



*16<sup>th</sup> Annual*

Crossroads Interdisciplinary Health Research Conference

*March 9<sup>th</sup>-10<sup>th</sup>, 2018*

*Halifax, Nova Scotia, Canada*

## Conference Proceedings



DALHOUSIE  
UNIVERSITY

1818  
2018

# 16<sup>th</sup> Annual Crossroads Interdisciplinary Health Research Conference

*Friday March 9th  
Halifax Central Library*

<i>Time and Location</i>	<i>Activity</i>
12:00-1:00 <i>Paul O'Regan Hall</i>	<b>Check-In and Registration</b>
1:00-1:30 <i>Paul O'Regan Hall</i>	<b>Conference Welcome and Opening</b> <i>Elder Geri Musqua-Leblanc, Coordinator of Elders in Residence</i> <i>Holly Mathias and Laura Miller, Conference Co-Chairs</i> <b>Director's Welcome</b> <i>Dr. Laurene Rehman, Director, School of Health and Human Performance</i> <b>Welcome from the Healthy Populations Institute</b> <i>Dr. Sara Kirk, Scientific Director, Healthy Populations Institute</i>
1:35-2:45 <i>Paul O'Regan Hall</i>	<b>Keynote Panel #1 – “Environment and Health”</b> <i>Introductions –Holly Mathias, Co-Chair</i> <i>Moderator – Crystal Watson, Recreation Nova Scotia</i> <i>Panelists – Beau Ahrens, Dr. Debbie Martin, Dr. Daniel Rainham, and Dr. Ingrid Waldron – Dalhousie University</i>
2:45- 3:00 <i>Paul O'Regan Hall</i>	<b>Coffee and Refreshment Break</b>
3:00-4:00	<b>Mini-Course Breakout Sessions – Pre-registration required (see registration desk)</b> <i>Drs. Nancy Carter and Dorian Watts, BMO Community Room (blue nametag sticker)</i> <i>Dr. Catherine Mah, Paul O'Regan Hall (yellow nametag sticker)</i> <i>Dr. Marika Warren, Lindsay Children's Room (green nametag sticker)</i>
4:05-5:15 <i>Paul O'Regan Hall</i>	<b>Keynote Panel #2 – “Health Services and Accessibility</b> <i>Introductions –Laura Miller, Co-Chair</i> <i>Moderator – Dr. Emily Gard Marshall, Dalhousie University</i> <i>Panelists – Dr. Fred Burge, Dalhousie University/BRICN-NS; Dr. Leslie Anne Campbell, Dalhousie University; Kolten MacDonell, Nova Scotia Health Authority; Kylie Peacock, Dalhousie University/Nova Scotia Health Authority</i>
5:15-5:30 <i>Paul O'Regan Hall</i>	<b>Closing Remarks</b> <b>Conference Day 1 Closing</b>
7:00-late <i>University Club (Alumni Crescent, Dalhousie University)</i>	<b>Conference Social</b> <b><i>FREE</i></b> for everyone – Please join us at the University Club (6259 Alumni Crescent, Dalhousie University) for a friendly Maritime welcome. There will be food, fun and prizes!

**Saturday March 10<sup>th</sup>**  
**Collaborative Health Education Building (CHEB), Dalhousie University**

8:00-8:30 Room 170	<b>Check-In</b> <i>(All presenters are required to arrive with presentations at this time)</i>
8:30-9:30 Room 170	<b>Breakfast &amp; Networking</b> <b>Opening Remarks – Day 2</b> <i>Aaron Prosper, Dalhousie University</i> <i>Introduction – Holly Mathias &amp; Laura Miller, Conference Co-Chairs</i> <i>Dr. Alice Aiken, Vice President (Research), Dalhousie University</i>
9:30-10:45	<b>Oral Presentation Sessions 1</b> (Rooms 170, 220, 264, 266, 268) <b>Poster Presentation Session 1</b> (Rooms 140/150)
10:45-11:00 Room 170	<b>Break</b>
11:00-12:15	<b>Oral Presentation Sessions 2</b> (Rooms 170, 220, 264, 266, 268) <b>Poster Presentation Session 2</b> (Rooms 140/150)
12:15-1:10 Rooms 140/150, 170	<b>Poster Viewing and Lunch</b>
1:15-1:30 Rooms 140/150	<b>People's Choice Poster Voting</b>
1:30-2:30 Room 170	<b>Keynote Speaker</b> <i>Dr. Celina Shirazipour, Post-doctoral Fellow, Dalhousie University</i>
2:30-3:45	<b>Oral Presentation Sessions 3</b> (Rooms 170, 220, 264, 268) <b>Poster Presentation Session 3</b> (Rooms 140/150)
3:45-4:00 Room 170	<b>Coffee and Refreshment Break</b>
4:00-5:00 170	<b>Conference Appreciation</b> <i>Holly Mathias &amp; Laura Miller, Conference Co-Chairs</i> <b>Closing Remarks</b> <i>Maureen Summers, Healthy Populations Institute Managing Director</i> <b>Awards and Closing</b>



