



**CCHSA** **CCSSMA**  
Canadian Centre for Health and Safety in Agriculture  
Centre canadien de santé et sécurité en milieu agricole

# ANNUAL REPORT

*& summary of activities*

**2020 - 2021**

## MESSAGE FROM THE DIRECTOR ● ● ●



Well over one year into the pandemic there is now some light on the horizon with cases dropping currently and over 70% of Saskatchewan's population (12+) being vaccinated. After what has been a difficult year on many fronts, this is very encouraging news. I notice the optimism in CCHSA faculty and staff as well, with hope of eventual but gradual return to activities as before. At the moment CCHSA is still closed, but the University is developing reopening plans. Despite all of this it has been a very busy year, as the annual report highlights. I continue to provide assistance on a variety of fronts to the Saskatchewan Health Authority (SHA) on COVID occupational health issues, including roles on expert advisory panels and direct assistance to occupational health nurses and contracted physicians providing occupational health support. It has been a privilege to be part of so many capable and dedicated teams.

So many remarkable lines of research and outreach have continued and developed over the year. Rural health remains a key area including the work of the Rural Dementia Action Research (RaDAR) Team and the Musculoskeletal Health and Access to Care research group. Through many partnerships and collaborations, our faculty continue research and outreach in respiratory exposures and health effects, farm injury and fatalities, musculoskeletal health, proteomics and metabolomics, rural dementia, asthma, diabetes in First Nations, and sleep health among First Nations People. We await news on a submitted Canadian Institute of Health Research (CIHR) proposal on rural sleep and mental health.

We are also very excited to welcome Dr. Angelica Lang to the Centre as our newest Faculty Member in the area of Ergonomics and Musculoskeletal Health as of July 1, 2021. Welcome Dr. Lang!

The Agricultural Health and Safety Network has had another very busy and successful year with outreach and knowledge translation. The Network has built and maintained library of COVID resources for agriculture and has been a very active partner in national efforts to coordinate resource development and communication strategies for agricultural producers across Canada. The Spring-Summer 2021 Network News will be delivered to approximately



### OUR MISSION

*To conduct and stimulate research, education and health promotion programs aimed at enhancing the health and well-being of agricultural, rural and remote populations*

25,000 rural and farm families with important health and safety articles on a number of topics including COVID, Mental Health, Ticks and Lyme disease, Sun Exposure, Fire Prevention and other topics. The Network received a grant to develop a Farm Safety Plan in partnership with the Ministry of Agriculture for 21-22, continues to deliver Discovery Days remotely to rural school-age children during the school year, and partnered to help deliver webinars in mental health and resiliency for producers. A new updated Respiratory Resource is also nearing completion. CCHSA also continue to provide the knowledge translation for 7 different applied research programs for the next few years under the Agrivita Canada Agrisafety Applied Science Program to the tune of approximately \$470,000 (matched), including bulletins and annual reports, and organizing annual Agrisafety Summits.

Did you know that CCHSA offers clinical occupational health screening and surveillance to employers and producers through the CCHSA CANWORKSAFE program? This includes hearing and lung function testing as well as respirator fit testing, medical fitness-to-wear respirator assessments, and WCB communication if necessary. If you are interested in finding out more, let us know!

As I have noted before, I remain humbled and proud of our staff and faculty and their resilience and adaptability over such a challenging year. Hopefully we are slowly returning to a semblance of normal over the coming months, recognizing that it will likely be a very new normal in many ways.

Wish you all a very safe and healthy year,



Niels Koehncke, MD, MSc, FRCPC  
*Director, Canadian Centre for Health & Safety in Agriculture*



## **OUR VISION**

*World leadership in the health of rural people*

# RESEARCH ●●●

## RURAL DEMENTIA ACTION RESEARCH (RADAR) TEAM



Dr. Debra Morgan, CCHSA Professor and Chair in Rural Health Delivery, has been leading the interdisciplinary Rural Dementia Action Research (RaDAR) team since 2003. The team's goal is to improve dementia care in rural and remote settings.

## SUMMIT OF THE KNOWLEDGE NETWORK IN RURAL AND REMOTE DEMENTIA CARE



*Dr. Irene Blackberry*

The RaDAR research program is guided by The Knowledge Network in Rural and Remote Dementia Care. The Network includes front-line health care providers and managers, people with dementia and family members, health region representatives, international researchers, and individuals from governmental and community-based organizations. The Network meets at the annual Rural Dementia Care Summit, the RaDAR team's key knowledge exchange event, where Network members provide input into new and ongoing research projects. Duane Minish directs Summit organization and coordination each year.

The RaDAR team held its 13th annual summit November 9 & 10, 2020. Summit 2020 was the team's first to be held as an online only virtual event. One hundred fifty-one individuals registered for the event that included a poster session and a mix of both live and pre-recorded presentations on a variety of dementia-related topics from a diverse group of presenters. Keynote speaker Dr. Irene Blackberry, John Richards Chair of Rural Ageing and Aged Care Research and Director of the John Richards Centre at La Trobe University, Wodonga campus, joined us at Summit from Australia.

*More information about the Summit, including archived full presentations from many of the sessions, can be found on the RaDAR team's website under the Previous Summit tab: [www.ruraldementiacare.usask.ca](http://www.ruraldementiacare.usask.ca)*

## BILOKRELI FAMILY TRUST FUND

The Bilokreli family have established the Bilokreli RaDAR Trust Fund and generously committed \$25,000 per year from 2015 through to 2017, and renewed the funding for 2018 to 2020. The fund supports RaDAR's research and knowledge exchange activities, including the Student Poster Prize at the annual Summit. This year's Bilokreli Student Poster Prizes were awarded to:

**FIRST PLACE:**  
*Karl Grewal and Michaella Trites*  
(co-presenters)

**SECOND PLACE:**  
*Virginia Deobald, and Meghan Flath*  
(tied)

**THIRD PLACE:**  
*August Kortzman*

## RURAL AND REMOTE MEMORY CLINIC

Due to COVID-19, and the closure of the University of Saskatchewan buildings to the public, the Rural and Remote Memory Clinic (RRMC) team had to adapt its way of providing services. RRMC services have switched to being provided entirely virtually. Patients and family members meet with the interdisciplinary team for assessment on one day using secure web-conferencing, or teleconferencing, depending on the technology available to them in their home. The clinic adapted its referral process for health care practitioners as well to better meet their needs during this time. Learn more at [www.remotememoryclinic.ca](http://www.remotememoryclinic.ca) about the services provided virtually to the people and health care providers in our province.

The RaDAR team implemented the Rural and Remote Memory Clinic (RRMC) in 2004, to provide diagnosis and management of atypical and complex cases of suspected dementia. The one-stop interdisciplinary clinic streamlines the assessment process by coordinating a complete team assessment on one day, and uses Telehealth videoconferencing for follow-up appointments. The RRMC was started as a research project and now receives funding from the Saskatchewan Ministry of Health to provide clinical services to Saskatchewan residents. Since 2004 over 753 patients have been seen in the clinic.

Several CCHSA-affiliated RRMC team members support the RRMC including: Leslie Holfeld (nurse); Duane Minish (psychometrist); Dr. Allison Cammer (dietitian); and Dr. Chandima Karunanayake (data

analyst). Other clinic team members include Dr. Andrew Kirk (neurologist), Dr. Megan O'Connell (neuropsychologist), Dr. Ivan Panyavin (staff in psychology), Jennifer Fairbairn (physical therapist), and Julie Jensen (physical therapist).

## CANADIAN CONSORTIUM ON NEURODEGENERATION IN AGING (CCNA) PHASE II (2019-2024)

The CCNA was established by the Canadian Institutes of Health Research in April 2014 to address the growing prevalence of Alzheimer Disease and other dementias in Canada. The CCNA Phase II brings together over 350 researchers across 19 teams, including CCNA Team 15 Rural led by Drs. O'Connell and Morgan. As part of Team 15, the RaDAR team continues to sustain and evaluate the impact of 4 rural memory clinics established in southeast Saskatchewan in CCNA Phase I. This work is co-led by Drs. Morgan and Kosteniuk. Twelve Phase II projects are currently in progress. Included are projects examining patient quality of life and community service needs (interviews), patient characteristics and clinic team recommendations (electronic medical record data), and care partner service/support needs and self-efficacy (interviews).

CCNA hosts an annual in-person Partners Forum and Science Day (PFSD) which is attended by all 19 CCNA teams. Due to the pandemic, PFSD 2020 was held as a virtual event.



## CIHR FOUNDATION GRANT (2016-2023)

Dr. Debra Morgan holds a multi-year CIHR Foundation Grant for the research program “Design and evaluation of integrated primary health care practice for dementia in rural and remote settings”. Co-investigators include Drs. Julie Kosteniuk, Megan O’Connell, Andrew Kirk, and Norma Stewart, and other Canadian and international experts.



The core of the Foundation program is to sustain rural PHC memory clinics that offer initial evaluation and management of individuals with suspected dementia, and scale-up the clinics to additional communities. Monthly 1-day memory clinics have been established in the southeast Saskatchewan communities of Kipling, Weyburn, Rural West (Bengough and Coronach), and Carlyle. Clinic team members include physicians, nurse practitioners, home care nurses, social workers, occupational therapists, physical therapists, and an Alzheimer Society First Link coordinator. Learn more about the clinics under the Rural PHC Memory Clinics tab on our team website [www.ruraldementiacare.usask.ca](http://www.ruraldementiacare.usask.ca)

**Nonpharmacological Interventions**

- Training caregivers or staff
- Mental health consultations
- Participation in pleasant events
- Exercise
- Music
- Sensory stimulation (e.g. touch, Snoezelen, aromatherapy)

Cohen-Mansfield, Am J Geriatr Psychiatry, 2001  
Livingston, Am J Psychiatry, 2005  
Seitz, JAMDA, 2012



*The RaDAR team provides continuing education opportunities for rural teams, like training sessions presented by geriatric psychiatrist, Dr. Dallas Seitz -- both in-person (pre-COVID) and online*

**The RESPECT project team** (remote specialist-to-primary care education and support through technology) **led by Dr. Megan O’Connell** has conducted a systematic review of technology-based dementia education that can be used for remote education with rural PHC teams. We explored the accuracy of computerized neuropsychological testing battery, but based on our findings we decided to not trial this method of assessment. Instead, we are exploring use of a telephone administered neuropsychological battery to be tested with PHC teams as a means of specialist cognitive support for dementia diagnoses. Problems with remote assessment models led to the newly developed **RRMC2.0** that was funded by a SHRF/SCPOR SPROUT grant. In the RRMC2.0 model centralized assessments occur over the telephone and patients are triaged to different diagnostic pathways. For the most typically presenting cases, diagnoses will be made in collaboration with the RRMC2.0 staff psychologist and primary care providers. Finally, we developed an alternate method of remote specialist support with the Rural and Remote Memory Clinic-interventions (**RRMCi**) where we provide remote psychological interventions for rural PHC providers’ patients with dementia and their caregivers who are in need of treatments related to sleep disturbance, maximizing daily function with cognitive rehabilitation, psychological consequences of driving cessation (in development), increasing social support for caregivers, and social inclusion for older adults including those with dementia during the era of COVID-19.



*Ivan Panyavin*

**Dr. Ivan Panyavin** has continued to be actively involved with running the virtual Rural and Remote Memory Clinic (vRRMC), as well as the RRMC2.0 operations, providing diagnostic neuropsychological services to residents of rural Saskatchewan. He also continued to deliver individualized empirically derived treatment for chronic sleep disturbance, as well as cognitive rehabilitation services for individuals with cognitive impairment and their care partners. Dr. Panyavin has been supervising professional development of Doctoral trainees in Clinical Psychology and has contributed to a number of peer-reviewed publications, as well as a book chapter in a forthcoming volume titled *A Handbook of Cultural Diversity in Neuropsychological Assessment: Developing Understanding through Global Case Studies*.



*Amanda Froehlich  
Chow*

**Dr. Amanda Froehlich Chow**, an Assistant Professor in the School of Public Health at the University of Saskatchewan, is working with RaDAR to understand the team-based approaches interdisciplinary rural primary health care teams are employing. In addition, Dr. Froehlich Chow is collaborating with rural Indigenous communities to develop resources for supporting older adults to actively age in place in their rural and remote communities.



