorporated into annual disease surveillance programs in the province, thereby strengthening their diagnostic capability and contributing to efficient disease control. Farmers can also send their diseased soybean samples to a diagnostic lab for testing, which will inform them on the appropriate control measures to use in their field.

## The politics of agricultural cooperatives in Brazil

WILDER ROBLES, PhD

According to the International Cooperative Alliance (ICA), there are three million cooperatives worldwide employing 280 million people. ICA also reports that the top 300 worldwide cooperatives generate around US \$2.1 trillion in total revenue. The *Movimento dos Trabalhadores Rurais Sem Terra*, or the Landless Rural Workers Movement (MST), is one of the most influential rural movements in contemporary Latin America. Since its establishment in 1984, the MST has settled around 1.4 million landless rural workers and established 146 agricultural cooperatives with a total membership of 15,444. Although the number of cooperatives is small, compared to the total number of settled peasants, they have had a significant multiplier effect in many of the newly established agrarian reform settlements.

This research examined the challenges of agricultural cooperative formation in Brazil from 1985 to 2015. It employed a political economy theoretical perspective supported by four years of fieldwork in four different regions of Brazil, including in-depth, face-to-face interviews. The political economy framework illustrated how historical processes, structural forces, and institutional actors reproduced relationships of dominance and resistance and how power and resources are distributed and contested in Brazil’s rural contexts.

These factors greatly affected the MST’s experience of cooperative formation in four ways:

1. The MST has promoted a transformative cooperative project that has great potential to transform rural Brazil.
2. The MST has confronted open hostility to its cooperative project from the successive Brazilian governments.
3. The MST discovered and adopted agroecology, which has gained considerable ground within the movement. The language of agroecology (i.e., “environmental stewardship,” “social solidarity,” “economic reciprocity,” and “gender equity”) motivates cooperative members to act.
4. Women have played an important role in the MST cooperatives.

The MST’s cooperative project is still a work in progress. Anti-systemic social movements committed to alternative capitalist models can learn a lot from the MST cooperative experience. Likewise, policymakers can learn that the “sustainability” of peasant-led agricultural cooperatives requires balancing social, economic, and ecological factors through the use of appropriate technological and managerial expertise.

# Economic estimation of costs and benefits for farm-level management of extreme moisture



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Manitoba has a long history of flooding. Four of the top 10 Assiniboine River floods and five of the top 10 Red River floods occurred during the last 25 years. Manitoba's recent flood of 2011 was of a scope and severity never before experienced in the province, disrupting cattle and transportation networks. These issues necessitate the management of excess moisture at the farm level to reduce negative downstream effects.

This project aims to improve excess moisture (i.e., flooding) management by helping producers understand on-farm investments to manage floods and catalogue downstream impacts. Excess moisture can hurt farms by eroding soil, bogging down equipment, losing seed, affecting crop yield/quality, and ultimately reducing farm income. We:

1. Selected investment strategies to manage on-farm excess moisture. We addressed how the different farm investment options could mitigate the negative impacts while helping other types of co-benefits on the farm.
2. Adapted the farm model AquaCrop, calibrated based on climatic factors, crop variables, soil hydraulic properties, and field management practices typically found in Manitoba.

3. Identified downstream costs and benefits of excess moisture. We looked specifically at the Assiniboine River 2011 flood. More than 13 variables assessed various impacts of this flood, including degradation of land and infrastructure.

We found that farm-level management strategies can significantly reduce damages and human suffering in the rural settings, and, combined with other actions, can reduce the public costs of flood damage. Farm model-based yield forecasts properly evaluate the impact of excess moisture on agriculture and allow better decision-making at the farm, regional, and national levels. We conclude that there is a good prospect for providing useful food security early warning information, incorporating climate-based yield forecasts earlier in the growing season.

There is a need to understand the outcomes of negotiations between upstream and downstream under specific regulatory regimes. A better farm intervention adapted to manage excess moisture at the upstream level could overcome the reactive, disaster-driven character of flood at the downstream level and contribute towards developing flood risk management that works on a pre-emptive basis.

## Mexican artisanal fishers' perceptions of fishing conditions and attitudes toward fisheries management

CHRISTOPHER D. MALCOLM, PhD, ROSA MARIA CHAVEZ DAGOSTINO, PhD,  
& MYRNA LETITIA BRAVO OLIVAS, PhD

Small-scale, artisanal fisheries are closely tied to local communities and often contribute to food security and poverty alleviation. However, they are considered a vulnerable society, often marginalized, and threatened by commercial fisheries and tourism. In previous studies, we found that many fishers operate without permits and within a poor management infrastructure, including a low reliability of catch data due to undeclared and illegal catches and variable monitoring methods between states. As well, forced sales of communal land for tourism infrastructure have resulted in the displacement of fishers. With this research, we tried to find out how the fishers feel about the fishing conditions and management of fishing in the area.

In 2018, we administered 99 questionnaires to small-scale, artisanal fishers representing 12 different regional fishing collectives. These were collected with the help of Centro Universitario de la Costa undergraduate students. Sixty-six percent of the catch were snappers (*Lutjanidae*), and 43% were red snappers (*Lutjanus peru*). This may be problematic as the IUCN Red List of Threatened Species indicates that population size and trends, distribution, harvest, and threats for these species are “unknown.” Most respondents fish yearlong, but

some supplement fishing with a second form of income. Half of the participants indicated that fishing was currently average, was better in the past, and predicted it would be poorer in the future. Almost all fishers were concerned about the health of fish populations, offering statements such as “little by little fish populations are disappearing” and “no more big schools of fish.” Some indicated this because the fish are moving to other areas—possibly due to climate change. The perception of an unsustainable fishery led to personal, economic, and food security concerns, including comments such as “food support for my family” and “important for income.” Two of the most used fishing practices were identified as unsustainable fishing methods: the use of *chinchorros* (set gillnets) and *simbras* (set, baited longlines). Many respondents indicated that fishery managers need to “do their job” and “apply the laws” to help improve regional fisheries. The fishers also expressed frustration that lucrative species such as dorado and marlin are legally restricted to commercial sport fishers by the government.

This research will, hopefully, encourage NGOs such as the United Nations Food and Agriculture Organization as well as Mexican federal and state fisheries managers to address these issues.

## Examining the participation of women in the formulation of agriculture policies

GEORGETTE NYANKSON, MRD

The Food and Agriculture Sector Development Policy (FASDEP II) is a holistic policy formulated in 2007 to foster sustainable use of all productive resources and commercialization of activities in the agricultural sector geared towards market-driven growth. The broad principles of the policy are to ensure that all sub-policies and programs are formulated from a gender perspective to enhance the government's gender equality in the agricultural sector. However, in most cases, these principles are implementable in theory but not successfully implemented in practice.

Women play a significant role in Ghana's agricultural sector, yet they often lack power in making decisions and creating policies. My research examined women in their homes, communities, and agriculture organizations to identify their barriers in any of these settings in decision-making to know if women have the power and resources to act on their decisions and how those can inform their involvement in policy-making. Most women in the study were part of farmer-based organizations; however, most rural women faced barriers in decision-making at the municipal assembly level

due to patriarchal culture, inadequate resources, organizational/representational barriers, and a low level of education.

Regarding the agriculture policy FASDEP II, specifically women faced similar barriers to participation and a lack of good communication about involvement in policy making. To enhance women's participation in agricultural decisions and policy making, the farm women and stakeholders in the study suggested more informal education, adequate resources for community consultation, strengthening organizational structures, and effective coordination and communication between government officials and rural farmers.

This research provides recommendations that add to the existing literature and is helpful for municipal assemblies, community leaders, and any feminist movement in Ghana. In addition, these results can form the basis for further research needed to address the challenges from policy makers' points of view regarding the inclusion of women in policy making.

# Impacts of COVID-19 on rural health care workers in Manitoba



BY KYRRA HUNTER  
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**This study examines the mental health impacts of COVID-19 on frontline healthcare workers during the initial stages of the pandemic response in rural Manitoba, Canada. It is one stage of a larger project examining the impacts of COVID-19 on rural people and places.**

Data was collected using an online survey over a one-month period from May to June 2020 (n= 137). Primarily nurses (including psychiatric, licensed, and practical) responded to the survey that included questions assessing symptoms of anxiety as well as strategies and barriers to addressing mental health concerns. The questionnaire also employed the Generalized Anxiety Disorder (GAD-7) self-report scale to assess anxiety.

The initial stages of the COVID-19 pandemic in Manitoba had negative effects on the mental well-being of rural frontline health care workers. In communities of less than 10,000 people, the analysis showed that nearly  $\frac{1}{4}$  of health care workers that responded to the survey reported moderate to severe levels of anxiety. Health care workers mainly accessed informal supports, such as family and friends, and they reported numerous barriers to accessing formal mental health support. Frequent barriers reported included fatigue, not having time to seek support, and fear of judgement. As the number of barriers experienced trying to access resources increased, GAD-7 scores also significantly increased.

Health care workers identified a wide array of coping strategies they used to support their mental health and well-being during the initial stages of the pandemic. Common coping strategies included eating regularly, having a good sleep routine, and exercising. It is also important to address potentially negative strategies reported, such as increased consumption of substances such as alcohol, tobacco, and cannabis through the provision of other complementary supports. Importantly, those who reported using more coping strategies displayed lower GAD-7 scores. This finding speaks of the importance of providing and supporting positive coping strategies in the workplace, community, and at home.