## **Welcome from the Conference Co-Chairs**

Hello everyone,

We'd like to welcome you to the 16<sup>th</sup> Annual Crossroads Interdisciplinary Health Research Conference! Crossroads is a student-led initiative from the School of Health and Human Performance, which has been steadily growing over the last few years. This conference gives students the opportunity to present their health-related research, network with students and faculty, and take in plenary sessions on current health research topics. This year, we are welcoming over 200 student researchers, faculty members and special guests from across Canada to Halifax.

We are very proud of the hard work that our student volunteer team has dedicated to the planning of this year's conference. Crossroads is entirely student-run and without their support, the conference you are attending would not be possible. Our volunteers are wearing blue nametags – please make sure to thank them if you see them over the weekend. We have had a wonderful time planning this conference together and we are sad that it's coming to an end, but we hope you enjoy the product of our hard work.

We encourage you to take the time this weekend to connect with other students, faculty and guests to learn new approaches, topics and methods in health and wellness research. We have created many ways for you engage during the conference, including panel discussion, mini courses, student presentations and our Friday night social! We would love for you to share your experiences with us, so that the conference can continue to grow and improve in the years to come. Feel free to connect with us on social media and the conference app using #dalcrossroads and #welcometocrossroads.

Enjoy!

The image shows two handwritten signatures in black ink. The first signature, on the left, is 'Holly Mathias' and the second, on the right, is 'Laura Miller'. Both are written in a cursive, flowing style.

Holly Mathias and Laura Miller, Master of Arts Candidates in Health Promotion  
Co-Chairs, Crossroads Conference Planning Committee 2018

## Director's Welcome

Dear Crossroads 2018 Delegates:

On behalf of the faculty, staff, and students of the School of Health and Human Performance (HAHP) I would like to welcome you to the 16<sup>th</sup> Annual Crossroads Interdisciplinary Health Research Conference and to Halifax and Dalhousie University for those who are travelling from away. The conference continues to grow and I am thrilled for the opportunities the organizers are bringing you this year. Each year the conference continues to grow and address the needs of our attendees in new and better ways.

Crossroads is a health and wellness research conference organized by the graduate students within the School of Health and Human Performance in the Faculty of Health since its inception. As one of the longest-running events of its kind, Crossroads has supported student researchers in dozens of programs and universities across Canada and has served as the catalyst for numerous other student-led research events.

The interdisciplinary nature of Crossroads encourages relationships not only between delegates, but also with community partners and research experts in a variety of health-related disciplines. These relationships have often led to students continuing in graduate programs or obtaining work opportunities resulting from their exposure during the conference.

While the faculty from the School of Health and Human Performance fully support Crossroads, the continued success of this event is really thanks to the hard work and planning of our graduate students. Please join with me and thank the organizers if you have a chance during the conference. It is my sincere hope that you enjoy this event as much as my colleagues and I do each year.

Sincerely,



Laurene Rehman, Ph.D.  
Director  
School of Health and Human Performance  
Dalhousie University





Healthy Populations Institute

On behalf of the Dalhousie University Healthy Populations Institute (Dal HPI), we would like to welcome you to the 2018 Dalhousie University Crossroads Interdisciplinary Health Research Conference. From access to health care, to the influence of the built environment on health, the conference committee has put together a stimulating and relevant program. As in previous years, this student-led conference promises to provide an excellent opportunity for knowledge sharing, networking and capacity building, building on a 16-year history and engaging student researchers from across Canada and internationally.

HPI is proud to partner with the Graduate Student Society at Dalhousie University's School of Health and Human Performance to host this conference. Through excellence in research, capacity building, and knowledge translation, HPI is a leader in health promotion and population health research in Atlantic Canada and beyond. HPI has a focus on moving research 'upstream', through research that addresses the fundamental causes of ill-health for individuals and communities. We do this through:

**Research development**

HPI encourages and supports the work of interdisciplinary research teams and draws together collaborators from many sectors to design and carry out large, multifaceted projects.

**Capacity building and training**

HPI provides excellent research training opportunities for students (undergraduate and graduate), postdoctoral research fellows and faculty members as well as researchers from outside academia.

**Knowledge Translation**

HPI provides a vital mechanism for the development of knowledge translation tools, activities and research.

**Research Management**

HPI supports the success of the research Centre members by providing high quality, continuous and effective management of new and on-going research programs and activities.

We welcome you to Halifax and hope that your time at the conference offers an opportunity to learn from each other, and share the exciting work happening at the Crossroads. We look forward to meeting with you over the next couple of days.