*Juanita Bacsu*

Projects led by **RaDAR Postdoctoral Fellows** contribute to the Foundation project aims. **Dr. Juanita Bacsu** and a team of researchers have started a new study using Twitter data to examine stigma of dementia during the COVID-19 pandemic. This study builds on her team’s latest publication in the Journal of Medical Internet Research (JMIR) that used Twitter data to explore the COVID-19 impact on people with dementia. She is also collaborating with a working group from CCNA’s Team 18 to conduct a scoping review protocol, and a review of reviews to appraise Indigenous cultural safety within healthcare delivery and identify specific implications for dementia care. Recently, Dr. Bacsu and her colleagues completed a commentary on improving the health equity and human rights of people with dementia during the COVID-19 pandemic using a social determinants approach. Dr. Bacsu is also collaborating with the Alzheimer Society of Canada to host a knowledge exchange webinar and discuss findings from her community-based research on stigma of dementia in rural areas.



*Melanie Bayly*

**Dr. Melanie Bayly** is investigating the experiences of patients and families who are assessed for dementia by rural memory clinic teams, in order to understand their perspective of the team-based model of care and how assessment processes could be improved. Additionally, Dr. Bayly and the RaDAR team are collaborating with the Alzheimer Society of Saskatchewan to assess the benefits, challenges, and outcomes associated with the inclusion of a First Link coordinator in this team-based model. Mel has also been working on a meta-analysis of early-stage interventions for caregivers of persons with MCI and dementia, to assess their impact on caregiver wellbeing and ability to provide care.



*Elham Movassagh*

**Dr. Elham Movassagh** is working on the RRMC data to evaluate the nutrition risk of patients who were diagnosed with dementia or subjective cognitive impairment (SCI), using a nutrition screening tool named SCREEN ([www.olderadultnutritionscreening.com](http://www.olderadultnutritionscreening.com)). Questions on the SCREEN focuses on the weight change, appetite, eating difficulties, food preparation and, food group and fluid intake. SCREEN is developed to be used in community-dwelling older adults. In her project, Dr. Movassagh is investigating how higher level of dependency, depression, lower quality of life, comorbidity, and higher level of caregiver burden impact nutrition risk in people with dementia or SCI. Early identification of people with high nutrition risk and detecting the associated factors can lead to interventions that maintain the quality of life and decrease risk of hospitalization. This is the first study that uses SCREEN in people with dementia and SCI and it will contribute to the knowledge of nutrition risk screening in these groups.

Another RaDAR project recently underway, led by RaDAR team member **Valerie Elliot**, is an environmental scan to explore community programs providing post-diagnostic services to clients who might include RaDAR Rural Primary Health Care Memory Clinic patients and families in southeast Saskatchewan. This project will include focus groups with health care and service providers and a review of secondary sources of information conducted at two time-points over five years. Our goal is to better understand the availability of existing local community programs, current patient and family needs, program gaps and recommendations to address these gaps, and program changes or innovations over time. Focus groups and data extraction of secondary sources for the first time-point have now been completed and a process for adding the patient-family perspective via telephone interviews is currently being developed.

## **RADAR INITIATIVES**

- Partnership with Saskatchewan Health Quality Council: Drs. Morgan, O'Connell, and Kosteniuk and the Saskatchewan Health Quality Council are conducting a number of ongoing projects involving administrative health data. One of the projects is investigating the impact of the COVID-19 pandemic on people living with dementia in 4 provinces (PI Dr. Isabelle Vedel, McGill University) with Dr. Debra Morgan leading the Saskatchewan component. A recently completed project involved examining dementia rates and health care use in Saskatchewan First Nations in partnership with the Federation of Sovereign Indigenous Nations (PI Dr. Jennifer Walker, Laurentian University).
- Synthesis Reviews: The RaDAR team utilizes a collaborative team-based approach to map, synthesize, and identify gaps in the evidence across several dementia-related areas. Topics related to individuals living with dementia that were explored in the first round of scoping reviews included: support and education access and needs, team-based primary health care, stigma, and multiple physical care transitions. Published reviews can be found on the RaDAR website [www.ruraldementiacare.usask.ca](http://www.ruraldementiacare.usask.ca) under the Publications tab. Round two is currently underway and includes scoping reviews in the following areas: use of electronic medical records among interprofessional primary care teams (led by Julie Kosteniuk; currently under review), palliative care for people with dementia in rural areas (led by Valerie Elliot, published January 2021), and a systematic review on interventions for caregivers of people with mild cognitive impairment and early dementia (led by Melanie Bayly, currently under review).





## RADAR AFFILIATED STUDENTS & TRAINEES

- **Melanie Bayly**, PhD, Postdoctoral Fellow with Dr. Morgan. Dr. Bayly is working with RaDAR on needs and supports for individuals with dementia and their caregivers living in rural areas.
- **Julie Beitel**, BSc Nutrition student with Dr. Cammer completed an examination of urban and rural Registered Dietitian practice in long-term care homes during the first wave of the COVID-19 pandemic.
- **Virginia Deobald**, Masters student, Nursing, with Dr. Shelley Peacock. Virginia's thesis is focused on non-pharmacological interventions for persons living with dementia while in long term care facilities from the nurse perspective.
- **Meghan Flath**, Masters student, Clinical Psychology with Dr. O'Connell, is working on a pet augmented social inclusion intervention for persons with cognitive impairment and dementia.
- **Ben Gould**, PhD student, Clinical Psychology with Dr. O'Connell is exploring Mi'kmaq community Mental Wellness needs, identifying and discovering appropriate approaches to improving aging and quality of Life.
- **Karl Grewal**, PhD student, Clinical Psychology with Dr. O'Connell is working on integrating sensor technology to measure daily function as an outcome measure for cognitive rehabilitation for persons living with dementia.
- **August Kortzman**, PhD student, Clinical Psychology with Dr. O'Connell, is working on developing a social network intervention that can be remotely delivered to rural caregivers of persons living dementia.
- **Erin Leeder**, MSc student in Nutrition with Dr. Cammer is working on a project using nutrition data from the Rural and Remote Memory Clinic.
- **Elham Movassagh**, PhD, Post-doctoral Fellow with Dr. Morgan. Dr. Movassagh joined the RaDAR team in October 2020 with a background and interest in aging diseases, and is engaged in projects evaluating associations between dementia and nutrition.
- **Seshni Naidoo**, MSc student in Nutrition with Dr. Cammer is examining the nutrition related support required in urban and rural house-model long-term care homes.
- **Andrea Scerbe**, PhD student, Clinical Psychology with Dr. O'Connell, is working on technology-based methods for remotely delivering dementia education to rural primary care providers.
- **Jake Ursenbach**, PhD student, Clinical Psychology with Dr. O'Connell, is working on differences in rural and urban dwellers in cognitive function, which has implications for assessment and dementia diagnosis for rural patients.

## **A COMMUNITY-INFORMED TEAM AND TECHNOLOGY APPROACH TO CHRONIC BACK PAIN MANAGEMENT IN PARTNERSHIP WITH A NORTHERN SASKATCHEWAN CREE FIRST NATION**

This project focuses on a community-identified need and builds on a 5-year history of engagement with the Peter Ballantyne Cree Nation and the Northern Saskatchewan community of Pelican Narrows. A research team comprised of researchers, decision makers, and health care providers is guided by Elders and community members with chronic back pain to implement and evaluate a culturally relevant approach for chronic back pain management. In this project, physical therapists will use remote presence robot technology combined with in-person care to link with other care providers and supports in the community.

Western-based services and evaluation approaches may not reflect Indigenous ways of knowing. Cree perspectives and experiences inform this project through engagement with community by applying community-based participatory action research methods in order to better support Cree community members who experience chronic back pain. We have co-designed a way to manage back pain using a team and technology approach with the guidance of community members and Elders throughout the project based on a community needs assessment. Due to the pandemic, the intervention in the community has been delayed; however, we are hopeful that we will be able to start in the fall 2021.

This project will inform how technology-assisted models of care may be adapted for enhancing access to culturally relevant services in underserved communities in Saskatchewan and beyond.

**Funded by:** The Saskatchewan Centre for Patient Oriented Research and the Saskatchewan Health Research Foundation SPROUT grant (2018-2022)

**Research Team:** Brenna Bath (PI), Stacey Lovo, Veronica McKinney, Sally Sewap, Rose Dorion, Sarah Oosman, Nazmi Sari, Alison Irvine, Samantha Black



*Sprout research team meeting (Jan 30th, 2020)  
From left to right. Top: Brenna Bath, Stacey Lovo,  
Veronica McKinney, Alison Irvine.  
Bottom: Sally Sewap, Rose Dorion, JB Dorion*

## **EMPOWERING NORTHERN INDIGENOUS COMMUNITIES TO ENSURE EQUITABLE, APPROPRIATE AND COMMUNITY-BASED ACCESS TO MUSCULOSKELETAL CARE USING VIRTUAL TECHNOLOGY**

Nearly 36% of Saskatchewan residents live in rural and remote areas. In addition, according to the 2016 Census, 16.3% (175,015) of Saskatchewan residents are Indigenous, with 65.5% of those (114,570) identifying as First Nations, and 33.1% (57,880) identifying as Métis. Eighty five percent of Northern Saskatchewan dwellers are Indigenous. It is well understood that methods and approaches to health service models that work for urban settings are not necessarily the best options for rural and remote regions. Furthermore, models of care designed for western health systems are also not necessarily culturally relevant or meaningful for Indigenous populations.

The purpose of this project is to collaborate with three remote Indigenous communities to develop and evaluate culturally responsive musculoskeletal management programs using teams and remote presence robotics. This project will first translate research findings from an innovative team and technology model of virtual back pain care initiated through a partnership the research team, the community of Pelican Narrows and the Peter Ballantyne Cree Nation, to broader musculoskeletal care in Pelican Narrows, La Loche and Waterhen Lake.

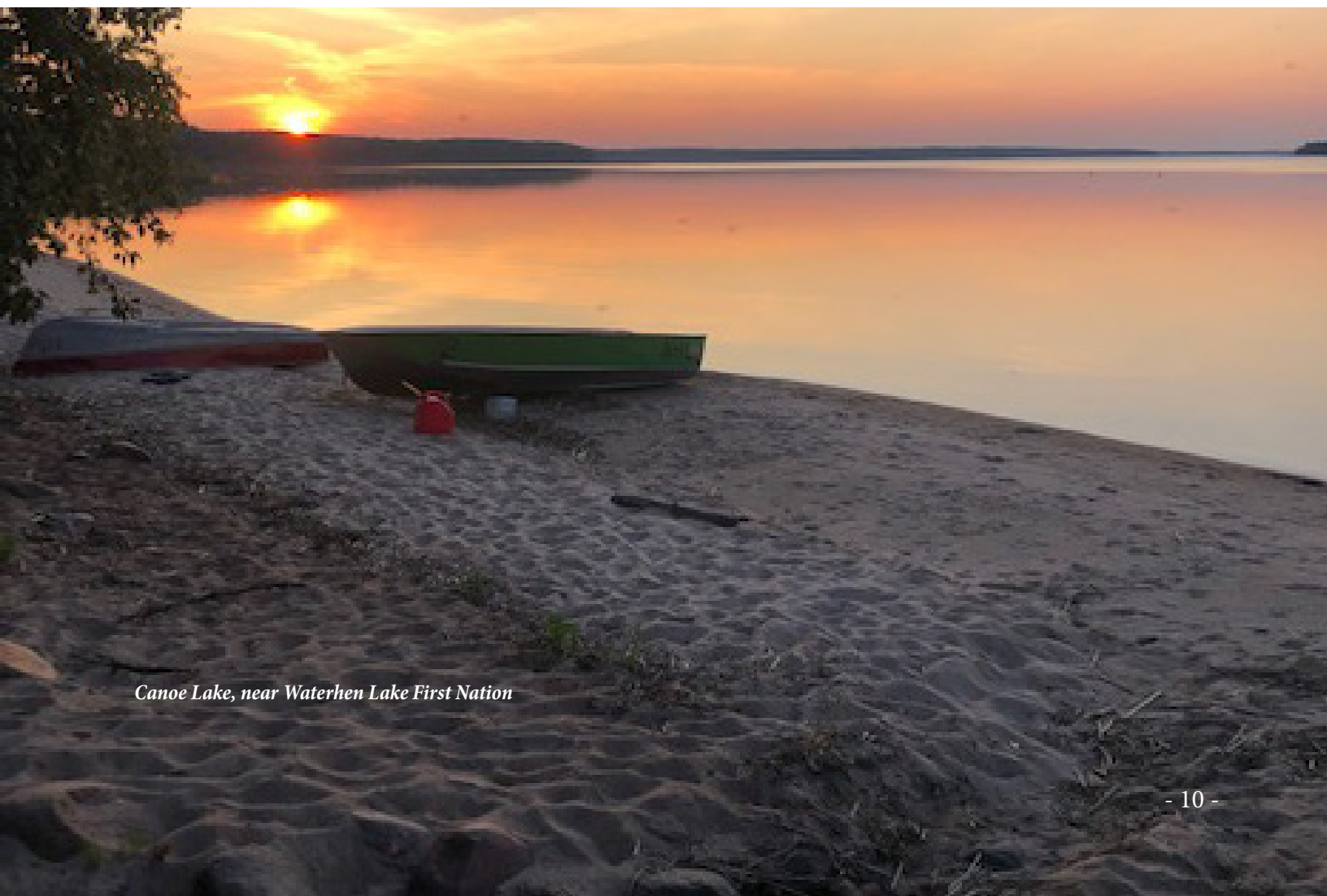
In collaboration with each community, the research team will:

1. Expand on successful virtual program planning and back pain research in Pelican Narrows to other musculoskeletal conditions;
2. Develop relationships with La Loche and Waterhen Lake First Nation to prioritize community needs and preferences for musculoskeletal care;
3. Develop and implement pilot virtual musculoskeletal service models and culturally responsive outcomes measures for each community.