*Fellow researchers: Doug Ramsey, PhD, Rachel Herron, PhD, Breanna Lawrence, PhD, Candice Waddell-Henowitch, PhD, & Nancy Newall, PhD*

## The sticky bits: Lessons learned from teaching during the pandemic

JACQUELINE KIRK, PhD, & NATASHA OFWONO, Graduate Student

Teaching during the pandemic was difficult. Teachers shifted quickly to an online environment; supported students and their families with learning, technology, and the stress of surviving the pandemic; and returned to a classroom that was far from normal. When forced to shift to remote learning in the spring of 2020, Southwest Horizon School Division asked the BU CARES Research Centre to help gather data on positive changes in teachers' practices and professional learning to overcome the pandemic challenges. The question became, "What did we learn from teaching during the pandemic that should continue when it is over?" Affectionately, we tagged those takeaways "the sticky bits."

The data for this phenomenological study included document analysis of records that were compiled by the school division during the online meetings, interviews with eight teachers, and interviews with the facilitator of the online groups, and the

superintendent. Twelve takeaways emerged: teacher collaboration is important; increase home-school communication and support; be more concise; speak in language that students understand; focus instruction; daily feedback provides information for teachers; technological tools make a positive difference in teaching and learning; make learning materials accessible for students and families; record student progress to show growth and expose challenges; learning face to face, hands-on, and in groups is better; pay attention to the social-emotional wellness of students; and teacher mental health needs to be a priority.

Educators and educational researchers can use this research because it identifies promising practices that could and should be considered by educators to improve their practice. This research captures an important moment in the history of education and provides reflection on the early pandemic experiences of teachers.

## How socially isolated were Canadians before COVID-19?

NANCY NEWALL, PhD, & VERENA MENEK, PhD

Research shows that social isolation and loneliness are associated with poorer physical, cognitive, mental, and social well-being; understanding its prevalence is therefore important for policy and program planning. The mandated restrictions in the COVID-19 pandemic have no doubt made social isolation a household name, but how isolated and lonely were Canadians before COVID-19?

The study compares national data from more than 20,000 Canadians aged 45–85, from the Canadian Longitudinal Study on Aging. Using our five-item measure of social isolation (living alone; infrequent visits with family, children, friends/neighbours; low social participation) and other measures, we compared social isolation to health and well-being. We found 17.5% of Canadians aged 45–85 live alone. Though women were more likely to live alone (over 65+, 41% live alone), they were less likely to be socially isolated than men because of their higher social activity and networks. Also, 5.8% of adults aged 45–85 years were socially isolated. Adults aged 65+ (8.4%) were more likely to be isolated than adults aged 45–64 (4.6%); 10.4% reported feeling lonely often or always. Almost a quarter (23%) of participants indicated they lacked help when needed, and 15.5% reported lacking a readily available confidant. There was little difference between age groups on loneliness and social support indicators.

Before COVID-19, levels of social isolation were quite low, including among those aged 65+, as most older adults have highly integrated social networks. Prevalence estimates can help determine particular populations in which social isolation is higher and help guide outreach to these groups. As restrictions to our in-person social interactions ease, we must continue to reach those most isolated in our communities.

## Assholes in the news: Policing in the age of the COVID-19 pandemic

CHRISTOPHER J. SCHNEIDER, PhD

One consequence of the pandemic is the expansion of police discretionary powers so that routine and otherwise lawful social activities may spark police action. When some people disregard or criticize police enforcement, simply by virtue of ignoring police commands, these individuals become "assholes." Assholes are suspected persons who challenge an officer's authority and, resulting from the officer's perceived indignation, can be subject to arrest and police violence.

Analysis of news coverage revealed the widespread use of post facto legal accounts ("disorderly conduct," "assaulting a police officer," "disturbing the peace," and "resisting arrest") routinely used by

law enforcement in jurisdictions across six countries. Police use of discretion is similar in all accounts. Key is that police discretion appears amplified in the context of pandemic enforcement. This research provides evidence that illustrates how otherwise routine and mundane social activities (such as holding hands, riding bikes, driving, standing, and breathing) become increasingly subject to police discretion, leading to questionable arrests.

This research raises concerns about what exactly pandemic policing should look like, spotlights the role police discretion plays in the process, and could help develop and clarify the legal parameters of police discretion during and after the pandemic.



# Massed versus spaced learning in horses



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Horses are routinely trained to perform a variety of tasks, yet relatively little research has been conducted to determine how often and for how long a horse should be trained to obtain the best short-term and long-term training outcomes. This issue is important to research given that making simple changes within a training session has the potential to improve how quickly horses learn new tasks, how well this learning is retained over time, and to reduce frustration for both horse and human, thus improving the learning experience and minimizing the risks for accidents. The purpose of the research was to examine the effects of massed (conducted all in one chunk) versus spaced (spread over a number of learning bouts) learning within training sessions on horses' rates of learning and retention of an obstacle task.

Fifteen horses were divided into three comparable groups (age, sex, and personality) for 30 minute-long training sessions. Group 1 was trained with *massed learning*, group 2 trained with *equal-spaced learning*, and group 3 trained with *variable spaced learning*. The horses were taught to walk through an obstacle course consisting of four obstacles: a shower curtain cut into strips, suspended from a pole that the horse had to walk through (to simulate trees), pool noodles attached to poles on both sides of the horse such that the horses had to brush against them on both sides when walking through the obstacle (to simulate trees and brush), fake flowers the

horse had to walk over (to simulate flowers and grasses), and a wooden teeter totter (to simulate situations where the horse has to walk over ground that shifts).

The amount of training time that it took for the horse to learn to walk through the obstacle course three consecutive times following the handler, without being attached to a lead rope, was recorded. No significant differences were found between the groups in the rate it took the groups to learn the task, but this may have been due to the small sample size and the variability observed in each group. On average, the obstacle task was learned in 21 min by horses in the equal spaced learning group, 29 min by horses in the variable spaced group, and 39 min by the horses in the massed group. These results suggest that there is a potential benefit of spaced learning in horses.

Retention of the task was tested and recorded once at one day and again at 14 days following the initial mastery of the task; no differences were found between the three groups in terms of the horses' ability to retrain the task.

Determining the best training schedule for horses is of value as it could allow for the maximum gain in learning outcomes with the minimum amount of time, injury, and frustration for both the horse and handler.

## Impacts of COVID-19 on women and caregivers at Canadian post-secondary institutions

LINDSAY MCLACHLAN, MBA, CPA, CA

COVID-19 has significantly impacted women and caregivers teaching and researching at post-secondary institutions. This study is one of the first to target women and caregivers working in accounting academia in Canada and is important in ensuring that we are working towards equity for all in the pandemic. Twenty-three accounting professors across Canada answered questions on the pandemic's changes to their teaching and research agendas and the changes' short-term and long-term implications. They also provided suggestions to move forward. There is representation of all provinces except Quebec, New Brunswick, and Newfoundland and Labrador.

Through content analysis, 38 separate issues were identified in the contributions. The most common included working from home—both pros and cons; lower productivity despite the additional time spent overall; mental health; loss of dedicated work time; research stopped or slowed; academic integrity concerns; lack of interaction

with students; leaving academia; and flipped classroom. Although the flipped classroom approach was considered a positive issue, contributors overall identified issues that negatively impacted their teaching/researching agendas. The same contributors identified 24 different ways they could be helped through this pandemic. The number one area of help is support—from their institution, dean, department, chair, and the academy. Other common ways academics would benefit included additional funding, tenure and promotion committees adjusting standards, leadership, IT assistance, and an option for reduced workload.

The findings show that women and caregivers have been significantly impacted by COVID-19. Post-secondary institutions will need to consider how they are implementing policies and action to mitigate the pandemic's negative effects on these equity-seeking groups, and they can consider the ways that accounting academics would be helped when designing policies and allocating funds moving forward.

## Impacts of the COVID-19 pandemic on marginalized genders at Brandon University

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Knowledge of the experiences of gender-marginalized faculty is needed to challenge the patterns and effects of gender marginalization in Brandon University (BU) and in society more broadly. The Status of Women Review Committee at BU is studying the impacts of the COVID-19 pandemic on the research, teaching, creative practice, and academic service of faculty association members who identify as marginalized by gender (e.g., women, Two-Spirit, trans, and non-binary people). Results show that the pandemic has had a major impact on many aspects of work and well-being.

Results of the qualitative online survey (December 2020) showed that most people reported their ability to research had been decreased, even devastated as caregiving, online teaching, and supporting students have demanded and depleted their time and energy. Pandemic teaching demands more time to learn technology and prepare/adapt courses to online learning. The pandemic has impacted the physical, mental, and emotional well-being of gender-marginalized faculty, who reported being intensely stressed, anxious, exhausted, overwhelmed, and overworked. Gender-marginalized faculty worry about how the decline in research outputs will impact their eventual tenure and promotion applications.

Respondents expressed gratitude for this research as their experiences were heard and acknowledged, and made extensive recommendations on how BU could provide more support for its faculty.