Sincerely,

Sara Kirk, PhD  
Scientific Director  
Healthy Populations Institute

Maureen Summers, MSc  
Managing Director  
Healthy Populations Institute

## Speakers

### Environment & Health Panel

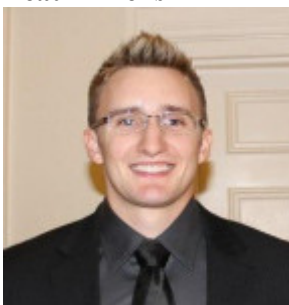
#### Moderator: Crystal Watson



Crystal Watson is an African Nova Scotian doctoral student in the PhD in Health Program at Dalhousie, a Student Research Scholar with the Healthy Populations Institute and an Adjunct Scholar with the School of Health and Human Performance. She is living out her passion to promote the benefits of recreation, leisure and play as the new Executive Director of Recreation Nova Scotia. Her research interests focus on the health of African Nova Scotians including African Nova Scotian women's health and leisure who have been involved in the church and more currently the importance of play for African Nova Scotian children's social and emotional wellbeing. With further development, her research will support the sector in expanding contributions to evidence from the field to improve

the health and wellbeing of all racially minoritized groups through recreation. She is the proud mother of Raytesha, a young-adult-who-just-finished-university-and-still-lives-at-home!

#### Beau Ahrens



Beau Ahrens obtained his BAH and MSc in Geography from the University of Guelph, where his studies focused on GIS as well as mixture of physical and social studies. He is currently an Interdisciplinary PhD student at Dalhousie University; researching interactions between people and their environment that drive healthy or unhealthy eating behaviours. Beau's current research interests focus on how we can use the design of the urban environment to promote healthy communities.

#### Dr. Debbie Martin



Debbie Martin is an Inuk scholar (South Inuit of NunatuKavut). She holds a Tier II Canada Research Chair in Indigenous Peoples' Health and Well-Being in the Faculty of Health Professions, with a cross-appointment in the Faculty of Dentistry at Dalhousie University. She is an Associate Research Scholar of the Healthy Populations Institute. Dr. Martin is an interdisciplinary-trained health researcher, whose research interests focus on addressing key societal and community level structures that influence chronic disease prevention in Indigenous communities. Her research is community-driven and includes a focus on oral health, food security, health research ethics and Indigenous methodologies, and human-environment interactions. A great deal of her research on chronic disease prevention draws upon the concept of Two-Eyed Seeing, which involves bringing together

Indigenous and non-Indigenous perspectives to address societal and community-level issues that affect the health of people and the planet. Dr. Martin is the Nominated Principal Investigator of the Atlantic Indigenous Mentorship (AIM) Network. She is the proud momma to two children – Marty (he's not 5, he's "almost 6") and Anna-Rose (who is "almost 2"), who continue to amaze and inspire her everyday. In an alternative universe, she would run, do yoga, read historical fiction, and garden successfully.

#### Dr. Daniel Rainham



Daniel Rainham is an Associate Professor (Environmental Science) and Senior Research Scholar with the Healthy Populations Institute at Dalhousie University. Working at the interface of population health science, environmental epidemiology and health geography, his research is focused on people-environment interactions and how these interactions affect health and wellbeing. These efforts are supported by innovations in wearable sensors and spatial analytics, and have most recently been applied to patient management strategies, physical activity interventions and empirical research on the role of nature contact in supporting healthy behaviours.



### **Dr. Ingrid Waldron**



Ingrid Waldron was born in Montreal to Trinidadian parents. She is a sociologist, an Associate Professor in the School of Nursing at Dalhousie University and the Director of the Environmental Noxiousness, Racial Inequities & Community Health Project (The ENRICH Project). Her research focuses on the impacts of racism and other forms of discrimination on health and mental health in Black, Indigenous, and immigrant communities in Nova Scotia and Canada; Black women's health and mental health; the racialization of psychiatric diagnoses; the impacts of gentrification and other structural determinants of health in the Black community in the North

End of Halifax; intimate partner violence experienced by racially and culturally diverse women in mid-life; and protective factors for children's welfare in African Nova Scotian, Indigenous, and immigrant communities.

The ENRICH Project is investigating the social, economic, political and health effects of environmental racism in African Nova Scotian and Mi'kmaw communities. In 2015 Dr. Waldron collaborated with MLA Lenore Zann to develop the Environmental Racism Prevention Act, the first bill on environmental racism to be introduced in a legislature in Canada. In 2017, she collaborated with the Nova Scotia Environmental Rights Working Group to develop and launch the Nova Scotia Environmental Bill of Rights, the first provincial environmental bill of rights.

Dr. Waldron's first book, *There's Something in the Water: Environmental Racism in Indigenous and Black Communities*, will be released in April 2018 by Fernwood Publishing.