This research will provide a better understanding of barriers to access and provision of culturally responsive care for chronic musculoskeletal conditions in remote Saskatchewan Indigenous communities, as well as describe experiences that highlight the consequences of access challenges.

This Solutions-IMPACT grant is funded by the Saskatchewan Health Research Foundation (2021-2023).

**Research Team:** Stacey Lovo (PI), Brenna Bath, Jaris Swidrovich, Scotty Butcher, Veronica McKinney, Ivar Mendez, Rachel Johnson, Rochelle Yelland, Deanna Larson, Marie Custer, Samantha Black, Tayah Zhang. Collaborators: Gary Linassi, Darren Nickel, Corey Miller, Niels Koehncke, Caroline Tait, Sherry Gunderson, Arnette Weber-Beeds and Esther Sunchild.



*Canoe Lake, near Waterhen Lake First Nation*

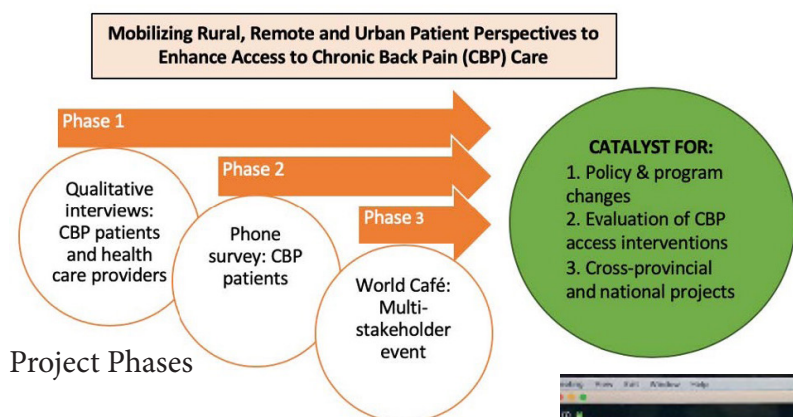
## MOBILIZING RURAL, REMOTE AND URBAN PATIENT PERSPECTIVES TO ENHANCE ACCESS TO CHRONIC BACK PAIN CARE

Little is known about barriers and facilitators to health care access among rural, remote, and Indigenous people with back pain compared to urban and/or non-Indigenous people. With approximately 30% of Saskatchewan’s population living in rural and remote settings and 16% of the province’s population being Indigenous, this is a critical gap to address.

This purpose of this project is to explore and apply the experiences of rural, remote, and urban Indigenous and non-Indigenous people with chronic back pain to develop a deeper understanding of health care access barriers and facilitators across rural, remote, and urban communities.

Our diverse research team includes 3 patient partners, Stacey McIntosh, Bertha Carnegie, and Marie Custer who are from rural and Indigenous communities. They have provided unique knowledge throughout research thus far based on their lived experiences with chronic back pain.

Our team is nearly complete the first phase of investigation, which includes understanding indicators of access and effectiveness of health care for back pain are most meaningful to rural, remote, and urban patients and health care providers through surveys and interviews. This information will inform the development of a provincial phone survey with the goal of capturing population-based comprehensive measures that will be sensitive to geographical location and relevant to culturally diverse people with chronic back pain. These measures will be used in future studies to evaluate community-based chronic back pain interventions and cross provincial/ national comparisons, ultimately leading to enhanced access to more patient-centred care for chronic back pain.



**Funded by:** The Canadian Institutes of Health Research, the Saskatchewan Centre for Patient Oriented Research (SCPOR), and the College of Medicine (2020-2022).

First team meeting (via Zoom) April 2020

**Research Team:** Brenna Bath (PI), Stacey Lovo, Veronica McKinney, Sarah Oosman, Catherine Trask, Nazmi Sari, Terry McDonald, Marie Custer, Bertha Carnegie, Stacey McIntosh, Katie Crockett, Alison Irvine, Samantha Black, Rosmary Martinez, Harini Aiyer.



First team meeting (via Zoom) April 2020

## RE-IMAGINING RURAL AND REMOTE PHYSIOTHERAPY

This interactive knowledge translation event was held on Jan 29, 2019, in Saskatoon, SK. This event brought together a number of stakeholders representing diverse perspectives (clinicians, managers, community members, researchers and policy makers) to discuss community needs, access barriers, and potential solutions to improve access to physiotherapy services in rural and remote Saskatchewan communities. The morning session include panel presentations and discussion related to:

- Rural and Remote Community Perspectives
- Recruitment and Retention Initiatives
- Innovative Use of Technology and Teams



*Dr. Veronica McKinney presenting on the context and community experiences in some of the rural and remote First Nations communities in Saskatchewan as well as the successes of remote presence robotics.*

The afternoon session was a World Café interactive small group discussion on topics including:

- Recruitment and retention
- Student training and experience
- Leveraging technology
- Engaging teams and communities
- Thinking ‘outside of the box’

A full [summary report](#) and [2-page brief](#) describing the event and recommendations can be found on our MHAC website. A manuscript is currently under development with plans for submission later in the year.



*Sally Sewap, Pelican Narrows (Traditional) Knowledge Keeper, addressing the crowd and discussing the needs and values of Pelican Narrows community members.*

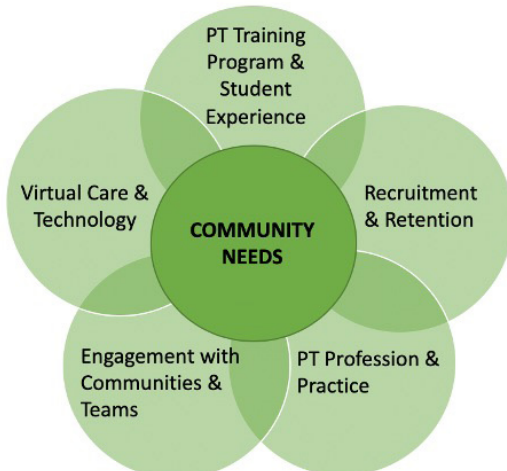
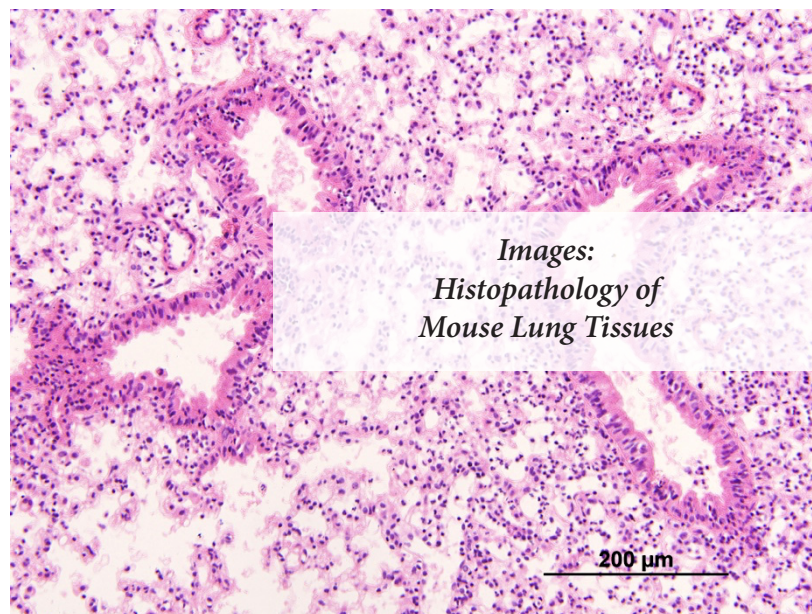
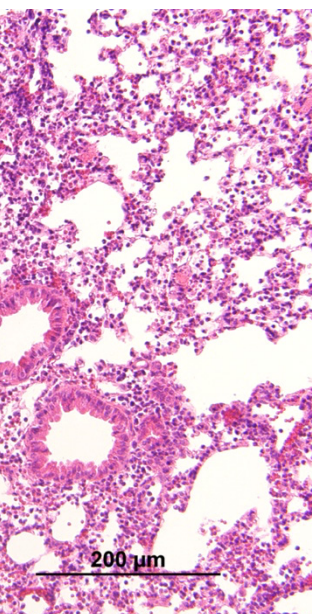
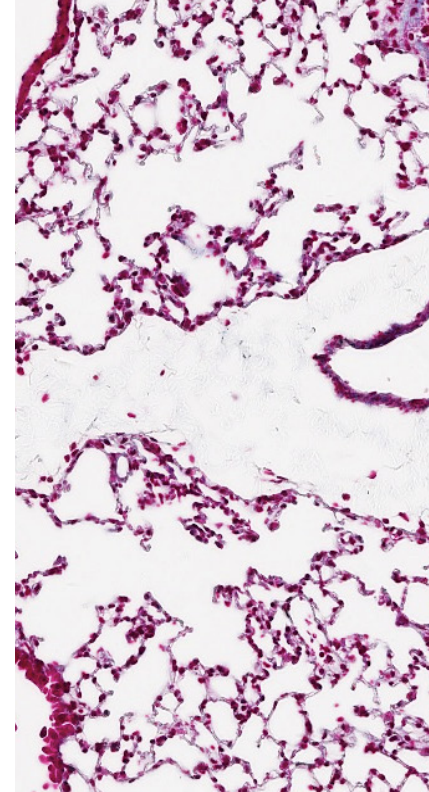
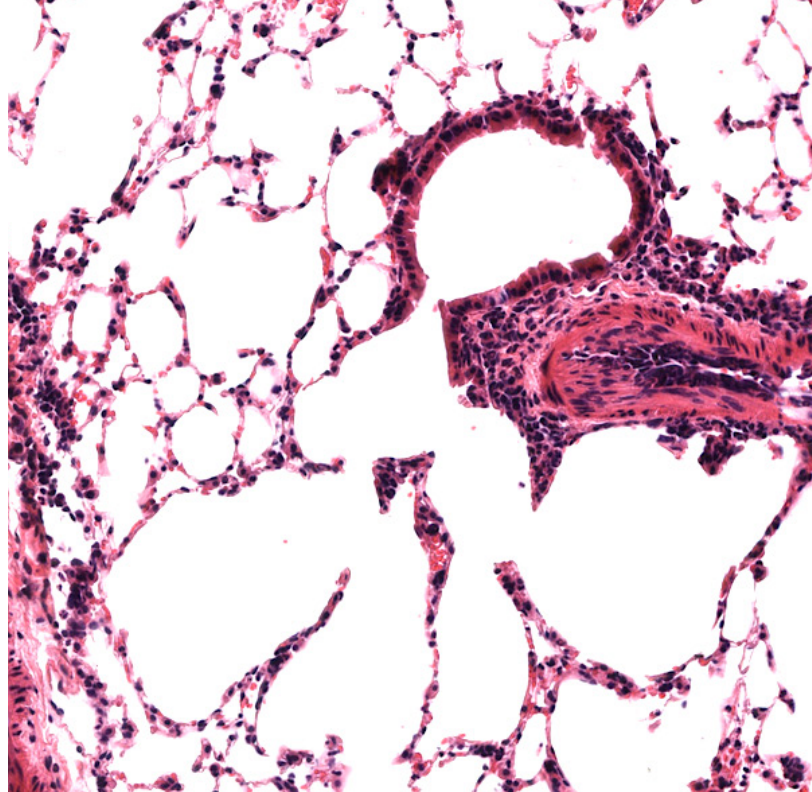
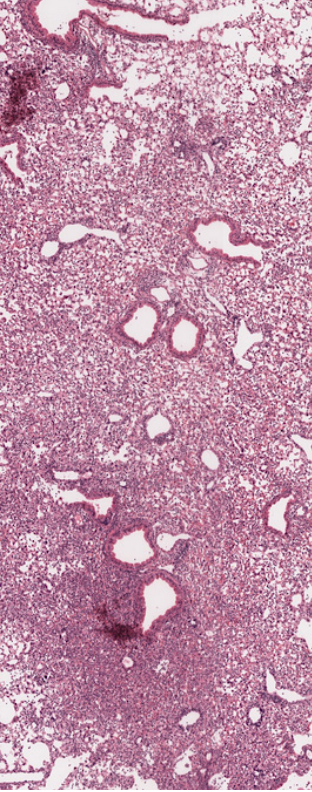