# The joy of sexting:

## Mapping the significance of the first time in the virtual world



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There is a lack of scholarship about the social and semiotic dimensions of digital affordances; to understand how relative gendered value is generated through social media images, narratives, and practices; and to understand the complexity of sexting, exploring the ways in which sexting is understood, how it functions in the world, and how it is rewriting how we think and understand sexual experiences in the digital age. This project provides a cultural and gendered analysis of normative and non-normative experiences of sexting in the digital realm and aims to provide a nuanced understanding of sexting by drawing on sexual cultural history.

While sexting can be dangerous, just as sex can be dangerous, this is not necessary or essential to the phenomenon. While the discourse has been extensive, it has primarily focused on harm and crisis narratives. We seek to study sexting as a historical phenomenon; that is, we argue that sexting is just another part of sexual cultural history. Over the course of two years, this project had four goals:

1. Utilize the previously established literature review on sexting and expand it in order to find its correlations with virginity in the virtual world.
2. Develop new theoretical models to consider virginity and the digital realm, especially with respect to intimacy and sexuality.
3. Provide analysis based on this new model by considering cultural texts and experiences of sexting.

4. Consider the importance of the first time in the digital realm to ongoing discussions of disclosure culture, toxic or hegemonic masculinity, and sexuality.

The medium really is the message. Sexting isn't new, but how it is done might be. Flirtatious letters have been sent for centuries, millennia; photographs and drawings are part of an ongoing sexual history. What is new is the ease with which we are able to distribute these materials, which has allowed for a panic discourse; for example, sexual material in the virtual world is archived to create potential problems for individuals in the future. With a large portion of sexuality occurring virtually today, we have found that a new vocabulary and discourse can be looked at in regard to virginity, sexuality, relationships, and gender identities.

This project will be of value to policymakers, particularly various levels of government, as they debate and think through the problem of sexting and aligned concerns such as revenge pornography. Additionally, this project will be of value to educators in the formal settings of secondary education, who are often confronted by the realities of sexting. The importance of discussing and finding all aspects of our virtual sexual experiences is valued for a better understanding of our identities and how we define our sexualities and relationships in our world today.

*Fellow researchers: Kayla Mahoney, Valeria Viteri, & Brett Chrest*

# Composing music for the classroom during a pandemic



PETER MEECHAN, PhD

Composition Faculty at the School of Music

**D**uring the COVID-19 pandemic, the impact of social distancing and the limitations on gathering sizes led to a dramatic reduction in the number of people allowed to make music together in a school music room. The unpredictability of which students would be in the room (and whether there would be any online component) meant that the standard repertoire lacked the kind of adaptability that is now an essential part of music education during the pandemic. To meet these new—and perhaps not so new—needs, the Creative Repertoire Initiative (CRI) was formed.

Music, and the arts in general, is an essential part of a balanced education. It is also an outlet for many students—a place to express themselves—and a critical element in maintaining their mental health. It is essential that composers support students and educators with new music that allows them to continue to have high-quality, meaningful, shared musical experiences throughout the duration of the pandemic and, as programs rebuild, in a post-COVID world.

By definition, composition is research. Exploring new sounds, ideas, and concepts in order to produce a new work of art is part of the day-to-day life of a composer. Discovery is at the heart of each creation.

Most of the existing repertoire available to school bands and orchestras was written for a fixed instrumentation and required a full complement of performers. This would often involve over 50 students in the music room. Before appropriate new music could be created, specific issues had to be identified. A group of high-profile composers, conductors, and music educators (known as the Creative Repertoire Initiative) came together to identify various solutions to this repertoire crisis within instrumental music education.

Through a survey of music educators across North America, three key areas of immediate and long-term needs in regard to the repertoire were identified:

1. We found that the new music had to be:
  - a. fully adaptable to any situation that could arise in terms of numbers of performers,
  - b. fully adaptable to whatever instruments the students play, and
  - c. easy to discover, preferably in a central location.
2. The music had to be suitable to teach online when required (taking into account various technical issues, such as latency, etc.).
3. The music should be written by composers from a diverse range of backgrounds so that the music performed could represent the student body.

In order to encourage composers of all levels to take part in the CRI, we developed various resources to help others compose adaptable music. These include templates, instructional videos, software guides, and more.

We also created a central platform on Facebook (although a Facebook account is not required to peruse the group)

“Music... is an outlet for many students—a place to express themselves—and a critical element in maintaining mental health.”

that would bring together composers and music educators from around the world to share this new, adaptable music ([facebook.com/groups/creativerepertoire](https://facebook.com/groups/creativerepertoire)).

This new body of repertoire is already heavily utilized across the globe. It has been significant in allowing students of instrumental music programs to gather in groups of three, four, or more to begin making music together again.

The longer-term impact of the music is multi-faceted but includes these two crucial areas:

1. Rural instrumental music programs, where often a class will have small numbers of players, will have a repertoire that will allow for even more meaningful musical experiences in practice and performance.
2. In a field where repertoire is selected based on the standard of the whole rather than the individual, these new pieces will allow for differentiated learning in music programs.

*Fellow researcher(s): Robert Ambrose, Brian Balmages, Steven Bryant, Michael Daugherty, Julie Giroux, Jennifer Jolley, John Mackey, Alex Shapiro, Omar Thomas, Frank Ticheli, & Eric Whitacre*

## A music history of Métis song

LYNN WHIDDEN, PhD, Professor Emerita

While western music history is well studied, Métis and Aboriginal song contributes significantly to world music history and needs to be enfolded into the academic discussion. The Métis have a rich legacy of old French song, notably in those of Réal Boucher. The Boucher family brought their songs to “Canada” in 1634—carried from Normandy to New France to Red River and finally to the Northwest, now Saskatchewan—and continue to sing them in the twenty-first century. Whidden’s initial research responded to Réal’s request in 2015 to help preserve and share his wealth of song. After she visited his retirement home, he handed her songs, a lengthy family history, and other invaluable contextual materials such as photographs and a songbook assembled by his sister.

So far, to fulfill Réal’s hopes, three performances have featured the songs of Prairie Métis: the 14th Montréal Baroque Festival *Chapelle Notre-Dame de Bon Secours* in 2016 that Réal attended before his passing, which played several of his songs to a delighted audience;

the 2018 *From Paris to the Prairies in Nine Métis Songs*; and the 2020 *Les Délices* in Ohio—an online program focused on early music called *SalonEra*. Artistic Director Debra Nagy featured a range of mostly early music performers (and ethnomusicologist Lynn Whidden) discussing their work and sharing pre-recorded performances.

Considerable research is required to transcribe and analyze changing music styles from the seventeenth to twenty-first century and to contextualize the songs in their time and place.

Whidden has travelled across the three Prairie Provinces interviewing and recording Métis singers, finding musical treasures in collections, archives, and libraries from online resources and studies. Preliminary explorations of the Bibliothèque National holdings in Paris have been made. The research will provide a wealth of song for singing and playing as well as historical material for musicologists.

## Walking alongside: Looking at allies of Indigenous peoples through a poetic lens

JOAN GARBUTT, EdD

This research draws on adult education theory from Indigenous and non-Indigenous perspectives and critical realism to understand the actions, emotions, and interpersonal relationships of people recognized by Indigenous Peoples as allies. Allies who were asked about how they enacted their identity, what kinds of emotions allyship brought for them, and how their alliances affected their interpersonal relationships. The data were analyzed through the construction of found poetry—lifted from the allies’ interview transcripts—to create engaging pieces.

Poetry revealed not only the allies’ experiences but also ways the English language and technology act as colonizing forces. Employing poetic inquiry, I explored how recognized allies trace the development of their ally identity and consistent enactment of alliance, and I used disruptive strategy to challenge myself and the reader to see the extent everyday life—including the language we use—reflects colonization.

As arts-based research, parts of this study are an accessible way to promote discussion about allyship. For people ready to be more actively engaged in supporting Indigenous Peoples and their interests, there is much to learn in the allies’ words. After being challenged to confront the English language and writing processes as inherently colonizing, I plan to take what I have learned to develop resources for decolonizing post-secondary spaces.

## Orange Shirt Day messages

MICHELLE LAM, PhD, STEPHANIE SPENCE, AKECH MAYUOM, BA, & NATASHA OFWONO

September 30th is the National Day for Truth and Reconciliation. Also known as Orange Shirt Day, the day recognizes the harms of residential schools and affirms that everyone around us matters.

After doing an analysis of 119 messages on orange shirts from 2017 to 2019 at Brandon University, which were written in response to several given prompts, researchers found seven prominent themes. The most prominent spoke about building a better future, linked to leadership, forgiveness, making progress, hope for change, justice, education, and recognition of children as our future. The theme of recovering relationships encompassed allyship, decolonization, and (re)conciliation. The theme of healing linked to healing, understanding, appreciating, caring, loving, honouring, remembering, forgiveness, peace, respect, and coming together. The theme of equality often contained the phrases “every child matters” or “we all matter.” The identity theme illustrated strength, pride, and messages about worth, particularly the sacredness of children. The theme of education involved spreading awareness, knowledge, recognition of the past, and learning through the land. Lastly, the justice theme included messages such as “all children deserve love and protection” and “nobody deserves to lose their history.”

When we think about the National Day for Truth and Reconciliation and every other day, these themes are things to work towards in our own lives and can govern our interactions with one another.