### **Mini-Course Leaders**

#### **Engaging Stakeholders in Program Evaluation**

This session will offer insights into the importance of engaging stakeholders in various stages of program evaluation. The session will consider various types of stakeholders, their roles in program planning and evaluation, and approaches to meaningfully and appropriately engaging them in the evaluation process. Participants will learn to distinguish between program theory and evaluation theory, to anticipate and address challenges to stakeholder engagement and to consider the needs of multiple stakeholders during evaluation planning, implementation and reporting.

### **Dr. Nancy Carter**



Dr. Nancy Carter is the Director, REAL Evaluation Services at the Nova Scotia Health Research Foundation. She has been awarded the professional designation of Credentialed Evaluator by the Canadian Evaluation Society (CES). She is actively involved in evaluation both nationally and as a volunteer on CES working groups and provincially through her role as president of the Nova Scotia chapter of CES. Nancy's work provides guidance and advice to support evaluation across all sectors. She is particularly interested in evaluation of innovative and complex programs such as partnerships, networks and collaborative interventions.

### **Dorian Watts**



Dorian Watts is the REAL Evaluation Fellow with the Nova Scotia Health Research Foundation. Building on her formal education and previous work experience, Dorian is gaining key theoretical and practical evaluation experience through the Fellowship. As part of the Fellowship Dorian is working across public, private and non-profit sectors on many topics. Health, diversity and equity are her key areas of interest. She is currently working on her application to become a Credentialed Evaluator through the Canadian Evaluation Society (CES).



### **Cultivating your policy-relevant research program: A workshop on policy from the bottom up**

In this workshop session, Dr. Mah will facilitate a theory-informed skill-building session on what it means to influence policy from the bottom up. Participants will apply ideas from interpretive policy analysis to consider diverse linkages to policy in health research and practice. Participants will have an opportunity to map their research area and identify opportunities for building policy relevance and engagement throughout the research process.

#### **Dr. Catherine L. Mah**



Catherine L. Mah MD FRCPC PhD is Associate Professor in the Faculty of Health at Dalhousie University and Associate Research Scholar with the Healthy Populations Institute. She is also appointed at the Dalla Lana School of Public Health at the University of Toronto. Dr. Mah directs the Food Policy Lab, a multidisciplinary program of research on the determinants of healthier consumption, with a focus on health-promoting innovations in the food system. Her current research focuses on negotiating dual aims in community nutrition and economic development, supported by CIHR, the SSHRC-funded FLEdGE research partnership led by Wilfrid Laurier University, and the Australian National Health and Medical Research Council-funded Healthy Stores 2020 project in remote Indigenous Australia. Dr. Mah promotes trainee opportunities for community-engaged scholarship as well as citizen leadership. She has mentored current and former students to implement citizen science and healthy cities initiatives, as well as advising on municipal food and nutrition policy in jurisdictions across Canada.

### **Applying an Ethics Lens to Health Care**

Health care often involves making hard choices for the right reasons. Applying an “ethics lens” to health care practice helps to make explicit the role that values play in challenging situations as well as in everyday interactions and can reduce the burdens of decision making for patients/clients, families, and health care providers.

In this session, polling technology will give participants the opportunity to weigh in on commonly-encountered ethical questions as we explore the range of values relevant to health care decisions, differences in situations that change our ethical assessments, and why it can be difficult to live up to our ideals.

Topics to be discussed include:

- End of life care
- Conflict of interest
- Resource allocation
- Use of deception
- Stigmatized conditions
- Disagreement between patient/client and health care team
- Disagreement between family members about care decisions
- Moral distress for health care providers
- Organizational policy
- Conscientious objection

#### **Dr. Marika Warren**



Dr. Marika Warren is an Assistant Professor in the Dalhousie Department of Bioethics and Network Ethicist for the Nova Scotia Health Ethics Network. Marika has a longstanding interest in the intersection of values and science and in how we translate values into practice, alongside a strong commitment to social justice. Marika’s current work focuses on developing innovative ways to ensure that ethical commitments and values are reflected in healthcare practice, supporting providers in the challenging work of closing gaps that sometimes arise between how we believe we should behave and how we actually do act. Areas of particular interest include addressing stigma, promoting equity, and supporting decision making. Current projects include work on a public health ethics framework, policy regarding human milk sharing, medical assistance in dying, and simulating ethics consultations.