Figure 1: World Café Themes

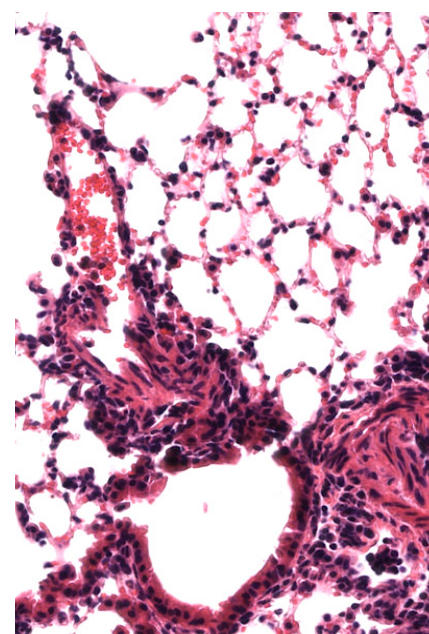
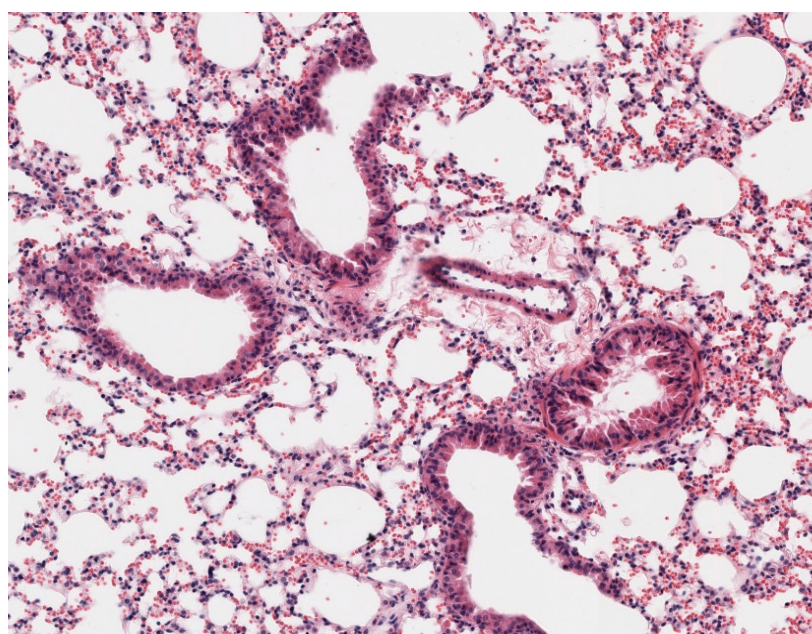
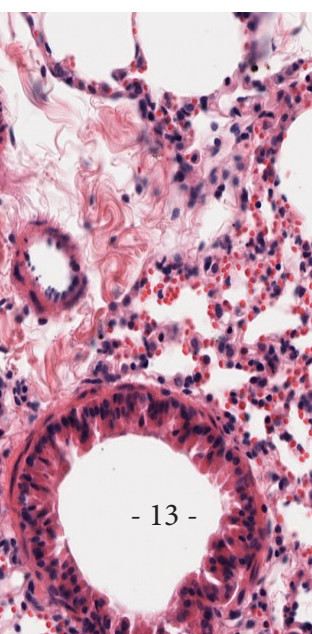
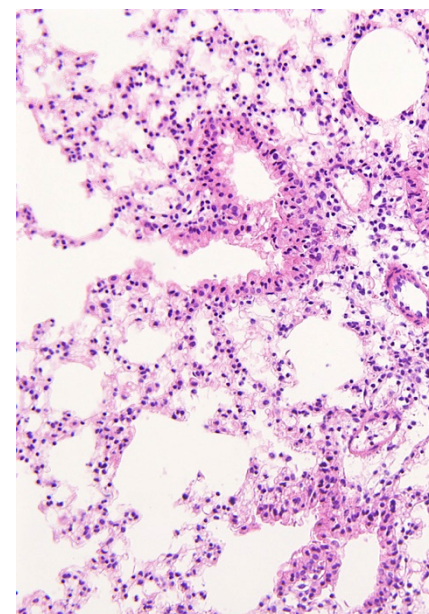
**Funded by:** Saskatchewan Health Research Foundation (Impact Award, 2018), Saskatchewan Physiotherapy Association, Canadian Centre for Health and Safety in Agriculture, Northern Medical Services.

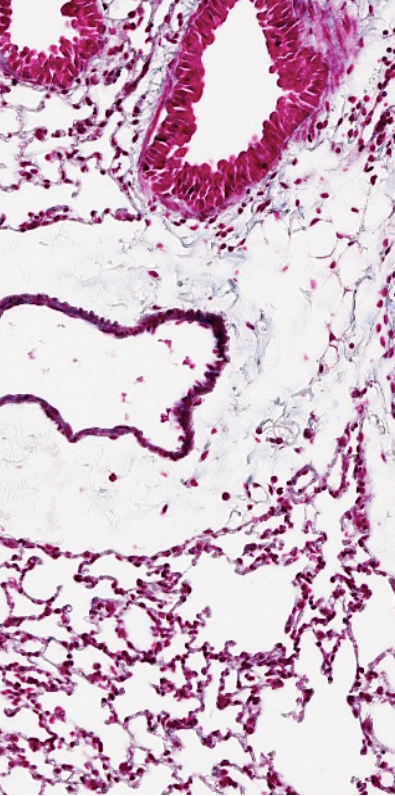
### **Organizing Committee:**

*Brenna Bath  
Stacey Lovo  
Alison Irvine  
Peggy Proctor  
Kathy Rossler  
Melanie Weimer  
Brooke Pachal*



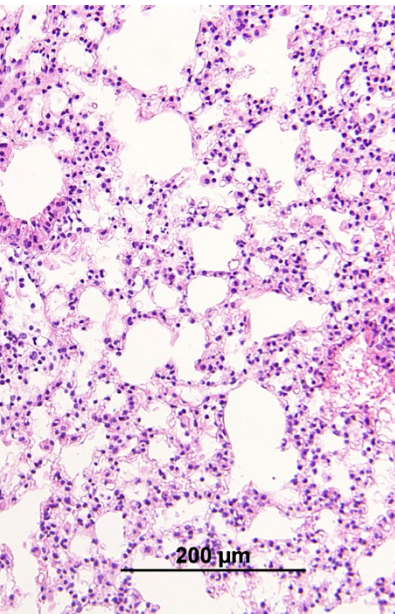
*Images:  
Histopathology of  
Mouse Lung Tissues*





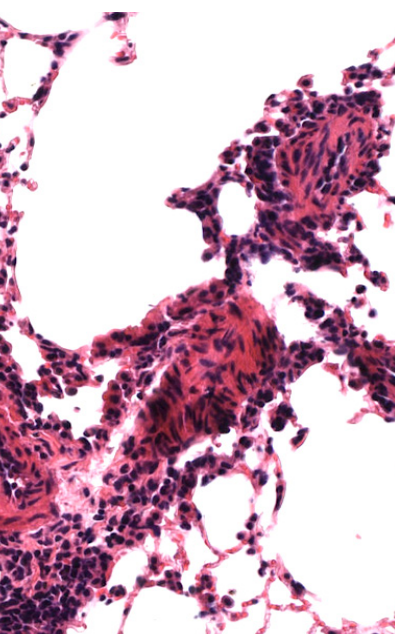
## NATIONAL AGRICULTURAL INDUSTRIAL HYGIENE LABORATORY (NAIHL)

Dr. Kirychuk's lab continues its work in respiratory exposures and health effects including utilizing the animal exposure chambers (agricultural inhalation exposures and respiratory inflammatory health) and population health activities (Housing and Health). This work includes a Laboratory Manager (Thompson), a Research Assistant (Schneberger), a Post-doctoral fellow (Nascimento), PhD students (Pandher and Merkowsky) and three Masters students (Yang, Si, Aminian). Upkar Pandher is studying lung inflammation in male mice after exposure to endotoxin and glyphosate. Kaitlin Merkowsky is studying sex differential response after exposure to endotoxin and glyphosate including using the BMIT beamline at the Canadian Light Source to study lung structural changes after exposure. They received \$30,000 from CoMRAD for the project "One of these things is not like the other: Unravelling the sex differential inflammatory response to airborne agricultural responses." Dr. Amanda Nascimento (Post-doctoral fellow) funded by MITACs, continues to study the anti-inflammatory potential of NATURES Immune and Resp Aide, natural pharmaceutical products, on lung inflammation in male and female mice. We are continuing to work on differential innate immune responses between males and females after exposure to pathogens with low elevations of gas using a mouse model.



Drs. Schneberger, Kirychuk, and Simonson received funding from the Respiratory Research Centre (\$25K) to test the effects of carbon dioxide on influenza A infection and inflammation in a mouse model. The team is using the NAIHL's animal plethysmography system for this work. We are examining the if carbon dioxide has an impact on susceptibility and responses in male and female mice.

Drs. Kirychuk, Schneberger, Soltan, and Simonson received funding from the Respiratory Research Centre (\$10K), CoMRAD (\$30K) and NSERC Alliance (\$100K) to study the impact of ventilation on the transfer and recovery of viruses during common ventilation practices. This work involves a series of steps including understanding the role of ventilation in virus transfer and infectivity; the role of recirculating ventilation in virus transfer and mechanisms for controlling viruses within ventilation systems. This work involves collaborations between Dr. Kirychuk's health sciences lab, Dr. Simonson's mechanical engineering lab, Dr. Soltan's chemical engineering lab, and Dr. Duchaine's laboratory at the University of Laval. Collaborators from respiratory medicine, pediatric respiratory medicine, and chemical engineering round out this team and research.



Drs. Zhang (Engineering), Kirychuk and Schwean-Lardner (Poultry Science) have received funding from Province (ADF) and tri-council NSERC Alliance to develop and test chemical-free solutions for eggshell surface decontamination using electro spray methods. Yingjie Yang (Research Associate) and Shiva Aminian (MSc) are working on assessing the efficacy of engineering technologies (ESP and nanospray) on eggs shell surface decontamination. Drs. Kirychuk, Zhang, and Predicala (Prairie Swine Centre) funded by the Province (ADF) and Agrivita Canada have received funding to evaluate virus transfer during transport of pigs, as well as to evaluate nanospray technology for reducing airborne contaminants in animal production facilities. The projects involve 2 Masters students (Si, Sapaden).

Dr. Duchaine (U of Laval) and Dr. Kirychuk received NSERC Frontiers funding to investigate antibiotic genes in Canada. Dr. Kirychuk's role focuses on the contribution from bioaerosols in agricultural production. Sample collection from swine and poultry

confinement facilities will begin in Winter 2021 in Saskatchewan. This work involves a Project Manager (N. Turgeon, U of Laval); Technicians (V. Letourneau, U of Laval; B. Thompson, U of S; D. Larios, IRDA) and undergraduate and graduate students (TBD). This work will also overlap with the work being done by Drs. Kirychuk and Godbout (IRDA, Quebec) who are studying air samples collected from different housing systems for swine and poultry production facilities.

Dr. Kirychuk's lab continues to work with Saskatchewan First Nations communities in housing and health. This work includes Drs. Dosman, Pahwa, Karunanayake, Abonyi, and Ramsden. Work focuses on housing as an important social determinant of health. The analysis on the associations between the house and health outcomes involves community members, a biostatistician (Karunanayake), a PhD student (Okpalauwaekwe), a Masters student (Hyslop) and Laboratory Manager (Thompson).