## Beadwork and linear algebra

SARAH PLOSKER, PhD,  
& CATHERINE MATTES, MA, BA

Two authors created an assignment based on the four Rs of First Nations and higher education—respect, relevance, reciprocity, and responsibility—for the course Linear Algebra II to see if learning beadwork is useful in students’ understanding of linear algebra. The authors pose the question, “How can culturally appropriate topics be integrated into the course curriculum?” The beadwork assignment was a testimony to the potential for increased learning through kinetic and culturally specific learning.

Students were given an in-class demonstration of beading earrings by Cathy Mattes and her research assistant Justine Hutscheson, including a hands-on activity and a short history lesson. The idea of the beadwork needle implementing a linear transformation emerged. Depending on how many colours of beads were used, this action would be invariant under reflection, rotation, or other common transformation. We also used beadwork to explain injective, surjective, and invertible linear transformations. Students followed up by attending a beading session at the Indigenous Peoples’ Center on campus and were then asked to write a brief reflection on the connection between the beadwork and linear algebra at the end of the semester. Some math students struggled with learning through art making and writing when there is no “right answer,” yet they had positive attitudes and persevered. Their learning processes and reflections were all distinct. Students discussed the connections between the beadwork, topics covered in class and in related courses, and problem solving and displaying information meaningfully.

This project is an example of bringing Indigenous knowledge into the classroom. A better understanding of how learning through creating art objects, like beaded earrings, may provide options for alternative forms of teaching and learning math. This research maps how educators can collaborate in providing learning opportunities founded on Indigenous knowledges and relationship building.

## Community voices: Inclusivity and anti-racism

DENISE HUMPHREYS, MPA, BSW,  
AKECH MAYUOM, BA,  
& STEPHANIE SPENCE

Considering the rise of hate crimes, racism, and xenophobia in Brandon, the *Community Voices: Inclusivity Anti-racism* project launched. This project sought to deepen our collective understanding of these issues to make positive change, facilitating in-depth conversations about inclusivity and anti-racism in communities across Canada. Through the Brandon Local Immigration Partnership and BU CARES Research Centre, a virtual discussion was attended by 125 participants representing a broad range of community members to allow for multiple vantage points. While a single discussion is not all knowledge about racism in Brandon, it is a starting place to grow, plan, and explore further.

Many noted the importance of addressing the current realities of racism in the community. Self-identified BIPOC speakers shared insight into the risk that standing up to racism poses to their safety and the exhaustion experienced through dealing with racism as a daily occurrence. Speakers choosing not to disclose their racialized identity and White participants noted other challenges and barriers in addressing racism in their communities, including a lack of collaboration, power differences, cost, “othering” language, resistance to change, lack of accountability, and ignorance. Speakers also discussed opportunities to move forward, noting the need to bring opportunities through education; increase conversation, action, support for newcomers, and the onus on White community members; find clear pathways to foster accountability; address issues of privilege, systemic racism, and barriers to participation; use grassroots approaches for change; facilitate community connections and multicultural festival expansion; incentivize students to learn anti-racism; and create learning hubs.

Diverse conversations inform possible avenues toward belonging. The barriers and challenges identified, along with suggested opportunities for future directions, can be used to inform social change, inclusivity, and anti-racism initiatives by both individuals and local organizations to work toward anti-racism and belonging.

*Fellow researcher: Michelle Lam, PhD*

# Motivating Generation Z at work: Literature review and preliminary findings

RAVIKIRAN DWIVEDULA, PhD

There is extensive research on what motivates employees from previous generational cohorts, but research about Generation Z is limited. Understanding its motivation has significant implications for organizations attracting these employees to work for them. From a theoretical standpoint, this study further adds to the research on employee motivation by focusing on what motivates this emergent workforce.

To understand the current research on the topic, we analyzed 19 relevant peer-reviewed articles (2000–2019) by the co-occurrence of keywords. A survey for this ongoing project asks Generation Z employees from India and the United Arab Emirates to describe factors they believe most motivate them at work. From the keywords were five underlying research themes: Generation Z characteristics (they are less optimistic towards work because of economic recession, use more technology, and value opportunities for growth and freedom at work), workforce expectations, convenient generation characteristics (they are more invested in their careers, affecting opportunities available for Generation Z), intergenerational dynamics, and workplace transformation. The initial results from the survey indicate that the challenging nature of work, opportunities to learn, and financial security are three important factors to motivate Generation Z.

Understanding what motivates the young workforce can help managers develop reward structures and development programs to meet employee expectations. Organizations will also need to adapt their culture to suit the work values of this generation. The research themes identified in this study can be further developed/critiqued to develop a theory base for the management of Generation Z employees.

*Fellow researchers: Poonam Singh, PhD, Mehran Azaran, PhD*

## Exploring experiential education and post-secondary student employability skills: A 20-year review

CORA DUPUIS, MEd

Over the past decade, many have called for an expansion in experiential education opportunities for post-secondary students, believing they will better equip students with the employability skills needed to succeed in the workplace. But what underpins this commonly held belief?

Experiential education is a rich concept encompassing philosophical, practical, and pedagogical approaches to facilitate learning. This project analyzes 20 years of research at Canadian post-secondary institutions to examine student participation in experiential education and their subsequent development of employability skills, including communication, critical thinking, teamwork, problem solving, and adaptability. Based on this literature review, I created the Experiential Education 3P Model, which explains the interconnected relationship between philosophical, practical, and pedagogical aspects of experiential education.

There is promising evidence that experiential education programs or courses at the post-secondary level promote the development of communication and teamwork skills. However, multiple gaps point to new opportunities for future research. For example, most studies used self-assessment tools to measure skill development, there were no studies conducted at colleges and non-U15 institutions, and there were no studies that considered student demographics as a critical aspect of their participation in experiential education and skill development. The more we know about the most effective ways to deliver a variety of experiential education programs to the greatest number of students in the most inclusive and accessible ways possible, the more students will benefit.

## Influence of social media and online reviews on university students' purchasing decisions

MOSTAFA TORABI, MBA, MSc,  
& CHARLES H. BELANGER, PhD

This study develops a multidimensional model that incorporates information adoption, risk-taking, and demographic traits to examine the influence of online rating websites and social media on students' purchasing decisions. This research considers a comparison between students choosing a university and a restaurant. A survey assessed how 150 Canadian university students approached and applied online reviews and social media platforms with the view of adopting information from different dimensions, such as information timeliness, accuracy, and quantity, to make purchasing decisions. Questions were set on a 7-point Likert-type scale. With ethical approval, the survey was placed on the RedCap (Research Electronic Data Capture) website, using a convenient non-probability sampling technique to collect primary data.

Results revealed that information adoption and risk-taking are important factors in consumer purchasing decisions. However, there was no significant relationship between demographic traits and consumer purchasing decisions based on the proposed model and findings. The study confirms that long-term benefits outweighed the expediency of a decision when respondents were consulting rating websites. Students spend an incredible amount of time selecting a university, networking through social media, and scrutinising website reviews to make the best-informed decision.

It is important for organizations like universities to recognise how consumers perceive and evaluate the reliability of online reviews and know what factors determine review credibility from the consumers' point of view.

# Gastronomy: A tourism lure



DAVIO ROBINSON, MRD

Tourists have become more interested in learning about a people's culture with an increased focus on having a renewed sensory experience that appeals to their taste and smell. Capitalizing on this knowledge, in 2017, the Ministry of Tourism of Jamaica embarked on using gastronomy (food tourism) as one of seven networks to achieve tourism growth for Jamaica. As governments recognize the importance of "seizing the moment" by capitalizing on programs that can positively impact a country's economy, it is equally important to consider the impact of their actions on other government bodies and even private sector entities' operational policies.

The purpose of the study was to determine if the Ministry of Tourism consulted with specific government sector agencies and private sector entities that were key stakeholders in the pursuit of gastronomy as a tourism driver. Such an inclusive approach to development aids in transitioning from an idea to implementation, clarifying the expectation(s) of each stakeholder and making for an easier and sounder implementation process.

Research methods included a survey questionnaire and secondary data analysis (newspaper articles, statistical data, and journals). Research participants were identified based on the nature of their work, their interaction with the tourism sector, their involvement in coordinating and developing policies, as well as plans and programs for the sustainable development of Jamaica.

The research revealed several positive benefits of using gastronomy as a tourism driver for Jamaica and includes, but is not limited to, opportunities for improved capacity development and increased linkages between the agricultural and manufacturing sectors to recapture the economic leakages

to the import market. Another opportunity identified was Jamaica's gastronomic pursuits to promote localization (i.e., the use of local produce), especially within the hospitality and tourism sector.

The study also revealed several gaps in the communication process on the part of the Ministry of Tourism, with key stakeholders indicating that they received no contact concerning gastronomy and its use as a policy decision for tourism growth. There was also a general unwillingness of some of the participants to acknowledge the weakness in their existing operational frameworks to effectively execute their normal duties.

This research has the ability to reveal the importance of inclusive development, with a strong focus on strengthening the communication links, both vertically and horizontally, between government bodies and the private sector. The study may also be used as a springboard to explore other research focusing on small farming communities' responding to the tourism market, based on new policy directions from ministerial agencies.