## Health Services Panel

### Moderator: Dr. Emily Gard Marshall



Dr. Emily Gard Marshall, BA, MSc, PhD, is an Associate Professor in Dalhousie Department of Family Medicine Primary Care Research Unit, cross-appointed in Community Health and Epidemiology, a Healthy Populations Institute Associate Research Scholar, Nova Scotia Health Authority Affiliated Scientist, McGill Family Medicine Adjunct Professor, Faculty Mentor for the CIHR TUTOR-Primary Health Care Strategic training program and on the Board of the Canadian Association of Health Services and Policy Research. Her mixed methods research examines primary healthcare access, continuity, and comprehensiveness in community and institutional settings with the goals of improving access equity and optimizing patient and

provider outcomes. Her research ranges from young people's healthcare access to studies across the life course involving population data and vulnerable populations such as those with multiple chronic conditions, the elderly, and refugees. She currently leads "MAAP-NS: Models and Access Atlas of Primary Care Providers in Nova Scotia", the first Canadian study linking census provider and practice survey data to equity and comprehensiveness outcomes from billing data; "The UP study: Unattached Patients in primary care – a mixed methods understanding of causes, consequences and solutions"; and the assessment of "Care by Design", an innovative long-term care model.

### Dr. Fred Burge



Dr. Fred Burge is a Professor of Family Medicine and Community Health and Epidemiology at Dalhousie University in Halifax. His research interests lie in health services research in Primary Healthcare (PHC). He is one of three co-leads on the CIHR funded PHC Innovation team known as "Transformation", a five-year project focusing on the science of performance measurement in PHC. Of specific interest is improving primary care of those with advanced illness. Recently he led a large provincial mortality follow back study to examine unmet healthcare needs of the dying and co-leads a study to use EMRs to identify those at risk of dying for better care planning. He is committed to strengthening Primary Healthcare research in Canada by being a founding co-investigator on the team of "TUTOR-PHC" the first CIHR funded interdisciplinary training centre for Primary Healthcare research, as co-lead of the Collaborative

on Research in PHC (CoR-PHC), a new interfaculty research initiative at Dalhousie University and as the science lead of BRIC-NS, Building Research for Integrated Primary Healthcare, the NS CIHR SPOR Primary and Integrated Healthcare Innovations Network.

### Dr. Leslie Anne Campbell



Dr. Leslie Anne Campbell is the Sobey Family Chair in Child and Adolescent Mental Health Outcomes as well as an Assistant Professor in the Department of Community Health & Epidemiology and the School of Nursing at Dalhousie University. She completed her BSc in Nursing at the University of Toronto, and both her MSc and PhD at Dalhousie University. Her research interests include patient-centered outcomes research and routine health outcome measurement, primarily in the area of child and youth mental health. Drawing upon her clinical experience and diverse training in research methods, Dr. Campbell is building a program of research that promotes the use of outcomes to inform patient care and service planning. Outside of work, Dr. Campbell enjoys spending time with her family and friends and connecting with the great outdoors.

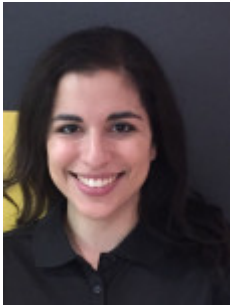
Photo by Scott Munn

**Kolten MacDonnell**

Kolten MacDonnell is Health Services Manager, Primary Health Care and Department of Family Practice with Central Zone of Nova Scotia Health Authority. Along with working with the Newcomer Health Clinic, Kolten is responsible for the prideHealth program, Department of Family Practice, and the Eastern Shore-Musquodoboit Family Practice Network. Kolten has worked in a variety of roles across the Primary Health Care portfolio, along with working with Public Health Services, inpatient acute care, and teaching as a part-time faculty member in the Department of Applied Human Nutrition at Mount Saint Vincent University.

**Kylie Peacock**

Kylie Peacock is a patient advisor and a strong advocate in the Nova Scotia Health Authority (NSHA) and at the IWK Health Centre. Her personal experiences have shaped her interests and she enjoys interacting with providers, researchers, patients, and other stakeholders to work towards improving the healthcare system. Kylie's research interests include investigating methods to improve overall healthcare delivery to patients, incorporating patient-oriented outcomes into research, chronic disease management, and an additional focus on improving child and adolescent mental health outcomes.

**Keynote Speaker****Dr. Celina Shirazipour**

Dr. Celina Shirazipour is a postdoctoral fellow at Dalhousie University. Her research aims to understand and promote physical activity participation for individuals with disability, particularly military personnel. Dr. Shirazipour's postdoctoral research is funded by the Toronto 2017 Invictus Games, where she recently presented on stage with Prince Harry! She is currently working with Invictus to explore the psychological and social impact of sport on recovery.

### ***Dalhousie University Faculty of Health***

Our faculty, staff and students are committed to improving the well-being of individuals, families, communities and populations through diverse health programming, collaborative research and strong community partnerships.

The Faculty of Health is one of the largest faculties at Dalhousie, comprised of eight schools, one college and one program, more than 200 faculty members, 80 staff members, and over 3,000 students. The most programmatically diverse health faculty in Canada, our students are exposed to a broad range of health topics and learning experiences.