#### MASS SPECTROMETRY (MS) LABORATORY

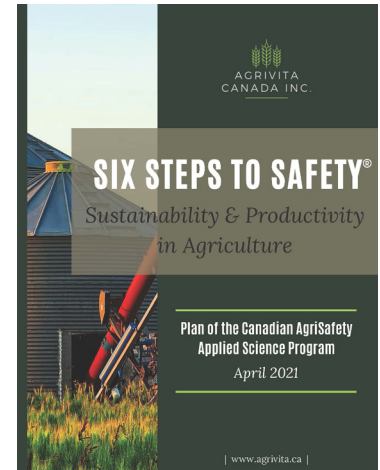
The Mass Spectrometry (MS) Laboratory of the Canadian Centre for Health and Safety in Agriculture (CCHSA) Division in the Department of Medicine is part of the National Agricultural-Industrial Hygiene Laboratory and is housed in the Health Sciences Building, College of Medicine at the University of Saskatchewan. The MS lab is equipped with state of the art instrumentation capable of environmental (e.g. air particulates, dust) and agricultural samples analyses, pesticide analysis, global proteomics (e.g. identification of proteins, analysis of protein modification, characterization of protein-protein interaction), quantitative proteomics for discovery and validation of biomarkers, small molecule (drugs) analysis, metabolomics and clinical proteomics. Dr. George Katselis is a faculty member in Clinical Proteomics and Metabolomics in the Department of Medicine, Division of the Canadian Centre for Health and Safety in Agriculture, College of Medicine and the lead CCHSA faculty in research programs focused on MS-based technologies. Under Dr. Katselis' leadership the CCHSA MS laboratory continues to run at high capacity for CCHSA and collaborating researchers. Dr. Katselis' primary focus is on urinary mass spectrometry-based proteomics for monitoring children's health. In addition, another focus of Dr. Katselis' research is on discovery, identification, characterization and validation of biomarkers which will assist towards discovery of treatment tools in the areas of diabetes, kidney, asthma, arthritis, cystic fibrosis, Parkinson's, cardiovascular, prostate cancer and musculoskeletal disorders. In addition, during the COVID-19 pandemic, Dr. Katselis' lab has been involved in research towards development of a COVID-19 diagnostic test based on saliva proteins and towards the characterization of antigens which will be used in vaccine formulations to combat COVID-19. Members of Dr. Katselis' research team include: Dr. Paulos Chumala (MS research technician), Imran Zaib (PhD student), Dr. Roman Koziy (PhD student), James Matheson (MSc student), Megan Tomilin (MSc student), Iris Geldenhuys (NSERC USRA and Honours student), Tara Giroux (Saskatchewan Polytechnic student intern) and Brooke Thompson (research technician).



## AGRIVITA CANADA INC.

Agrivita is a national incorporated not-for-profit company that stimulates and supports applied health and safety research and development aimed at sustainability and productivity in Canadian agriculture. Agrivita is committed to ensuring that farmers and agricultural workers have a standard of work conditions and safety equivalent to other major industries in Canada. Agrivita's goals are to:

- **Promote** Six Steps to Safety as a framework for research and education designed to improve safety and productivity of agriculture in Canada
- **Lead** development of priorities for cutting-edge applied research in agricultural health and safety in Canada
- **Contribute** to effective translation of knowledge and technology in health and safety for the agricultural sector
- **Connect** the agricultural health and safety research community with the end users through collaboration with stakeholders
- **Coordinate** and manage the Canadian AgriSafety Applied Science Program
- **Seek** opportunities to promote and facilitate increased investment in strategic research for agricultural health and safety



Led by CEO and Scientific Director Dr. James Dosman, Agrivita Canada successfully completed the 2014-2018 Canadian AgriSafety Applied Research Program. Building on the applied research of this first program Agrivita Canada successfully secured funding for the 2019-2024 Canadian AgriSafety Applied Science Program through Agriculture and AgriFood Canada's (AAFC) Canadian Agricultural Strategic Priorities Program (CASPP). Unified by a comprehensive planned approach, this suite of projects were designed to respond to sector need and seize current opportunities to mitigate agricultural illness, injury, and death.

Agrivita continues its work in promoting, coordinating, and contributing applied science in Canadian agricultural health and safety through the ongoing management of the AgriSafety Program. Year 2 or 5 of the Canadian AgriSafety Applied Science Program was completed in March 2021. The Canadian AgriSafety Applied Science Program, supported by Agriculture and Agri-Food Canada, consists of six unique projects and knowledge transfer activities: 1) **Improving**

**Biosecurity & Welfare of Animals During Transportation led by Dr. Predicala and Dr. Shelley Kirychuk (U of S), Prairie Swine Centre Inc;** 2) **Development and Assessment of Emerging Green Technologies to Reduce Aerosol Risks and Hazards in Farms, led by Dr. Zhang, U of S College of Engineering;** 3) **Fugitive Emissions Following Manure Spreading – Risk Assessment and Engineering Controls, led by Dr. Stephane Godbout, Institut de recherche et de développement en agroenvironnement (IRDA);** 4) **Developing Strategies to Minimize Health Risks in Next Generation Livestock Buildings Integrating Modern Animal Welfare Considerations, led by Dr. Stephane Godbout, Institut de recherche et de développement en agroenvironnement (IRDA);** 5) **Take a Break from the Shake: Farm Machinery Operator Interventions, led by Dr. Milosavljevic, U of S;** 6) **Roll Out of Low Cost Farmer-Built ROPS into a National ROPS Program, led by J. Wassermann, P. Eng., and Dr. Koehncke, CCHSA;** and 7) **Program-Wide Knowledge Transfer, led by Dr. Koehncke, CCHSA.**

Short videos have been developed by the Knowledge Transfer Team introducing each project in the AgriSafety Program. These videos can be viewed at [agrivita.ca](http://agrivita.ca).

Agrivita continues its work to promote, lead, and seek opportunities to develop agricultural health and safety research through the ongoing development of a national collaborative network and continued stakeholder consultation. Over the 2020-21 winter months Agrivita undertook a virtual Summit. This Summit served to refine the applied science framework the Six Steps to Safety report. This report will be essential in preparation for building a new round of applied science projects through collaboration with researchers across the country.



*Mission Statement:*

*To improve health and safety on the farm through education, service and evaluation research.  
The ultimate goal is to reduce injury and illness related to the farm environment  
through co-operative efforts with our partners.*

# SERVICES ●●●

## THE AGRICULTURAL HEALTH AND SAFETY NETWORK

The Canadian Centre for Health and Safety in Agriculture (CCHSA) partnered with the Saskatchewan Association of Rural Municipalities (SARM) and five Rural Municipalities in 1988 and founded the Agricultural Health and Safety Network with the mission to improve the health and safety on the farm through education, service, and evaluation research. This organization is now in its 32nd successful year in providing occupational health and safety services to 206 RMs that are current members of the Network, with a mailing list of approximately 27,000 farm families. The Network represents an agricultural health and safety program that is unique to Saskatchewan and Canada.

### MEMBERSHIP, PARTNERSHIP & RECRUITMENT

The current membership of the Agricultural Health and Safety Network is 206 Rural Municipalities (RMs). Each of these RMs pay an annual base membership fee of \$400 plus \$4.60 per active farm family to benefit from the Network resources and services. The partnership that member RMs provide is truly the foundation of the Network and helps to attract additional resources to better serve Saskatchewan farmers, their families and their workers.

In effort to increase Network RM membership an annual recruitment package is mailed to non-member RMs. Visits are made, by request, to RM council meetings to encourage and promote Network membership. Recruitment efforts have also been successful at the Saskatchewan Association of Rural Municipalities (SARM) yearly mid-term and annual conventions.



1988: 5 RMs

The Network is funded through RM fees, the Saskatchewan Ministry of Agriculture, The Canadian Centre for Health and Safety in Agriculture and other grants for specific projects. This support helps us to continue a unique program that can benefit collectively all farm families and agricultural workers in Saskatchewan.

### STEERING COMMITTEE

The Steering Committee is an advisory group comprised of 6 RM councilors and a Saskatchewan Ministry of Agriculture representative. These committee members represent the voices of Saskatchewan farmers, their families and their workers and the Ministry of Agriculture to provide direction/feedback on programs delivered by the Network. Their support and input are invaluable to the Network.

Division #1:	TBA
Division #2:	Sacha Martens, Reeve, RM of Lake Johnson No. 102
Division #3:	Mark Hughes, Reeve, RM of Miry Creek No. 229
Division #4:	Brenda Zemluck, Councillor, RM of Elfros No. 307
Division #5:	Darin Pedersen, Reeve, RM of Prairie Rose No. 309
Division #6:	Dan Hritzuk, Councillor, RM of Frenchman Butte 501
Ministry of Agriculture	Angela Hall

# COVID-19 Resources

The COVID-19 pandemic continues to change the way we operate in all areas of our lives and the agricultural sector is no exception. As an agricultural province Saskatchewan has much to offer during the pandemic and the Agricultural Health and Safety Network recognizes the need to bring together credible resources for Saskatchewan farm families and agricultural workers to stay safe and healthy during these uncertain times and beyond.

This resource page has been created with credible information to help you navigate the impacts the COVID-19 pandemic is having on you, your farm, and your community. As the COVID-19 pandemic continues to develop we will work to maintain up to date resource links and information that is most important to you and your family.

Agriculture

For Kids

General Links

Mental Health

PPE

Vaccinations

Well-Being

Printable Forms & Posters

Webinar

*Dr. Suneil Bapat, as a Senior Public Health and Preventative Medicine Resident, under the supervision of Dr. Niels Koehncke prepared a COVID-19 educational webinar for Network website to help answer some questions about COVID-19 early in 2020!*

This resource page has been created on the Network website with credible information to help you navigate the impacts that COVID-19 pandemic is having on you, your farm, and your community. As the COVID-19 pandemic continues to develop we have worked to maintain up to date resource links and information that is most important to you and your family.

The Network has teamed up with the Canadian Agricultural Safety Association and provincial partners from across Canada to share, communicate and create COVID-19 resources to keep farms healthy and safe.

## GEARING UP FOR AGRICULTURAL HEALTH AND SAFETY PROGRAM

Ag Health and Safety Alliance™ offers a Flexible Gear Up for Ag Health and Safety™ program for 2020 and 2021. This flexible program is in response to COVID 19 and the need to offer program options when traditional educational programs are not possible. The Network will continue to work to secure funding and new partnerships to allow delivery of this dynamic program to the next generation of Agriculture producers in Saskatchewan. The Network plans to partner with the Ag Health and Safety Alliance to bring program options to the University of Saskatchewan in the fall of 2021.

In 2020-2021, the Network has partnered with the Ag Health and Safety Alliance to modify the Network's respiratory resource, adding new content and a respirator selection guide to best meet the current needs of Agricultural Producers in Canada.

This resource will be delivered to the Network's Saskatchewan membership and The Ag Health and Safety Alliance plans to utilize and promote this new resource in their national program delivery in 2021.





*"Resiliency is the end competency that is built after improving mental health literacy, support skills, boundaries and self-care. It is a buildable skill that is achieved over time based on bite-size pieces of education that amalgamated creates increased abilities to better withstand pressure through the use of healthy coping strategies."*  
 Adelle Stewart, Executive Director of Do More Ag.

# WALKING THE TALK - MENTAL HEALTH IN AGRICULTURE

*Fostering Mental Health Resiliency for Farmers*

## MENTAL HEALTH AND RESILIENCY IN THE AGRICULTURE INDUSTRY WEBINARS

Funded and facilitated by: Ministry of Agriculture Farm Safety Program  
 In collaboration with: the Agricultural Health and Safety Network, Bridges Health and, Do More Ag.

Fostering mental health resiliency in agriculture is crucial, and we hope that this event will help farmers cultivate their resiliency by providing information and tools for their own mental health support and well-being. The Network understands that farmers are facing tremendous pressures in 2021 and it is essential to deliver resources especially around mental health awareness and support. It is more important than ever to have appropriate tools and supports available to producers as we continue to increase knowledge and awareness about mental health.

The “Walking The Talk- Mental Health in Agriculture” webinars are being presented by the Do More Ag Foundation with the following objectives:

- Review of mental health in Agriculture
- How to notice signs and symptoms in yourself and others
- Strategies and resources to support positive change in yourself and others
- What to do if you or someone you know needs help

*Thank you Ministry of Agriculture Regional Offices for your help in promoting and facilitating the webinars!*  
*Thank you Bridges Health for your project contributions!*



UNIVERSITY OF SASKATCHEWAN  
 Canadian Centre for Health and Safety in Agriculture  
 CCHSA-CCSSMA.USASK.CA



## HEALTH & SAFETY CLINICS: EMPOWERING FARMERS TO ENHANCE THEIR HEALTH AND SAFETY

The **ONE<sup>2</sup>ONE** Health and Safety Clinics for farmers offer the unique opportunity for farm families and farm workers to meet with a trained agricultural health and safety registered nurse in a confidential environment for health and safety checks tailored specifically to their agricultural exposures and risks. Participants receive current health and safety information and education specific to reducing agriculture workplace hazards and improving personal health. Examples of common concerns addressed include: grain safety, animal safety, farm safety audits, children safety on the farm, blood pressure, diet, exercise, farm stress, sleep, and personal protection equipment selection. Health and safety resources and suggested referrals are offered to optimize personal health and safety of the participant.

The Network has also offered clinic learning experiences for medical and nursing students at the ONE2ONE Health & Safety Clinic for Farmers.