# An armoured dinosaur's last supper



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BSc (Hons)

Previous work on herbivorous dinosaur diet relied heavily on indirect evidence, such as body size, feeding height, plant availability, and tooth morphology. The lack of direct evidence is due to the rarity of soft tissues being preserved in the fossil record. Direct evidence of diet includes stomach contents and feces, both of which typically do not preserve. Bones, teeth, and other hard parts have a much greater chance of preservation, which paleontologists typically use to reconstruct the appearance, lifestyle, and diet of a dinosaur.



In 2011, a new species of nodosaur (*Borealopelta markmitchelli*, a megaherbivore armoured dinosaur) was uncovered at the Suncor Millennium Mine near Fort McMurray in Alberta. This nodosaur is regarded as the best-preserved armoured dinosaur in the world; it lived and died 110 million years ago in the Early Cretaceous epoch. Its rapid burial by marine sediments after death not only preserved details like skin coloring and keratin armour, but also stomach contents!

Thin layers of the stomach contents were cut, polished, and mounted on microscope slides. These slides displayed a bounty of Cretaceous leaf fragments and other microscopic plant parts, most of which preserved cellular-level detail. In addition to the plant fragments were abundant gastroliths (small stones in the gut to aid with mechanical digestion). The plant fragments were photographed and sorted into plant groups using diagnostic features. For example, leptosporangiate ferns have a sporangium with a distinct ring of thickened cells called an annulus that helps disperse spores. These sporangia were easily identified in the stomach contents, many of which were preserved intact as if they were picked off a fern yesterday, not 110 million years ago. Additionally, conifers and cycads were identified from the characteristic polygonal guard cells of their stomata (leaf pores).

To understand what plants were available for food in this nodosaur's environment, the Gates Formation of Alberta was studied. This rock formation preserves fossil leaves of a wide range of ancient plants, as well as nodosaur trackways, and is the same age and geographical location as *Borealopelta*. Field work sampling fossils plants from the Gates Formation in the Grande Cache coal mine in August 2021 showed that the ancient landscape where *Borealopelta* lived contained fern-rich patches but that the vegetation was dominated by conifers such as pine-relatives and extinct plants such as *Taeniopteris*.

We found that this dinosaur had a favorite food: ferns! Although many plant groups, such as conifers, cycads, Ginkgo, and now-extinct plants were available in its environment, most of the stomach contents (85%) were fern leaf pieces and sporangia. In addition, there were cycad leaf pieces (3%) and trace amounts of conifers. These data represent selective feeding where *Borealopelta markmitchelli* was choosing to eat ferns over other plants growing in the same area. Furthermore, 6% of the total plant tissue was charcoal, which shows that *Borealopelta* was feeding in an area that had recently experienced a forest fire. In present-day forests, ferns can be the first plants to re-appear after a fire, so this charcoal was likely accidentally eaten while *Borealopelta* was snacking on ferns. The selective feeding on ferns in a recently burnt area tells us that *Borealopelta* preferred some local environments over others. Our data also places this dinosaur's season of death as late spring to early summer as (1) ferns typically produce sporangia then, and ripe fern sporangia were found in its stomach contents; and (2) a twig was found that showed mid-growth in its outermost growth ring, consistent with the twig being eaten mid-summer.

Artwork by  
**JULIUS CSOTONYI**  
© Royal Tyrrell Museum

## Pre-service teachers' experiences during a pandemic

SHELLEY KOKORUDZ, PhD

COVID-19 impacted public schools and post-secondary faculties of education without warning, causing educators to deliver curricula in ways they were unprepared. The system was not prepared for the extreme shift necessary to maintain teaching and learning processes. Faculties of education must prepare to meet the future demands of educators in the field. This research analyzed experiences of pre-service teachers from the Faculty of Education at Brandon University when COVID-19 arrived in Manitoba. Respondents offered valuable feedback that could guide discussions around future provincial/national reform in education and virtual learning.

An anonymous survey and personal communication revealed the need for more research into the impact of virtual learning platforms on levels of engagement of student learning and on specific school-age and cultural groups and students with disabilities. If future reform in education includes a choice in learning platforms, data reflecting preferences across a diverse population of learners may be valuable. A commitment to providing appropriate and quality education for all students through the lens of disability and philosophy of inclusion is extremely important to ensure that learner diversity is considered in any planning for future education reforms. This study also implies faculties of education must engage in processes of reflecting on and changing current programs to best prepare future educators for delivering curricula in various modes.

This study and recent literature reinforce the need for appropriate teacher preparation in changes to pedagogical practice. All students must also have access to appropriate technological equipment to ensure equity through virtual learning platforms. Finally, a continued commitment to support diverse learners with physical and learning disabilities must be established to protect their fundamental human rights to quality, appropriate education.

## Students teaching students coding with Scratch

MIKE NANTAIS, PhD, MATTEO DI MURO, MEd, & ELENI GALATSANOI-TELLIDIS, MSc

Coding and computational thinking (CT) have gained prominence over the past several years not only for their career potential but also for the development of thinking skills and deeper understanding of digital devices. Many jurisdictions around the world and across Canada now include coding in the curriculum, but many teachers lack the background to do it. One Brandon high school teacher had his Computer Science students create and deliver lessons to middle school classes to introduce coding to young students and their teachers.

For each teaching cycle, five to eight high school students met to discuss and develop Scratch (a visual, block-based programming language developed at MIT) lessons, delivered in approximately eight, one-hour lessons over several weeks to five different grade 7 and/or 8 classes. Data gathered through surveys, focus groups, interviews, and classroom observations revealed this project

## The Teacher-Led Learning Team: Collaborative professionalism in action

CATHRYN SMITH, PhD

The Teacher-Led Learning Team (TLLT) represents an innovative approach to professional development for Manitoba educators. Team members—classroom teachers, counsellors, clinicians, and administrators—collaboratively develop and facilitate high-impact, research-informed professional learning workshops for Manitoba Teachers' Society (MTS) members. This study's purpose was to identify key features of TLLT and essential elements of its success, capture emerging insights from team development strategies, and characterise the team's impact on its members.

A three-level design program theory synthesizes different elements in the TLLT innovation: (1) the intent, composition, team recruitment, and member criteria; (2) the processes and content of training and workshop development; and (3) the responsibilities for those in deployment, enactment, and delivery of team activities.

TLLT members serve as boundary spanners, capacity builders, and change agents. Individual and collective accountability, continuous improvement, persistent action, and reflective feedback were key indicators of its collaborative professionalism. This team thrived on diversity and developed individual and collective capacity. Members reported increased confidence, new adult learning and facilitation insights, enhanced self-awareness, transformation, and learning from their fellow team members. High numbers of workshop deployments and overwhelmingly positive feedback provided evidence that teacher-led workshops were highly effective and responsive. The design theory provides concrete structural guidance to innovators. Lessons learned can inform individuals and organizations responsible for developing the leadership capacity of facilitation teams. Finally, the positive impact on team members' identity as teacher leaders contributes to the scant literature on union-sponsored, teacher-led professional learning.

provided a way to introduce teachers without a computer science background and younger students to coding and CT in a fun, non-threatening environment. It led some to further or continue an interest in coding. Other benefits included student engagement, developing collaborative skills, algorithmic and critical thinking, and communication skills. The project helped some high school students solidify an understanding of computer science concepts and develop skills in planning, problem solving, and communication. A future study utilizing pre- and post-assessment of CT skills would help build and further clarify these findings.

This project, from our literature review, is unique and can be easily adapted for use in other jurisdictions as a way to introduce young students and their teachers to the concepts of coding in a friendly environment.

# An inquiry into how elite-level male ice hockey players enact forms of resistance to hegemonic ideals



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Elite-level male ice hockey has become deeply embedded in Canadian culture; specifically, it has evolved from a recreational activity—a past-time—to a way of life. Participation in competitive ice hockey is an important site for the production, negotiation, and maintenance of hegemonic masculinities in Western culture. Although elite-level male ice hockey provides athletes with a range of positive characteristics such as resiliency, commitment, discipline and a sense of fellowship, the consensus among researchers is that ice hockey is a White male-dominated sphere that attempts to socialize young boys and men into traditional hegemonic masculine ideals (hegemonic masculinity). To promote and assure that athletes embrace certain masculine ideals, they are frequently subjected to policing tactics that ensure the adoption and enactment of preferred masculine characteristics.

This project explores how current and former professional hockey players resist the toxic traits required and cultivated in hockey culture. Through interviews of professional male ice hockey players, we seek to understand their experiences as they resisted hegemonic masculinity. Further, this research examines how these men (re)negotiate the concept of hegemonic masculinity and how acts of resistance influence the formation and enactment of their identities within and beyond this sporting context.

The literature on this topic suggests that the socialization process becomes problematic when young boys and men begin to embody certain traits of hegemonic masculinities that become manifest in attitudes such as homophobia, misogyny, and heteronormativity. The attainment of dominant masculine traits does not necessarily translate into fulfilling and satisfying experiences in life. Despite

personifying the desired masculine ideals, many former competitive ice hockey players are now publicly revealing their struggles with alcohol, drug addiction, and the impacts of injuries connected to a lifetime of embodying hyper-aggressive and overly competitive qualities of maleness. This has been brought to light in recent mainstream media, such as *W5*'s exposé on the endorsed use of painkillers to man-up and play through pain. Retired NHL players have publicly spoken about the severe long-term consequences of a culture that necessitates hegemonic masculinity. These toxic traits are frequently perpetuated and legitimized in a variety of social contexts that extend into the broader community, for example, in men's relationships with women, children, and other men. This is especially problematic given that this way of thinking and behaving contributes to preserving men's dominant position in society and marginalizes other more inclusive expressions of masculinities.