### ***Dalhousie University President's Office***

Since the beginning of his presidency, **Dr. Richard Florizone** has been committed to advancing the university's three-fold mission of teaching and learning, research and service to communities. In collaboration with Dal faculty, staff and students, he has worked to build a collective vision that advances "The Four R's": retention, research, returns to society and respect, while enhancing the university's economic, social and cultural impact.

Dr. Florizone began his term as Dalhousie's 11th president in July of 2013, bringing a unique mix of academic and professional skills developed through extensive experience with universities, companies and government in Canada and abroad. Previously, Dr. Florizone was vice-president, finance and resources at the University of Saskatchewan, where he was also a Policy Fellow in the Johnson-Shoyama Graduate School of Public Policy. He earned his PhD in physics from MIT and has been a senior adviser to the World Bank Group's International Finance Corporation in Washington, D.C., as well as serving in roles with Bombardier Aerospace, Cambridge University and the Boston Consulting Group.

## Our Partners

PLATINUM	Healthy Populations Institute (HPI)	
	Dalhousie University – Faculty of Health	
	Health and Human Performance Graduate Student Society	
GOLD	Dalhousie University – President’s Office	
SILVER	Maritime SPOR SUPPORT Unit	
BRONZE	Building Research for Integrated Primary Healthcare in Nova Scotia (BRIC NS)	
	College of Registered Nurses of Nova Scotia (CRNNS)	
	Dalhousie University – Faculty of Health (Dean’s Office)	
	Dalhousie University – Faculty of Graduate Studies	
	Dalhousie University – Faculty of Management	
COMMUNITY	Dalhousie University – School of Health and Human Performance	
	Driver Dave’s	
	Lord Nelson Hotel	
	WestJet	

## **Our Team**

### **Co-Chairs**

Holly Mathias, Laura Miller

### **Planning Committee**

Robyn Burns  
Sara Brushett  
Kirk Furlotte  
Denver Hilland  
Madison MacQuarrie  
Rachele Manett  
Megan Matthews  
Maddi McKay  
John R. Miller  
Lauren Moritz  
Chelsey Sanderson  
Christie Silversides  
Jennifer Swansburg

### **Conference Volunteers**

Madeline Balardo  
KaSteva Benton  
Nicole Blinn  
Kaylee Campbell  
Grace Cooper  
Megan Flynn  
Mary Graves  
Liane Khoury  
Amelia Johnston  
Kristi Levy  
Peri Lockhart  
Tay Martin  
Kate MacNeil  
Annika McDowell  
Deborah Sanni  
Kathryn Stone  
Caroline Straub  
Carleigh Trottier  
Yosefyah Williams  
Mackenzie Wright

### **HPI Affiliate Liaison**

Susan Marsh  
Maureen Summers

**Faculty Representatives**

Dr. Sara Kirk, Health Promotion Division  
Dr. Matt Numer, Health Promotion Division  
Dr. Jerry Singleton, Leisure Studies Division

**Adjudicators**

Nicole Doria  
Emily Drake  
Dr. Karen Gallant  
Josh Goreham  
Denver Hilland  
Dr. Sherry Huybers  
Dr. Lois Jackson  
Dr. Sara Kirk  
Julia Kontak  
Dr. Catherine Mah  
Dr. Janice Moreside  
Dr. Matt Numer  
Michelle Patrick  
Dr. Helena Piccinini  
Becky Spencer  
Dr. Mikiko Terashima  
Dr. Michelle Stone  
Dr. Lori Weeks  
Kimberly Woodford  
Jeffrey Zahavich

*The committee would like to send thanks to all partners, sponsors, and donors*

*Special thanks to Wanda Dundas, Tim Mombourquette, Terry Murray-  
Arnold, Elder Geri Musqua-Leblanc, Jackie Nguyen, Aaron Prosper, Laurene  
Rehman, Sam Robertson, Sherri Slate*



## Crossroads 2018 Presentation Schedule

Saturday March 10<sup>th</sup>, 2018  
Collaborative Health Education Building (CHEB), Dalhousie University