*Respiratory test*

*On Hold! April 2020-April 2021*

*No clinics were held due to the COVID-19 Pandemic restrictions. The Network is looking forward to ONE2ONE clinics in rural communities when safe to resume!*



*Hearing test*

## DISCOVERY DAYS PROGRAM



The Agricultural Health and Safety Network offered Virtual Discovery Days during the 2021 school year. The Pandemic has changed how we are able to deliver the Discovery Days presentations, instead of having a presenter travel to the classroom, the classroom comes to us via Webex, Microsoft Teams or Zoom. Discovery Days is a farm safety presentation which is tailored for children in grades 4-6 who are immersed in agriculture at home or in their community. These presentations may include hazard identification, grain safety, avoiding chemical exposure, safety around machinery, helmet safety and animal safety. Upon completion of each event, students received an activity booklet and farm safety package to take home.

The students were asked to fill out a questionnaire before the presentation, right after the presentation and about 2 weeks after the presentations. These questionnaires serve as a tool to evaluate the effectiveness of the Discovery Days program and help guide future program development.

In March of 2020 we had to cancel 12 Discovery Days presentation due to COVID 19. We have been able to re-book most of them and do the presentations virtually. Since January of 2021 we have been able to reach 355 students in 13 schools.

We look forward to being able to take our new presentations on Mental Health, ATV Safety and the Chemical “Look a-like” display into the schools in the upcoming year.

Thank you to the **Saskatchewan Wheat Development Commission** and **Saskatchewan Canola Development Commission** for the sponsorship of the Agricultural Safety Discovery Days.



## SARM SCHOLARSHIP

In 1995, the Saskatchewan Association of Rural Municipalities (SARM) auctioned off the first copy of its history book “The Building of a Province: Commemorating the 90th Anniversary of the Saskatchewan Association of Rural Municipalities.” This auction netted the sum of \$2,600 which the SARM Board of Directors contributed to the Canadian Centre for Health and Safety in Agriculture (CCHSA). These funds initiated the SARM 90th Anniversary \$1,000 Student Scholarship in Agricultural Safety and Rural Health. The Founding Chairs Program at CCHSA now maintains the scholarship.

This year two scholarships of \$1,500 each were awarded to grade 12 students, **Rochelle Wright from RM # 345, Vanscoy** and **Tyler Moore RM # 287, St. Andrews**. Students were asked to submit essays about (a) *The importance of safety and health on our farm* or (b) *Safety and health hazards on our farm*.



Rochelle Wright  
RM # 345, Vanscoy

*“Being safe on the farm has been an important value to my family and by working together, using effective communication, and limiting health hazards we have been able to maintain our overall health and wellbeing. Our family has continually worked towards creating a safer living and work area by teaching safety precautions and identifying risks that can be avoided or removed. By recognizing possible hazards on our farm and understanding the importance of safety, my family has developed skills and techniques that preserve our health.”*



Tyler Moore  
RM # 287, St. Andrews

*“When we hear about health and safety on the farm, people usually think about physical risks such as electrocution, entanglement, suffocation, fire, falls and roll overs. Or about the safety equipment that they can see farmers wear like dust masks, gloves, safety goggles and work boots. As I have become more involved in our farming operations, the more I am realizing that the biggest risk to health and safety on the modern farm is something no one ever talks about- stress! Finances, volatile markets, weather, uncertain crop yield, equipment breakdowns, workload, long hours, lack of sleep and isolation all contributing to high levels of stress and poorer mental health in farm families.”*



INVITED PRESENTATIONS	KNOWLEDGE TRANSFER	TECHNICAL REPORTS
5	15	2

## INVITED PRESENTATIONS

**Bath B.** Comblen les lacunes en matière d'accès aux soins dans les communautés rurales et isolées grâce aux équipes et à la technologie / Bridging access to care gaps in rural and remote communities through teams and technology (Presentation in English with French sub-titles). Journée de mobilisation des connaissances sur l'accès aux services de readaptation. Knowledge mobilization day on access to rehabilitation services. Virtual online conference (Université de Laval, Québec, QC); December 2020

**Bath B.** Addressing access inequities for back pain care, Canadian Bone and Joint Conference. Virtual online conference. Invited plenary presentation; June 2020

**Katselis GS.** Predicting Childhood Asthma using Urine Proteomics. Presented: Respiratory Research Centre Seminar Series; March 23, 2021

**Kirychuk S, Schneberger D, Simonson C, Soltan J, Ianowski J, Tam J.** CO2 and ventilation in Airborne Virus Pathogenesis and Control. Presented: Respiratory Research Centre COVID-19 Discussion Forum, Saskatoon, SK, 2020 May 19

**Koziy RV.** Diagnostic Markers for Detection of Eradication of Joint Infection in Horses. Presented: CCHSA Seminar Series; January 19, 2021.



PUBLISHED  
PAPERS

33

CONFERENCES &  
ABSTRACTS

32

TOTAL

82

## KNOWLEDGE TRANSFER

**Musculoskeletal Health and Access to Care (MHAC) research team website.** The MHAC research group, led by Drs. Brenna Bath and Stacey Lovo, developed a research team website as a landing page for all MHAC research projects, personnel bios and team-related news.

**Bath B, Lovo S, Irvine A, Proctor P, Rossler K, Weimer M, Pachal B.** Re-Imagining Rural and Remote Physiotherapy Report. (2021). A full summary report and 2-page brief describing the event and recommendations can be found on our MHAC website.

**CANFARMSAFE.** February 2021. Creature Comforts: What features of livestock transport trailers enhance animal welfare & biosecurity? [Bulletin CFS002-1]. Retrieved from <https://www.agrivita.ca/2019-2024-canadian-agrisafety-program/activity-1.php#Outputs>

**CANFARMSAFE.** March 2021. Testing the Biosecurity of a Prototype Swine Transport Trailer [Bulletin CFS002-1-2]. Retrieved from <https://www.agrivita.ca/2019-2024-canadian-agrisafety-program/activity-1.php#Outputs>

**CANFARMSAFE.** February 2021. How Can Electrostatic Particles Reduce Dust in Livestock Production? [Bulletin CFS002-2]. Retrieved from <https://www.agrivita.ca/2019-2024-canadian-agrisafety-program/activity-2.php#Outputs>

**CANFARMSAFE.** March 2020. Improving Air Quality in Broiler Houses Using an Electrostatic Precipitator [Bulletin CFS002-2-2]. Retrieved from <https://www.agrivita.ca/2019-2024-canadian-agrisafety-program/activity-2.php#Outputs>

**CANFARMSAFE.** February 2021. Bioaerosols, Gases, and Odours – Oh My! [Bulletin CFS002-3]. Retrieved from <https://www.agrivita.ca/2019-2024-canadian-agrisafety-program/activity-3.php#Outputs>

**CANFARMSAFE.** March 2021. Measuring the Airborne Effects of Manure Spreading [Bulletin CFS002-2-3-2]. Retrieved from <https://www.agrivita.ca/2019-2024-canadian-agrisafety-program/activity-3.php#Outputs>

**CANFARMSAFE.** February 2021. How Does Improved Animal Welfare in Barns Impact Health & Safety? [Bulletin CFS002-4]. Retrieved from <https://www.agrivita.ca/2019-2024-canadian-agrisafety-program/activity-4.php#Outputs>

**CANFARMSAFE.** March 2021. Measuring Air Quality in Cage-Free Poultry [Bulletin CFS002-2-4-2]. Retrieved from <https://www.agrivita.ca/2019-2024-canadian-agrisafety-program/activity-4.php#Outputs>

**CANFARMSAFE.** February 2021. Shaken Not Stirred: Farming, Whole-Body Vibration, and Your Back [Bulletin CFS002-5]. Retrieved from <https://www.agrivita.ca/2019-2024-canadian-agrisafety-program/activity-5.php#Outputs>

**CANFARMSAFE.** March 2021. Whole Body Vibration in Agriculture: Measuring the Effects [Bulletin CFS002-2-5-2]. Retrieved from <https://www.agrivita.ca/2019-2024-canadian-agrisafety-program/activity-5.php#Outputs>

**CANFARMSAFE.** February 2021. Physics of a Tractor Rollover: How ROPS Can Keep You Safe! [Bulletin CFS002-6]. Retrieved from <https://www.agrivita.ca/2019-2024-canadian-agrisafety-program/activity-6.php#Outputs>

**CANFARMSAFE.** March 2021. Designing Rollover Protective Structures (ROPS) [Bulletin CFS002-6-2]. Retrieved from <https://www.agrivita.ca/2019-2024-canadian-agrisafety-program/activity-6.php#Outputs>  
Canadian AgriSafety Applied Science Program. 2019 – 2024. Agricultural Health and Safety Network Newsletter, Fall 2020 (ed. #48, p.11). Print and, also available online at: [aghealth.usask.ca](http://aghealth.usask.ca). Retrieved from [https://cchsa-ccssma.usask.ca/aghealth/documents/network-news/edition-48-nn\\_fall2020\\_web-version.pdf](https://cchsa-ccssma.usask.ca/aghealth/documents/network-news/edition-48-nn_fall2020_web-version.pdf)

**Canadian AgriSafety Applied Science Program Annual Report:** Year 1: 2019 – 2020. Available in print and retrieved from <https://www.agrivita.ca/documents/2019-2024-bulletins/year-1-apr.pdf>. Program Brochure:

## TECHNICAL REPORTS

*Elliot V, Morgan D, Kosteniuk J, Seitz D, Cameron C, Minish D. & Rural PHC Memory Clinic Team Members.* (2021). RaDAR Rural Primary Health Care Memory Clinic Handbook. Version: Spring 2021. Saskatoon, Saskatchewan: University of Saskatchewan. (257 pages, distributed as print and electronic versions).

*Kosteniuk J, Morgan D, Froehlich Chow A, Bayly M.* Rural PHC Memory Clinics. (2020). [report]. Printed at the University of Saskatchewan, Saskatoon, SK, Canada. (6 pages) [https://cchsa-ccssma.usask.ca/ruraldementiacare/PHC\\_Clinics.php#Background](https://cchsa-ccssma.usask.ca/ruraldementiacare/PHC_Clinics.php#Background)

## PUBLISHED PAPERS: E-PUB & REFEREED JOURNALS

*Abubakari IW, Ahmed S, Khan S, Karunanayake C, Dosman J, Pahwa P.* Longitudinal Changes in Prevalence of Colorectal Cancer in Farm and Non-farm Residents of Saskatchewan. *J Occup Environ Med.* 2020; 62(9): e485-e497. doi: 10.1097/JOM.0000000000001945.

*Anwar N, Kirychuk S, Karunanayake CP, Ramsden V, Thompson B, Russell E, McMullin K, Rennie D, Seesequasis J, Fenton M, Abonyi S, Pahwa P, Dosman J.* Associations between housing factors and respiratory symptoms in two Saskatchewan First Nations communities. *Inter J Environmental Research Public Health* 2021; 18:3744. <https://doi.org/10.3390/ijerph18073744>

*Anwar N, Kirychuk S, Karunanayake CP, Ramsden VR, Thompson B, Russell E, McMullin K, Rennie DC, Seesequasis J, Janzen B, Fenton M, Abonyi S, Pahwa P, Dosman JA.* (2021). The effects of housing and individual factors on respiratory symptoms in two Saskatchewan First Nations. *The International Journal of Environmental Research and Public Health.* 2021 Apr 3; 18(7): 3477

*Boden C, Edmonds AM, Porter T, Bath B, Dunn K, Gerrard A, Goodridge D, Stobart C.* (2021) Patient partners' perspectives of meaningful engagement in synthesis reviews: A patient-oriented rapid review. *Health Expectations.* epub: <https://onlinelibrary.wiley.com/doi/10.1111/hex.13279>

*Chu LM, Rennie DC, Kirychuk S, Cockcroft D, Gordon JR, Lawson JA.* (2021). Atopy Risk among School-aged Children in Relation to Early Exposures to a Farm Environment: A Systematic Review. *Respiratory Medicine.* Apr 2

*Dankwah E, Zeng W, Feng C, Kirychuk S, Lepnrum R, Farag M.* (2021). Assessing the contextual effect of community in the utilization of postnatal care services in Ghana. *BMC Health Services Research.* 2021 Jan 7; 21(1):40. DOI: 10.1186/s12913-020-06028-1

*Dosman JA, Karunanayake CP, Fenton M, Ramsden VR, Skomcro R, Kirychuk S, Rennie DC, Seesequasis J, Bird C, McMullin K, Russell BP, Koehncke N, Smith-Windsor T, King M, Abonyi S, Pahwa P.* (2021). Prevalence of Insomnia in Two Saskatchewan First Nations Communities. *Clocks & Sleep.* 2021 Jan 28; 3(1): 98-114

*Dosman JA, Karunanayake CP, Fenton M, Ramsden VR, Skomro R, Kirychuk S, Rennie DC, Seesequasis J, Bird C, McMullin K, Russell BP, Koehncke N, Smith-Windsor T, King M, Abonyi S, Pahwa P.* Prevalence of Insomnia in Two Saskatchewan First Nation Communities. *Clocks & Sleep.* 2021; 3(1):98-114. <https://doi.org/10.3390/clockssleep3010007>

*Dyck RF, Karunanayake C, Pahwa P, Stan MR, Erickson RL, Osgood ND.* Congenital Anomalies of the Kidney and Urinary Tract (CAKUT): An Emerging Complication of Pre-Gestational Diabetes Mellitus Among First Nations and Non-First Nations People in Saskatchewan- Results from the DIP: ORRIIGENSS Project. *Canadian J Diab* 2020 Oct 14;S1499-2671(20)30402-0. doi: 10.1016/j.cjcd.2020.10.004

*Elliot V, Morgan D, Kosteniuk J, Bayly M, Froehlich Chow A, Cammer A, O'Connell ME.* (2021). Palliative and end-of-life care for people living with dementia in rural areas: A scoping review. PLOS ONE, 16(1): e0244976. <https://doi.org/10.1371/journal.pone.0244976>

*Gao Z, Dosman JA, Rennie DC, Schwartz DA, Yang IV, Beach J, Senthilselvan A.* Effects of Tumor Necrosis Factor (TNF) gene polymorphisms on the association between smoking on lung function among workers in swine operations. Journal of Toxicology and Environmental Health 2021; 84(13): 536-552.