We hope that this study will offer a means to (re)interpret, (re)imagine, (re)story, and (re)enact what it means to be a boy/man and ultimately evolve the sport to become more inclusive. The findings from this study provide multifaceted definitions of masculinities, contribute to studies on violence, and further conversations on heteronormativity, homophobia, and misogyny in hockey culture. Through semi-structured interviews, our hope is that participants will continue to cultivate a language to resist hegemonic masculinity and as a result foster a more inclusive understanding of what it means to be and to act like a boy or man. As educators, we intend this research to be pedagogical and inform minor hockey communities through workshops and ongoing conversations that provide opportunities for enlarged understandings of the self, other, and sport.

## Are we postmodern yet?

REINHOLD KRAMER, PhD

Traditional faiths and modernist reasoners (usually consequentialist) often fail to respond satisfyingly to the postmodern dilemma, the lack of agreement about ethics. The book *Are We Postmodern Yet? And Were We Ever?* explores a variety of important social changes, including the resistance to objective measures of truth, the rise of “How-I-Feel” ethics, the ascendancy of individualism, the immersion in cyber-simulations, the push toward globalization and multilateralism, and the decline of political and religious faiths. Surveying assessments by experts and depictions in contemporary artistic works, the book considers whether contemporary social practices accurately reflect experts’ claims.

No single answer is possible to the book’s title question. Regarding truth, postmodern overvaluing of emotion appears both on the Right and Left, but it sits alongside new non-postmodern ways of assessing truth. Regarding individualism, the contemporary era is strongly postmodern (resulting in self-indulgence; declines of civility, empathy, and social commitments; and social distancing fostering unhappiness). Cyber culture is another ambivalent case of the postmodern. Politically, the continuing power of the nation and group identities works against the postmodern, yet privileging the consumer over the citizen reinforces postmodern individualism. Internationally, a postmodern deregulatory trend of economic globalization has severely restrained national sovereignties. In trade and multilateral institutions, the world is increasingly postmodern. In general, despite commentators who agitate on behalf of traditional, science-oriented, market-based, or other-focused ethics, postmodernity has most often been marked by a provisional consensus about contractarian processes and human rights duties.

This research can be used to critique both parochialism and undefined pluralism, showing that contemporary western societies (especially Canada and the US) operate at four layers—evolutionary adaptations, traditional faiths, scientific modernity, postmodern skepticism—and that none of these can be ignored in our decision making. Negotiated contracts between positions offer the best way forward.

## Epistemic judgment and motivation

CAMERON BOULT, PhD, & SEBASTIAN KÖHLER, PhD

There remain many unanswered questions about the meaning and function of epistemic discourse. What fundamental similarities and differences might there be between moral and epistemic discourses? What does it really mean to say they are both “normative”? Researching this can lead to a better understanding of the meaning and function of normative vocabularies and their differences.

One standard answer to what it means for moral discourse to be normative is that moral judgments are in some way deeply connected to our desires—what we want to be. When we judge that we morally ought to do something, typically, we tend to feel some motivation towards doing it. We investigated whether epistemic judgments are connected to motivation (e.g., if someone judges it irrational to believe that climate change is a hoax, does this imply they are motivated to do anything in particular?). People are not normally capable of believing things about the world simply because they want to. These issues intersect in fascinating ways with the potential connection between epistemic judgment and motivation. How might we spell out there is a deep, interesting connection between epistemic judgment and motivation while doing justice to the intuitive idea that people don’t normally form beliefs just because they want to?

We found the parallel between moral and epistemic domains more complex than commonly assumed, mainly because attempting to connect epistemic judgment and motivation presents a dilemma: either we imply people have some voluntary control over their beliefs or that the connection between epistemic judgment and motivation is much more tenuous than between moral judgment and motivation.

## Why the preternatural matters

DAVID WINTER, PhD

Within the domain of cultural history, the study of the preternatural is an evolving investigative category seeking to understand historical attitudes towards the uncanny, the spooky, and the diabolical. By examining how Western society sees the world in such starkly oppositional terms, we can begin to explain why notions of cosmological “evil” still linger and how demonization and Othering continue to occur in secular contexts.

*Knowing Demons, Knowing Spirits in the Early Modern Period* (Palgrave Macmillan, 2018) looks at the many ways of knowing—and knowing about—preternatural beings (demons, angels, fairies, other spirits) that premodern Europeans (before ca. 1750) believed inhabited their world. We examined how they understood the types of spiritual entities they believed dwelled in the realm just beyond (and occasionally within) the limits of human perception. Though “science” was gaining traction at that time, many Europeans accepted, simultaneously, the “reality” of spirits and demons. Not contradictory, we see this as logically consistent within the broad parameters of their worldview. Thus, the book emphasizes the internal coherence of demonism in early modern thought—something historians of science have traditionally dismissed.

The devil’s existence as an explanatory mechanism still matters today in ways some fail to appreciate. While the early modern era threatened to dethrone the devil of scripture, there remain substantial forms of secular demonization and Othering in the modern world. Our book traced a significant part of that legacy and contributes to a substantial scholarly discussion about early modern demonic epistemology.

*Fellow researchers: Michelle D. Brock, PhD, & Richard Raiswell, PhD*

## Hype or real threat: The extent of predatory journals in student bibliographies

RAINER SCHIRA, Reference and Information Literacy Instruction Librarian, & CHRIS HURST, Systems Librarian

Potentially predatory journals pretend to offer peer review and have reputable journal editors, aggressively solicit articles through email spamming, and lie about their inclusion in commonly used research indexes in order to make money by charging article submission fees without the benefits that reputable journals have. Unsuspecting authors may find that their articles have not actually been improved through peer review and their research has very little impact—predatory journals are often not found in reputable indexes—although authors can choose to publish a substandard article specifically in a predatory journal to get a quick citation necessary for promotion despite doing poor research. Also, these substandard articles can be found with a Google search, and unsuspecting students may accept their worth uncritically. While much has been written about what makes a journal predatory, how to avoid them, who publishes in them, and how many there are in library research databases, no one yet has asked if students use them in their bibliographies.

For this project, we studied if students use potentially predatory journals in their research assignments, if students are aware what predatory journals are, and how students conduct their research—along with permission from Brandon University professors, questionnaires for faculty members, and focus groups with students. In 2017, we collected 245 bibliographies, including 2,359 citations. Of the 1,485 citations to journals in these citations, five were found to cite journals from potentially predatory journals and publishers. We have gathered 249 bibliographies for our 2019 study but have not yet evaluated them. Student thoughts and insights in the focus groups have not yet been analyzed. Determining if students know about and use predatory journals in their assignments can help a university decide whether to spend more effort educating students about this issue.

## The experiences of undergraduate psychiatric nursing peer mentors

ANDREA THOMSON, RPN, BScPN, MPN, DANA NAISMITH, RPN, BA, BScPN, MH,  
& NADINE SMITH, RN, BN, MN

Throughout their undergraduate careers, students experience many challenges with academic demands and stressors inherent to daily life, which may be overwhelming. Peer mentorship programs help combat some of these stressors in a variety of undergraduate programs, including psychiatric nursing. Psychiatric nursing is a distinct nursing profession that places significant importance on relationships, support, and communication, but little is known about the experiences of psychiatric nursing peer mentors within these programs.

Nine semi-structured interviews with psychiatric nursing students (women aged 20–29) acting as mentors focused on understanding their roles, experiences, and relationships with their mentee(s). Participants reported using important skills valued by the profession of psychiatric nursing throughout their mentorship experience.

Themes of support, relationships, boundaries, communication, empathy, and leadership were voiced. All mentors reported a desire to have increased expectations placed on the mentor role; they wanted to do and give more to their mentees. Additionally, participants reported a lack of structure or guidance regarding the expectations of the mentorship program. Several voiced the mentorship program could be improved through increased guidelines and communication regarding the purpose of the program and student roles.

Enhanced written guidelines and ongoing communication from the program's facilitators involving mentee/mentor roles and program process would better assist those involved. The peer mentorship program needs to be recognized and supported within undergraduate settings, including psychiatric nursing.

## Digital realities of Manitoba school divisions

MIKE NANTAIS, PhD, WAYNE KELLY, PhD, JACQUELINE KIRK, PhD, MICHELLE LAM, PhD,  
MATTEO DI MURO, MEd, NATASHA OFWONO, & STEPHANIE SPENCE

The study's team investigated how the pandemic affected the digital realities of school divisions and how digital policy and practice morphed and adapted to meet the learning needs of students, parents, and teachers during the school closures of the COVID-19 pandemic.