### ORAL PRESENTATIONS

<b>Oral Presentation Room 170</b> <b>Adjudicators:</b> Kimberly Woodford, Michelle Stone (Sessions 1+2), Denver Hilland (Session 3)				
Session 1 (9:30-10:45am)				
170-1-1	Short	Matt	Dalhousie	Feasibility of an EMG-Controlled, FES assisted grasping instrument on stroke survivors
170-1-2	Johns	Jarrett	Dalhousie	The Impact of Foam Rolling on Passive Hip Flexion in Amateur Ice Hockey Players
170-1-3	Dewis	Colleen	Dalhousie	Range of Motion, Strength Differences and the Maximum Reach Envelope with Total Rotator Cuff Tears
170-1-4	Goreham	Josh	Dalhousie	Comparing inertial sensors and motion capture systems to quantify sport-specific movement patterns
170-1-5	Frayne	Ryan	Dalhousie	Comparison of impact mitigation in ice hockey goaltender upper body personal protective equipment
Session 2 (11:00am-12:15pm)				
170-2-1	Milne	Fiona	Dalhousie	Exercise prescription in the emergency department: patient perceptions
170-2-2	Sanderson	Chelsey	Dalhousie	Developing a Neurofeedback Based Intervention to Reduce Tremor in Essential Tremor
170-2-3	Alnasery	Yaser	Dalhousie	Low vision assistive technology devices for reading: A scoping review
170-2-4	Demetre	Luke	Dalhousie	Mechanical efficiency and changes in cardiorespiratory response during cadence dependant exercise
Session 3 (2:30-3:45pm)				
170-3-1	Goldenberg	Savrina	Dalhousie	Movement Related Increases in Blood Pressure During Arm Crank
170-3-2	Richard	Erik	Dalhousie	The effects of short-term cervical muscle exercise training on standing balance in young adults
170-3-3	Henderson	Zachariah	Lakehead	Ankle bracing's effect on lower extremity electromyography and kinetics during vertical jumping

<b>Oral Presentation Room 220</b> <b>Adjudicators:</b> Karen Gallant and Becky Spencer				
Session 1 (9:30-10:45am)				
220-1-1	Vervaecke	Deanna	Dalhousie	Exploring Promising Practices of Person-Centered Care for Older Adults: A Scoping Review

220-1-2	Khoury	Liane	Dalhousie	Exploring Barrier Protection Methods Use Among Women Who Have Sex With Women: A Scoping Review
220-1-3	Shannon-Dwyer	Annie Laura	Dalhousie	The Experiences of Women with High-Risk Pregnancy on Hospitalized Bed Rest: A Recreation Perspective
220-1-4	Buchanan	Marisa	Dalhousie	Exploring the Benefits of a Program-Specific Camp on Sense of Community in Undergraduates
220-1-5	Kasutu	Mulenga	Dalhousie	Parental Acceptance of Guidance on Neonate Pain Reduction Methods

### **Session 2 (11:00am-12:15pm)**

220-2-1	Flynn	Megan	Dalhousie	Exploring mindfulness meditation and unhealthy weight control in adolescents: A scoping review
220-2-2	Arndt	Janice	Dalhousie	Exploring the leisure experiences of women with Attention Deficit/Hyperactivity Disorder (ADHD)
220-2-3	Pilli	Bhanu	Univ. of Manitoba	Food Beyond Borders: Experience of International Students at the University of Manitoba
220-2-4	Dhami	Gurneet	MSVU	Assessing Diversity and Cultural Competence Among Dietetic Students in the Maritimes
220-2-5	Taylor	Nathan	Dalhousie	Development and Validation of a Novel Food Environment Measure in a University Activity Space

### **Session 3 (2:30-3:45pm)**

220-3-1	Stone	Kathryn	Dalhousie	Perceived Benefits and Barriers to Cycling by Children
220-3-2	MacLellan	Samantha	Dalhousie	Exploring Perceived Benefits and Challenges of Everyday Cycling by Parents in Halifax, Nova Scotia
220-3-3	Graves	Mary	Dalhousie	A Qualitative Case Study Focusing on Quality of Life in Children with Autism Through Leisure Education
220-3-4	Hagerman	Grace	Dalhousie	Caregivers' Perceptions of Quality of Life of Family Members Living with Dementia
220-3-5	Blinn Meisner MacQuarrie	Nicole Jessie Madison	Dalhousie	Exploring Mindfulness Meditation in the Introductory Health Promotion Classroom

### **Oral Presentation Room 264**

**Adjudicators:** Matt Numer and Sara Kirk

### **Session 1 (9:30-10:45am)**

264-1-1	Vollebregt	Bronte	Lakehead	The link between a laboratory based dual-task and driving simulator performance in young adult
264-1-2	Pridy	Colin	Dalhousie	Attention and Distraction during Exercise: Measure Development and Validation
264-1-3	Blenkharn	Brandon	Dalhousie	Wanting to Sweat Together: Relationship Between Community and CrossFit