*Hoover J, Yarie K, Hooper K, Halstead A, Karunanayake.* Efficacy of a rinse containing tetrapotassium pyrophosphate and sodium tripolyphosphate on calculus formation in a group of adults. Dental Oral Biology Craniofacial Research 2020; 3(6): 1-5. doi:10.31487/j.DOBCR.2020.06.01

*Kachuri L, Beane Freeman LE, Spinelli JJ, Blair A, Pahwa M, Koutros S, Hoar Zahm S, Cantor KP, Weisenburger DD, Pahwa P, Dosman JA, McLaughlin JR, Demers PA, Harris SA.* Insecticide use and risk of non-Hodgkin lymphoma subtypes: A subset meta-analysis of the North American Pooled Project. Int J Cancer. 2020; 147(12): 3370-3383. doi: 10.1002/ijc.33164. Epub ahead of print. PMID: 32574374.

*Khan A, Ahmed S, Zaidi A, Karunanayake, Dosman JA, Pahwa P.* Prevalence of Hormone-Related Cancers (HRCs) at two-time points in Rural Saskatchewan: The Saskatchewan Rural Health Study. JOEM 2021; 63(4):e203-e214.

*Lang A, Hendrick P, Clay L, Mondal P, Trask C, Bath B, Penz E, Stewart S, Baxter GD, Hurley D, McDonough S, Milosavljevic S.* (2021) A randomized controlled trial investigating effects of an individualized pedometer driven walking program on chronic low back pain. BMC Musculoskeletal Disorders. 22 (1) :206. <https://bmcmusculoskeletdisord.biomedcentral.com/articles/10.1186/s12891-021-04060-8>

*Lindenbach J, Larocque S, Morgan DG, Jacklin K.* (2020). Practitioner empowerment, older adult mistreatment, and dementia. Canadian Journal on Aging/La revue Canadienne du vieillissement, 1-15. <https://doi.org/10.1017/S0714980820000136>

*Lindenbach J, Larocque S, Morgan DG, Jacklin K.* (2020). Practitioner experience with mistreated older adults who have dementia: Understanding contextual influences and consequences. Journal of Interpersonal Violence. <https://doi.org/10.1177/0886260520943717>

*Md. Saiful Alam, Dyck R, Janzen B, Karunanayake C, Dosman J, Pahwa P.* Risk factors, Incidence and Prevalence of Diabetes among Rural Farm and Non-farm Residents of Saskatchewan, Canada; a population based longitudinal cohort study. Journal of Diabetes & Metabolic Disorders. J Diabetes Metab Disord 2020; 19:1563-1582. <https://doi.org/10.1007/s40200-020-00693-z>

*Md. Saiful Alam, Roland Dyck, Bonnie Janzen, Chandima Karunanayake, James Dosman, Punam Pahwa.* Risk factors, Incidence and Prevalence of Diabetes among Rural Farm and Non-farm Residents of Saskatchewan, Canada; a population based longitudinal cohort study. Journal of Diabetes & Metabolic Disorders. J Diabetes Metab Disord 2020; 19:1563-1582. <https://doi.org/10.1007/s40200-020-00693-z>

*Nair M, Jagadeeshan S, Katselis GS, Luan X, Momeni Z, Henao-Romero N, Chumala P, Tam JS, Yamamoto Y, Ianowski JP, Campanucci VA.* (2021). Lipopolysaccharides Induce a RAGE-mediated Sensitization of Sensory Neurons and Fluid Hypersecretion in the Upper Airways. *Sci Rep.*, Apr 16; 11(1):8336. doi: 10.1038/s41598-021-86069-6.

*O'Leary T, Merkowsky K, Trask C, Bennett W, Kirychuk S.* (2020). Operator and potential exposure to hydrogen sulfide: a study of the British Columbia dairy industry. *Journal of Agromedicine.* 2020 Aug 1:1-8

*Pandher US, Kirychuk S, Schneberger D, Thompson B, Aulakh GK, Sethi RS, Singh B.* (2021). Pulmonary Inflammatory Response from Co-exposure to LPS and Glyphosate. *Environmental Toxicology and Pharmacology.* 2021 Mar 31

*Reist R, Bath B, Jelinski M, Clark C, Eriskson N, Trask C.* (2020). Risk factors associated with work-preventing upper extremity symptoms in bovine veterinarians, *Journal of the American Veterinary Medical Association* 257 (4): 410-6.

*Reist R, Bath B, Jelinski M, Clark C, Eriskson N, Trask C.* (2021). Ergonomic Assessment of Veterinarians Conducting Bovine Reproductive Examinations. *Journal of the American Veterinary Medical Association.* 258 (11): 1243-1253

*Schneberger D, Pandher U, Thompson B, Kirychuk S.* (2021). Effects of Elevated Indoor CO2 Levels on Lung Response to Organic Dust and Lipopolysaccharide. *Respiratory Research.* 2021 Apr 9; 22(1):104

*Shah T, Milosavljevic S, Bath B.* (2020) Geographic availability to optometry services across Canada: mapping distribution, need and self-reported use, *BMC Health Services Research*, 20 (639) . <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-020-05499-6>

*Si Y, Yang Y, Martel M, Zhang L, Kirychuk S, Predicala B, Guo H.* (2021). Characterization of electrical current and liquid droplets deposition area in a capillary electrospray. *Results in Engineering.* 2021 Jan 28; 9(1)

*Stewart J, MacLeod MLP, Kosteniuk JG, Olynick J, Penz KL, Karunanayake CP, Kulig JC, Labrecque M, Morgan DG.* The importance of organizational commitment in rural nurses' intent to leave. *Journal of Advanced Nursing (JAN)* 2020; 76(12): 3398-3417. DOI: 10.1111/jan.14536

*Stewart N, MacLeod MLP, Kosteniuk JG, Olynick J, Penz KL, Karunanayake CP, Kulig JC, Labrecque ME, Morgan DG.* (2020). The importance of organizational commitment in rural nurses' intent to leave. *Journal of Advanced Nursing.* 76(12), 3398-3417. <https://doi.org/10.1111/jan.14536>

*Ursenbach J, O'Connell ME, Kirk A, Morgan D.* (2020). Evidence for measurement bias of the Short Form Health Survey based on sex and metropolitan influence zone in a secondary care population. *Health and Quality of Life Outcomes*, 18, 1-10. <https://doi.org/10.1186/s12955-020-01318-y>

*Vader K, Ashcroft R, Bath B, Décary S, Deslauriers, S, Desmeules, F, Donnelly C, Perrault K, Richardson J, Wojkowski S, Miller J.* (2021) Physiotherapy Practice in Primary Health Care: A Survey of Physiotherapists within Team-Based Primary Care Organizations Ontario. *Physiotherapy Canada.* <https://doi.org/10.3138/ptc-2020-0060>

Zahan R, Khan S, Rennie DC, Karunanayake CP, Fenton M, Seesequasis J, Arnault D, Gardipy J, Dosman JA, Pahwa P. Lung function reference equations and lower limit of normal for Cree First Nations Children and adolescents living in rural Saskatchewan, Canada. *Model Assisted Statistics and Applications* 2020 May; 15(2):153-165. DOI: 10.3233/MAS-200485.

Zahan R, Khan S, Rennie DC, Karunanayake CP, Fenton M, Seesequasis J, Arnault D, Gardipy J, Dosman JA, Pahwa P. Lung function reference equations and lower limit of normal for Cree First Nations Children and adolescents living in rural Saskatchewan, Canada. *Model Assisted Statistics and Applications* 2020 May; 15(2):153-165. DOI: 10.3233/MAS-200485.

## CONFERENCES & ABSTRACTS

Arnold C, Bath B, Prosko S. Balance Flow Yoga: A Community-Based Intervention for Peri- and Post-Menopausal Women. **Presented:** Canadian Fall Prevention Virtual Conference, online November 20, 2020. Comment: 1 hour workshop

Bautista M, Chumala P, Dwivedi S, Katselis G, Krishnan A. Whole Tissue Proteomics of In Vitro and In Vivo Primed Dorsal Root Ganglia. **Presented:** SFN Global Connectome 2021 (online), January 11-13, 2021.

Bautista M, Chumala P, Katselis G and Krishnan A. Molecular Signature of Axotomized Sensory Ganglia and Contribution of Self-Renewing Macrophages. Published in: *J Peripher Nerv Syst.* 2021;1-27. **Presented:** Annual Meeting of Peripheral Nerve Society (online), June 27-30, 2020.

Bayly M, Morgan D, Elliot V, Kosteniuk J, Froehlich Chow A, O'Connell ME, Peacock S. (2020). The effectiveness of early-stage intervention on the wellbeing of caregivers to persons with mild dementia or mild cognitive impairment (MCI): A systematic review and meta-analysis. **Presented:** CCNA Annual Partners Forum and Science Day, Virtual, October 15, 2020

Bayly M, Morgan D, Kosteniuk J, O'Connell ME, Froehlich Chow A, Elliot V, Cameron C, Hill J. The role

of developmental evaluation in the implementation and continued refinement of a rural primary health care memory clinic intervention. **Presented:** Canadian Evaluation Society (CES) 2020 Conference. Ottawa, Canada. June 13-18, 2020. (poster)

Beitel J, Cammer A. (2020). Long-term care Registered Dietitians' initial response to the COVID-19 pandemic. **Presented:** Gerontological Society of America Annual Conference. Online event. November 4 – 7, 2020

Blackberry I, Wilding C, Morgan D, O'Connell ME, Bauer M, Winbolt M, Greenhill J, Perkins D, Davis H, Royals K, Rasekaba T, Gottschall K, Hamiduzzaman M, Robinson A, Farmer J, Morley C. Lessons from a pragmatic trial of virtual dementia friendly rural communities in Australia. **Presented:** Australian Dementia Forum 2020. Adelaide, Australia. May 31 to June 2, 2020 (oral)

Boden C, Edmonds AM, Porter T, Bath B, Dunn K, Gerrard A, Goodridge D, Stobart C. Patient partners' perspectives of meaningful engagement in synthesis reviews: a patient-oriented rapid review. **Presented:** 2020 Saskatchewan Health Research Showcase, online Nov 16-18, 2020

Dosman J, Fenton M, Karunanayake C, Seesequasis J, McMullin K, King M, Abonyi S, Ramsden V, Rennie

*D, Kirychuk S, Koehncke N, Skomro R, Gjevre J, Smith-Windsor T, Russell B, Pahwa P.* Evidence of Obstructive Sleep Apnea among First Nations People. **Presented:** European Respiratory Journal 2020 56(:Suppl.64):211; DOI: 10.1183/13993003.congress-2020.211

*Dupuis F, Déry J, de Oliveira F, Pecora AT, Gagnon R, Harding K, Camden C, Roy JS, Lettre J, Hudon A, Beauséjour M, Pinard AM, Bath B, Deslauriers S, Lamontagne ME, Feldman DE, Routhier F, Desmeules F, Hébert LJ, Miller J, Ruiz A, Perreault K.* Strategies to reduce waiting time for outpatient rehabilitation services for adults with physical disabilities: A systematic review. **Presented:** Canadian Physiotherapy Association Congress May 2021

*Edwards D, Kirk A, Karunanayake C, Morgan D, O'Connell M.* Correlation between depression and decline in early dementia. Accepted for presentation at Canadian Neurological Sciences Federation conference, Banff, Alberta, June 8, 2020

*Elliot V, Morgan D, Kosteniuk J, O'Connell ME, Froehlich Chow A, Bayly M, Cameron C, Seitz D.* (2020). Rural Memory Clinic Health Care Professionals' Perceptions of Targeted Dementia Care Education Sessions. **Presented:** CCNA Annual Partners Forum and Science Day, Virtual, October 15, 2020

*Fonseca AA, Trask C, Pahwa P, Fuller D, Bath B.* Longitudinal associations between physical activity and chronic back disorders in Canadian adults. **Presented:** World Physiotherapy Congress 2021 Online. April 9-11.