Divisional websites and social media presence of the select school divisions were scanned to gather information about digital policies, infrastructure, procedures, and practices, providing local context. Second, interviews with school division technology coordinators delved deeper into policies and practices identified in the first phase and explored the challenges, solutions, and innovations

arising from the pandemic and related school closures. All examined school divisions had policies around digital technology and guidelines on acceptable use. Power dynamics influenced by philosophical perspective of policy had significant implications for how technology decision making was processed (control over preferred software, device management, speed of responding to an online learning environment, etc.). We need to ensure digital equity (equitable digital infrastructure, accessibility, and resources), digital choice (retaining flexibility regarding devices, software, and digital policy rather than being mandated), and levelled-up digital skills (through professional development for teachers).

# Educational leadership during the COVID-19 outbreak



ALYSHA FARRELL, PhD

Associate Professor, Education

The study illuminated some of the affective dimensions of leading in precarious times. Although the participants focused on the pandemic's impact on students, teachers, and families, when asked directly about the personal impact, 14 of the 15 participants reported that leading during the COVID-19 outbreak had negatively impacted their physical and emotional well-being. One participant said, "I can't sleep. I'm not sure about my impact anymore, and another reported, "I wake up thinking about the pandemic's impact on our students, and it's the last thing I think about before going to bed at night. Another participant said, "At first, it was extremely hard to concentrate at work because I was terrified I'd bring the virus home.

“I wake up thinking about the pandemic’s impact on our students, and it’s the last thing I think about before going to bed at night.”

Dr. Farrell interviewed 15 school and divisional leaders from the southwestern region of Manitoba for this study. The interviews took place over Zoom video conferencing between June 1st and June 29th, 2020.

All of the participants reported that the speed of change posed significant challenges. The most notable was that school leaders had one week to prepare teachers and families to shift from face-to-face classes to distance learning. To further complicate matters, the participants described instances when they would learn about high-impact decisions made by the provincial government only hours before the public. One of the participants expressed, “It was frustrating not having important information before the media had it. Another theme that emerged in the interviews was the level of uncertainty caused by the pandemic. One participant remarked, “It’s hard to tell people it’s going to be okay when so much is uncertain and out of our control. Most notably, the participants identified four social inequities that shaped their leadership efforts during this difficult time. Food insecurity, student access to online classes, student safety, and gaps in mental health supports for families were areas of great concern.

The participants shared several leadership strategies they used to mitigate the challenges they faced. For example, some school principals described how they set up small, agile, and issue-based decision-making teams to target urgent areas of concern. They also offered wise counsel on how to create mentorship teams and how the teams were used to “provide right-on-time support in the areas of using online learning platforms, engaging students online and effective online pedagogies. During the last part of each interview, the participants shared a piece of advice with aspiring school leaders who might find themselves leading in challenging times.

What follows is a snapshot of their advice:

1. Lead with an ethic of care.
2. Don’t assume that everyone deals with change in the same way you do.
3. Anticipate which conversations are best had face-to-face.
4. Stay connected with your own emotions.
5. Let people know when you need help. One person can’t have all the answers.
6. Don’t idealize self-sacrifice.
7. Set boundaries for online communication.
8. Slow down. Take time to make the right decision even if you’re being put under significant pressure to move faster than is reasonable.

The results of this study will be published in a chapter in Dr. Farrell’s forthcoming book, *Educational Theory Beyond the Anthropocene*.

“It’s hard to tell people it’s going to be okay when so much is uncertain and out of our control.”

## What do racialized residents of Hamburg, Germany, think about local planning and development?

JULIE CHAMBERLAIN, PhD

Hamburg, Germany, is generally considered an open and cosmopolitan city, but it has a long history of racism and colonialism. Recent urban planning and redevelopment in the neighbourhood of Wilhelmsburg uses social mixing—a controversial planning that disadvantages poor and racialized people (considered to be non-German based on their names, hair and skin colours, religion, or family migration). This popular idea is troubling because it depends upon legal discrimination, valuing some people over others.

This research draws attention to racial discrimination in urban planning, contributes to anti-racist advocacy, and spotlights the valuable and important perspectives of racialized residents. I interviewed racialized residents who had lived in Wilhelmsburg for more than ten years, and with politicians and planners working in the neighbourhood. Also, I lived in Wilhelmsburg, participating in local life, taking photos, and studying local historical and government archives, and held a community event to discuss my findings.

Racialized residents deeply valued Wilhelmsburg and challenged the planning narrative that treats diversity as a problem. They reported that the neighbourhood welcomes everyone, especially people who otherwise faced intense discrimination in Germany. More White, middle-class Germans have been attracted to the neighbourhood, changing Wilhelmsburg's image in a positive way, but at the same time, finding housing for racialized residents has become more difficult. This is consistent with social mix planning, which treats racialized people as displaceable in the name of neighbourhood improvement. Residents argued that social mix planning could challenge the racism of White, middle-class Germans who avoided the neighbourhood in the past, encouraging them to live with diversity. Residents hoped current developments would improve local infrastructure but not change the beauty and character of Wilhelmsburg.

## Racism is a subtle, sly, slippery thing: A need for anti-racism praxis in nursing education

MADELEINE KRUTH, MSc,  
& CANDICE WADDELL-HENOWITCH, PhD

Systemic racism is a real and present problem in all our society, and racism in health care is an ongoing issue. Racialized minorities bear a disproportionate burden of morbidity and mortality. The COVID-19 pandemic has highlighted health inequalities extant in Canadian society and how devastating their impacts can be on BIPOC populations. Addressing these inequalities requires an honest look at behavioural and structural changes that can be made in healthcare education, informed by students currently engaged with the system.

Nursing and psychiatric nursing students hold a unique role in the health care field and can change the system in favour of equitable service delivery. The insights shared by Brandon University nursing students in a survey and structured interview indicated that racism continues to exist in healthcare and nursing education, in blatant and subtle forms, despite the implementation of cultural competency training; students felt under-equipped to deal with racism they experienced or witnessed; there is currently a lack of anti-racism praxis in nursing education; and more needs to be done to incorporate anti-racism praxis into nursing education. Participants also shared instances of racism, both experienced and witnessed—salient problems expressed were a lack of preparedness for dealing with racism in concrete and practical ways and how current training is insufficient in implementing true anti-racism praxis. Participants desired a better approach to anti-racist nursing education, including behavioural and structural changes, and shared that anti-racism is necessary and would make them better health care providers.

Nursing educators must re-evaluate how cultural competency training is delivered in order to support genuine anti-racism practice. Listening to the experiences of students currently engaging with the healthcare system can inform anti-racism action plans in educational institutions, contributing to cultural change and addressing the systemic inequalities.



## Newcomer men's mental health in Brandon, Manitoba: Experiences, perceptions, & recommendations

MADELEINE KRUTH, MSc, RACHEL HERRON, PhD, CANDICE WADDELL-HENOWITCH, PhD,  
KERSTIN ROGER, PhD, & JONATHAN A. ALLAN, PhD

Brandon is a growing, increasingly diverse community. Located on the traditional homelands of the Dakota, Anishanabek, Cree, Oji-Cree, Dene, and Métis peoples, it is also home to many who arrived from other places. Our continued efforts to understand and support newcomers' experiences are increasingly important in an era of polarization. Our ability as Canadians to help newcomers thrive upon their arrival depends on our understanding of newcomer experiences. This research specifically investigates how newcomer men perceive and experience mental health in Brandon.

Partnering with Westman Immigration Services, researchers conducted focus groups divided into language (Arabic, Somali, Tigrinya, and Ukrainian) with the help of interpreters. Newcomer men in non-metropolitan Manitoba face unique challenges to their mental health. While individual experience differs, this research found newcomer men thought about mental health in terms of stressors, the most significant in finding suitable employment (preferring to work for an income rather than receiving refugee stipends), the cultural and linguistic adjustment, obtaining adequate education, and concern for familial safety in their country of origin (feeling helplessness, unable to protect or support those they cared about). They wanted to contribute to Canadian society in any way possible while also staying busy and learning how to support themselves and their families. While there are benefits to living in a non-metropolitan centre, employment opportunities are often limited, especially for those not fluent in English or whose credentials are not acknowledged by Canadian systems.

While there may be significant difficulties in addressing some of the stressors identified by newcomer men, others can be mitigated through targeted employment and education programs. This research informs how we might best support newcomer men throughout and following settlement here in Manitoba.

*Fellow researchers: Mairo Ahmadi, BA, & Margaret de Jager, BA, BSc*

## Acute care recovery-oriented milieus

ANDREA THOMSON, RPN, BScPN, MPN, & SHARRAN MULLINS, RPN, BA, BScPN, MPN

Acute care mental health units are hospital-based settings structured to provide care and support to clients experiencing psychiatric distress and crisis. Acute care psychiatric and mental health (PMH) nurses are often tasked with dual roles of providing clients with choices regarding their treatment plan while managing unwanted or unsafe behaviors, like agitation and aggression. These circumstances require that PMH nurses balance the demands of individual clients with the needs of the unit milieu (managing and maintaining a safe environment). Literature regarding recovery-oriented practices in acute care settings is limited.

The study, using interpretive description, included semi-structured interviews and focus groups (participants ranging in experience as PMH nurses from 3 to 46 years) to answer the question, “What strategies and resources do PMH nurses identify as being most conducive to fostering a recovery-oriented acute care milieu?” A recovery-oriented milieu was described as a safe, peaceful, and holistic environment with adequate space to balance clients’ needs

for privacy, interaction, and activity. It is fostered through healthy relationships among team members, clients, family, and formal supports. PMH nurses have the knowledge, theory, and desire to promote recovery-oriented milieus; however, resources such as group therapy and recreational activities are required to achieve this depiction.

Creating environments that promote recovery involves leadership, mission, culture, teamwork, technology, and service alignment consistent with the principles of recovery. Balancing privacy, rest, and meaningful activities were described as essential to enhancing recovery for individual clients and the unit as a whole. Participants reported occupational or recreational therapists would be the professionals most equipped to address the holistic needs of an acute care setting and persons residing there. However, given current funding constraints, positions for these types of service providers have been reduced. Staffing should align with recovery-oriented care to enhance service provision.

## Medical assistance in dying (MAID): Putting a value on human life and right to die

NORA AHMAD, RN, BN, DMedSc, NADINE HENRIQUEZ, RN, BN, MN,  
& PANAGIOTA TRYPHONOPOULOS, RN, PhD

The legalization of medical assistance in dying (MAID) represents a historic change in Canadian society following the passing of Bill C-14 in 2016. There is limited research about how nurses perceive their clinical role and responsibilities with MAID in the Canadian context. To understand nurses’ perspectives and contribute to the literature concerning MAID, this study explored registered nurses’ attitudes and philosophical perspectives in providing care for someone choosing MAID—whether directly aiding, providing supportive care, or declining to participate. We also looked at its potential legal and psychological risks.

This study used a qualitative (grounded theory) approach. Twenty participants were interviewed by phone using semi-structured questions. We found six themes that describe nurse’s attitudes and philosophical perspectives on how participating or declining to participate in MAID will shape their clinical nursing practice and personal impact: putting a value on human life, maintaining dignity and control at the end of life, an easy way out of suffering and as a backup option, a new path of the palliative care continuum, death and dying (new bereavement process), and ethical challenges (family against patient’s wishes, conscientious objection).

Many had conflicting beliefs and values on how the sacredness of human life is at the heart of tensions related to this legislation. It is important for our healthcare system and governing bodies to address current gaps and inconsistencies in the quality and availability of palliative care. Nurses also voiced the need for the development of clear guidelines or policies on nurses’ roles in directly aiding, providing supportive care, or declining to participate in the process of MAID. This research can be used to provide education and training to ensure nurses feel comfortable, confident, and competent to engage with patients seeking MAID.



# Openings – An art exhibition



LISA WOOD, MFA, BFA

Assistant Professor, IshKaabatens Waasa Gaa Inaabateg Visual Art

By using surveillance cameras to document an art exhibition opening reception at Neutral Ground Gallery in Regina, Saskatchewan, this project explored ritual, transience, food, and community. The time-lapse images captured gallery-goers at the snack table and cash bar, which were then examined for patterns in behaviour, looking at the different ways in which people take up space, interact with each other and use food and drink to ease their social interactions. These images became source material for a new exhibition—*Openings*—exhibited at Neutral Ground Artist Run Centre in Regina, SK (2018) and the Art Gallery of Southwestern Manitoba in Brandon (2019).

This exhibition provided an opportunity to study a single art community within the context of the larger Canadian art world, and to reflect upon and highlight similarities and differences with other art communities across the country. Rituals around food and drink, in particular, were a focus, as they are essential to social inclusion and belonging and are integral to marking celebrations.

Analyzing the surveillance photography through painting led to understanding how community cohesion and belonging are established and maintained through rituals. It also provided an opportunity to reflect on whether these rituals are inclusive—expanding contemporary culture—or exclusionary.

Through this process, four interesting behaviours were identified: (1) consuming food, (2) buying drinks, (3) hugging and gossiping, and (4) following the crowd. Images of attendees displaying each of the thematic behaviours were flagged, and artworks

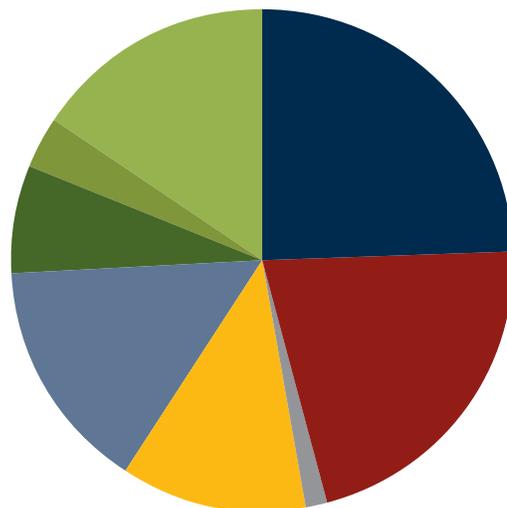
that illuminated these behaviours were created by superimposing figures together in paintings and drawings.

In *Slip Inside*, three suspended panels create a floating wall depicting a dense crowd of folks mid-bite, mouths open, self-absorbed. In *Embrace, Gossip*, two suspended panels create a small hallway for a viewer to step inside. On either side, friends come together to hug and greet each other, offering each additional comfort while exchanging sideways glances and whispers about those around them. In *Know Your Bartender*, ten framed paintings show patrons at the bar interacting with the bartender, who is seen only by her hands, reducing the bartender to a mere vehicle to acquire wants. Finally, in *Follow the Crowd*, a time-lapse video projected over a suspended drawing shows patrons listening to artists' talks, moving en masse from one side of the gallery to the other as if unconsciously guided by an unseen force.

The resulting artwork from this project prompts audiences to reflect on why these normalized rituals and performed behaviours perpetuate the culture of art openings. The works help create self-awareness, compelling the community to ask if these behaviours are welcoming or exclusive. The artwork highlights the importance of community and celebration in advancing art and visually archive the community members from one particular opening. This archiving aspect can be used to reflect on who is included in this community and who is not. Ultimately, the aim is that through these reflections, the art opening experience can be altered to be more inclusive, advancing contemporary Canadian culture.

## External and Internal Research Funding 2020-2021

SSHRC	\$790,809
NSERC	\$691,048
CIHR	\$43,351
Canada Research Chairs Program	\$390,000
Research Support Fund	\$476,663
Other Federal	\$222,135
Province of MB	\$107,423
Other - Industry, Business, Organizations	\$500,770
<b>Total Funding</b>	<b>\$3,222,199</b>



## BRANDON UNIVERSITY RESEARCH COMMITTEE (BURC) 2020-2021

The goal of the Brandon University Research Committee (BURC) is to encourage research through the provision of research grants to Brandon University faculty. Grants are awarded to support the development of research at Brandon University and, in doing so, to enhance the institution's national competitiveness in terms of Tri-Agency research funding.

Total Funding Awarded in 2020-2021: \$98,096

## CANADA RESEARCH CHAIRS (CRC)

### DR. JONATHAN A. ALLAN

Tier 2 Canada Research Chair in Men and Masculinities

Dr. Allan studies representations of men's sexual and reproductive health, especially men's experiences of infertility.

### DR. RACHEL HERRON

Tier 2 Canada Research Chair in Rural and Remote Mental Health

Dr. Herron uses community-based research to develop more supportive environments for mental health in rural and remote areas.

### DR. MOUSUMI MAJUMDER

Tier 2 Canada Research Chair in Genotoxicology

Dr. Majumder conducts comprehensive genotoxicological research to identify risk factors associated with breast cancer, understand tumor microenvironment, and find biomarkers for early breast cancer detection.

### DR. SARAH PLOSKER

Tier 2 Canada Research Chair in Quantum Information Theory

Dr. Plosker develops the mathematical foundation behind quantum information theory.

## Centre for Aboriginal and Rural Education Studies (CARES)

Founded in 2008, the aim of BU CARES is to promote and facilitate research activities that are of interest to rural, northern, and Indigenous communities, school divisions, and related organizations. The centre offers research support and networking opportunities for researchers actively involved in Indigenous and rural education research. CARES research projects have involved topics such as youth homelessness in rural areas, pathways to educational and employment success, engaging youth in community change, and anti-racism. The reports and publications from these projects are all freely available on our website [bucares.ca](http://bucares.ca).

## Tourism Research Centre (TRC)

The Tourism Research Centre was established to build networks on campus and beyond, build research programs with those interested in tourism research, and to facilitate outreach opportunities with communities and tourism agencies and organizations. As the tourism industry grows locally, nationally, and internationally, so does the need for tourism research.

## Centre for Critical Studies of Rural Mental Health (CCSRMH)

The Brandon University Centre for Critical Studies of Rural Mental Health was established in the spring of 2019. The intent of the centre is to respond to the issues facing rural people and communities through innovative, community-connected research and education that will, in turn, inform mental health policies and practices. The centre will act as a catalyst for collaborative rural mental health research while linking research results to people who can use them.

## Rural Development Institute (RDI)

Founded by Brandon University's Board of Governors, the Rural Development Institute is proud of the 30 years of history as a centre of excellence. In addition to over 3,000 reports, publications, and presentations all free to download, the institute also publishes the peer-reviewed *Journal of Rural and Community Development*. As a multi-disciplinary centre, it applies its knowledge and expertise in Westman, Manitoba and across Canada. To help define its efforts it pursues five strategic directions: rural immigration, regional economic development, rural governance and capacity building, rural infrastructure, and rural innovation. For more, see [BrandonU.ca/RDI](http://BrandonU.ca/RDI).

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