*Fonseca AA, Trask C, Pahwa P, Herman H, Fuller D, Bath B.* What did three Statistics Canada Surveys tell us about the relationship between physical activity and chronic back pain in adults? In: Research Poster Abstracts. Canadian Journal of Pain, 5(2): A101. DOI: 10.1080/24740527.2021.1914233

*Grewal K, O'Connell ME, Kirk A, MacDonald S, Morgan D.* (2020). Intraindividual Variability Measured with Dispersion Across Diagnostic Groups in a Memory Clinic Sample. **Presented:** CCNA Annual Partners Forum and Science Day, Virtual, October 15, 2020

*Katselis GS, Chumala P, Thompson B, Eanes S, Bocking S, Rajput A, Rajput A.* Proteomics Studies in Parkinson's Disease. **Presented:** 68th ASMS Conference on Mass Spectrometry & Allied Topics – Virtual Conference, June 1-12, 2020

*Kirk A, Edwards D, Karunanayake C, Morgan D, O'Connell M.* Do depressive symptoms at diagnosis affect the course of dementia over one year? **Presented:** Alzheimer's Association International Conference, Amsterdam, Netherlands, July 25, 2020

*Kirk A, Kushneriuk M, Karunanayake C, Morgan D.* Quality of life across dementia types in rural and remote persons with dementia. Accepted for presentation at Alzheimer's Disease International, Singapore, December 10-12, 2020

*Kirk A, Shahab I, Karunanayake C, O'Connell M, Morgan D.* Rate of cognitive decline in rural and remote persons with dementia across diagnoses. Accepted for presentation at Alzheimer's Disease International, Singapore, December 10-12, 2020

*Kosteniuk J, Morgan D, O'Connell ME, Seitz D, Cameron C, Elliot V, Bayly M, Froehlich Chow A.* (2020). Self-efficacy and service/support needs of primary care partners accompanying individuals evaluated in rural primary health care memory clinics. **Presented:** CCNA Annual Partners Forum and Science Day, Virtual, October 15, 2020

*Koziy RV, Chumala P, Simko E, Katselis GS.* Discovery Proteomics for the Detection of Diagnostic Markers in an Experimental Model of Equine Septic Arthritis using LC-MS/MS. **Presented:** 68th ASMS Conference on Mass Spectrometry & Allied Topics – Virtual Conference, June 1-12, 2020

*Merkowsky K, Pandher U, Schneberger D, Thompson B, Aulakh G, Singh B, Kirychuk S.* Characterizing Lung Inflammation in Agricultural Respiratory Exposures Between the Sexes. **Presented:** Canadian Student Health Research forum, Virtual Forum, August 2020

*Merkowsky K, Pandher U, Schneberger D, Thompson B, Aulakh G, Singh B, Kirychuk S.* Synergistic Lung

Inflammation related to Agricultural Co-exposures: LPS and glyphosate. In American Journal of Respiratory and Critical Care Medicine. **Presented:** ATS 2020, Philadelphia, United States; May 2020

*Morgan D, Kosteniuk J, O'Connell ME, Elliot V, Bayly M, Froehlich Chow A, Seitz D, Cameron C.* (2020). Strategies for scaling up rural primary health care memory clinics: Perspectives of clinic team members and researchers. **Presented:** CCNA Annual Partners Forum and Science Day, Virtual, October 15, 2020

*Muhammad I, Chumala P, Buhr MM, Katselis GS.* In-Depth Proteomics Analysis of Bovine Spermatozoa by Tandem Mass Spectrometry. **Presented:** 68th ASMS Conference on Mass Spectrometry & Allied Topics – Virtual Conference, June 1-12, 2020

*O'Connell ME, Walker J, Jacklin K, Bourassa C, Kirk A, Hogan D, Morgan D.* Classification Accuracy of the English Version of the Canadian Indigenous Cognitive Assessment (CICA) in a Majority Culture Memory Clinic Sample. **Presented:** Alzheimer's Association International Conference (AAIC) 2020. Virtual Event. July 27-31, 2020. (poster)

*Rajput A, Chumala P, Thompson B, Rajput A, Katselis A.* Mass Spectrometry-based Proteomics Brain Analysis to Distinguish between Parkinson Syndromes. Published in: Movement Disorders, 2020, 35, Suppl. S1. **Presented:** 2020 Movement Disorder Society Virtual, September 12-16, 2020

*Ramsden VR, Kirychuk S, Karunanayake C, Rabbitskin N, Bighead S, Dolovich L, Dosman JA, Fenton M, Graham H, Lamarche L, Davis B, Jacobson N, Thompson B, Turner T.* It's the House! māmawōhkamātowin (Working Together) to Enhance Wellness. **Presented:** The 48th Annual Meeting of the North American Primary Care Research Group(NAPCRG), virtual, November 20-24, 2020, Leawood, KS. (Poster). Abstract – PCR074.

*Ramsden VR, Kirychuk S, Karunanayake C, Rabbitskin N, Bighead S, Dolovich L, Dosman JA, Fenton M, Graham H, Lamarche L, Davis B, Jacobson N, Thompson B, Turner T.* It's the House! māmawōhkamātowin (Working Together) to Enhance Wellness. **Presented:** 48th Annual Meeting of the North American Primary Care Research Group (NAPCRG), Leawood, KS (virtual conference); 2020 November 20-24

*Si J, Zhang L, Predicala B, Kirychuk S.* Efficiency of engineered water nanostructures (EWNS) generated via electrospray techniques to deactivate surface microbes in livestock barns. **Presented:** 55th IEEE Industrial Applications Society Annual Meeting, Detroit, Michigan, USA; 2020 October 11-15

*Vedel I, Bronskill SE, McAiney C, Couturier Y, Godard-Sebillotte C, Sourial N, Arsenault-Lapierre G, Henein M, Seitz D, Morgan D, Wilchesky M, Sivananthan S.* Improving the care of older adults living with dementia in the community across Canada during the COVID pandemic: a mixed methods study to inform policy and practice. **Presented:** 48th Annual Meeting for the North American Primary Care Research Group (NAPCRG). Virtual poster presentation. November 20-24, 2020

*Wilding C, Blackberry I, Greenhill J, Perkins D, Morgan D, O'Connell ME, Davis H, Winbolt M, Bauer M, Morley C, Farmer J, Royals K, Rasekaba T, Gottschall K, Hamiduzzaman M, Robinson A.* Lessons from a pragmatic trial of virtual dementia friendly rural communities in Australia. **Presented:** 34th International Conference of Alzheimer's Disease International (ADI).(Virtual). December 10-12, 2020 (oral)



## RESEARCH GRANTS

*Duchaine C, McGeer A, Kirychuk S (Co-investigator), Coleman B, Topp E, Corbeil J; Gaucher M-L, Bergeron M, McEwen S, Badard T, Goodbout S. Collaborators: Delort A-M, Yao M, Boissinot M, O'Shaughnessy P, Amato P, Reid-Smith R.* Antimicrobial resistance genes in bioaerosols in Canadian arctic, rural, and urban environments: sources, profiles, transport and fate. Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Frontiers. Total : \$3,997,700 for 2020-05 to 2024-04

*Katselis G (Principal Investigator), Siqueira W, Sanche S, Skomro R, Penz E, Kinloch M.* Detection of Salivary Biomarkers of 2019 Novel Coronavirus using Mass Spectrometry-based Proteomics, 2020 Rapid Response COVID-19, College of Medicine. Total: \$10,000.00 for 2020-07 to 2022-03

*Katselis G (Principal Investigator), Siqueira W, Sanche S, Skomro R, Penz E.* An Innovative and Highly Specific Approach for Detection of Salivary Biomarkers of 2019 Novel Coronavirus, Department of Medicine. Total: \$20,000.00 for 2020-06 to 2022-05

*Katselis G (Principal Investigator), Trask C, Milosavljevic S, Taghibiglou C.* Get your Head Straight: A Pilot Study of Vibration-related Micro-Concussions, Department of Medicine. Total: \$20,000.00 for 2020-03 to 2022-03.

*Kirychuk S (Principal Investigator).* Research Cluster Funding, University of Saskatchewan OVD. Total: \$20,000.00 for 2021-04 to 2022-03

*Kirychuk S (Principal Applicant), Simonson C, Duchaine C, Soltan J, Scheneberger D (Co-investigator).* Recovery of viruses during Common Ventilation Practices. College of Medicine Research Funding (CoMRAD), University of Saskatchewan. Total: \$29,811.41 for 2021-01 to 2022-03

*Kirychuk, S (Principal Applicant), Duchaine C, Simonson C, Soltan J, Scheneberger D (Co-investigator), Ianowski J, Tam J, Annadurai G.* Optimizing Ventilation Parameters in Order to Test Ventilation as a Population-Level Protection Measure in Controlling Airborne Viruses. OVD RRC COVID-19, University of Saskatchewan. Total: \$10,000 for 2020-07 to 2021-04

*Lovo S (Principal Investigator), Bath B (Co-Principle Investigator), Butcher B (Co-Principle Investigator), Swidrovich J (Co-Principle Investigator), McKinney V (Co-investigator) Mendez, I (Co-investigator), Johnson R (Co-investigator), Yelland R (Co-investigator), Custer M (Co-investigator), Larson D (Co-investigator).* Empowering northern Indigenous communities to ensure equitable, appropriate and community-based access to musculoskeletal care using virtual technology. SHRF Solutions-Impact Grant. Total \$149,987.00 for 2021-03 to 2023-02.

*Rosenberg A, Katselis G (Co-Investigator) et al.* High Mobility Box 1 Protein In Pediatric Coronavirus Disease, 2020 Rapid Response COVID-19, College of Medicine. Total: \$10,000.00 for 2020-07 to 2022-03

*Shavadia J, Katselis GS (Co-Investigator) et al.* Serum Proteomics, Left Ventricular Systolic Function and Clinical Outcomes Following ST-Elevation Myocardial Infarction, RUH Foundation. Total: \$25,000.00 for 2021-04 to 2022-05.  
2020

*Simonson C, Kirychuk S (Co-investigator), Soltan J, Tam J, Zhou Y.* Study of pathogens transfer through membranes for energy exchangers. NSERC Alliance. Total: \$50,000 for 2020-08 to 2021-08

*Soltan J, Kirychuk S (Co-investigator), Simonson C, Tam J, Zhou Y.* Development of air sanitization unit to inactivate pathogens (e.g. COVID-19 virus) using catalytic reaction with ozone. NSERC Alliance. Total: \$50,000 for 2020-08 to 2021-08

*Zhang L, Kirychuk S (Co-investigator), Schwann-Lardner K.* Development of Chemical-free Egg Shell Surface Decontamination Methods Through Electro Nano-spray. NSERC Alliance. Total: \$50,000 for 2020-08 to 2022-08

*Zhang L, Kirychuk S (Co-investigator), Schwean-Ladner K.* Development of green and sustainable processes for surface decontamination of shell eggs. Agriculture Development Fund (ADF). Total \$260,000 for 2021-01 to 2024-03

## RESEARCH GRANTS

\$4M<sup>+</sup>

## FACULTY, STUDENTS & STAFF NEWS, CREDENTIALS & AWARDS

*Erin Leeder*, MSc student in Nutrition supervised by Dr. Allison Cammer, received a MSc SCPOR scholarship (2019-2021).

*Karl Grewal* and *Meghan Flath*, Clinical Psychology Masters students supervised by Dr. Megan O'Connell, both received CIHR MA awards that started in September 2019. Meghan also received a University of Saskatchewan Dean's Scholarship (3 years; \$22,000 per year plus tuition). These scholarships are offered to students who have outstanding academic records, show research promise and are registering for the first time in a thesis-based graduate program.

*Kaitlin Merkowsky*, Health Sciences Graduate Scholarship, \$24,000; September 2020 – August 2021

*Iris Geldenhuys*, NSERC URSA Scholarship, \$4,500, May 2020 to August 2020.

*Iris Geldenhuys*, Biomedical Sciences Summer Student Scholarship, \$8,050, May 2020 to August 2020.

AWARDS

\$58,000<sup>+</sup>



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