264-1-4	Taylor	Beth	Dalhousie	Does Physical Literacy Mediate the Relationship between Children's Age and Sedentary Behaviour?
264-1-5	Mackay	Elizabeth	Dalhousie	Orthographic Knowledge, Word Reading, and Lexical Access: Are These Constructs Distinct and Related?
<b>Session 2 (11:00am-12:15pm)</b>				
264-2-1	Merati	Nickoo	McGill	James Bay Cree youth health and engagement in health planning
264-2-2	Cassidy	Christine	Dalhousie	Development of an Intervention to Improve Sexual Health Service Use Among University Students
264-2-3	Gref	Katharina	Dalhousie	Decolonizing Childbirth: Inuit Midwifery and the Return of Delivery to the Canadian North
264-2-4	Paynter	Martha	Dalhousie	Health Outcomes for Women Participating in Residential Mother-Child Programs Within Prisons
264-2-5	Silversides	Christie	Dalhousie	Searching for Services that Support Older Women who Experience Intimate Partner Violence
<b>Session 3 (2:30-3:45pm)</b>				
264-3-1	Gebre	Kalkidan	Dalhousie	An Integrative Review of Mentoring for Black Students in Nursing
264-3-2	Jeffries	Keisha	Dalhousie	Understanding the Experiences of African Nova Scotian Nurses as Leaders in Health Care
264-3-3	Boucaud	Sarah	Dalhousie	Dance of the Canadian Institutions: Canadian Medicare, the Constitution and Accountability
264-3-4	Edmonds	Sterling	Dalhousie	Progressivity and catastrophic effect of out-of-pocket payments for healthcare in Canada: 1998-2014
264-3-5	Kirk	Emily	Dalhousie	Developing LGBTQ Rights Through a Health-Based Approach: A Cuban Case Study

<b>Oral Presentation Room 266</b>				
<b>Adjudicators: Catherine Mah and Helena Piccinini</b>				
<b>Session 1 (9:30-10:45am)</b>				
266-1-1	Orovec	Adele	Dalhousie	Assessment of a parent targeted eLearning resource focused on optimizing the neonatal environment
266-1-2	Richardson	Brianna	Dalhousie	Evaluation of Mobile Applications for Parents of Infants in the NICU: A Systematic Review
266-1-3	Cameron	Emma	Dalhousie	Measuring Perioperative Distress in Children with Autism Spectrum Disorder
266-1-4	Hamodat	Teba	Dalhousie	Investigating Joint Attention Behaviour in Infants at High Risk for Autism Spectrum Disorder
266-1-5	Breneol	Sydney	Dalhousie	Improving Transitions in Care for Children with Medical Complexity and their Families
<b>Session 2 (11:00am-12:15pm)</b>				

266-2-1	Hayes	Molly	Dalhousie	Put that noise back where it came from or so help me: A statistical journey through the microbiome
266-2-2	Finlayson-Trick	Emma	Dalhousie	A Microbial Paradox: Anti-Inflammatory Activity of a Bacterial Protein in Inflammatory Bowel Disease
266-2-3	Jones	Casey	Dalhousie	The gut virome of pediatric Crohn's Disease following exclusive enteral nutrition
266-2-4	Caldwell	Alexa	Dalhousie	Iron chelation to reduce inflammation in cystic fibrosis epithelial cells
266-2-5	McKenna	Meagan	Dalhousie	Effect of the cannabis component myrcene on inflammation in a rat model of arthritis
<b>Session 3 (2:30-3:45pm)</b>				
266-3-1	Dhillon	Sandeep	MSVU	The Perceived Mental Health of Elderly Immigrant Punjabi Women Living in Nova Scotia
266-3-2	Dugandzic	Anton	Dalhousie	PGZ to improve oncologic safety & reconstructive outcomes of lipofilling for post-mastectomy defects
266-3-3	Jones	Courtney	Dalhousie	Examining the effects of C21 on cell viability, AT2R receptor and pro-fibrotic gene expression
266-3-4	Meringer	Michelle	Queen's Univ	Identification of BChE as a novel mediator of radioresistance and aggression in prostate cancer
266-3-5	Yu	Ziwa	Dalhousie	Cervical Cancer Prevention and Treatment among Inuit Communities: A Systematic Review

<b>Oral Presentation Room 268</b>				
<b>Adjudicators: Michelle Patrick and Mikiko Terashima</b>				
<b>Session 1 (9:30-10:45am)</b>				
268-1-1	Pye	Emily	Memorial	Writing in Medical Education: A Student Perspective
268-1-2	Silversides Brushett	Christie Sara	Dalhousie	Developing a Student-led Research Trainee Competency Framework in Population Health
268-1-3	Ramlackhansingh	Jinelle	Memorial	The medical school learning environment and professional identity development of medical students.
268-1-4	Sim Aubrecht	Beth Katie	Dalhousie MSVU	Embedded in the local health system: Experiences from CIHR Health System Impact Fellows
268-1-5	Warde	Fiona	Dalhousie	LGBTQ+ Health in Undergraduate Medical Curriculum
<b>Session 2 (11:00am-12:15pm)</b>				
268-2-1	Wescott	Delainey	Dalhousie	Sleep in children and youth at familial risk for severe mental illness
268-2-2	Burns Mannett	Robyn Rachele	Dalhousie	The Recreation for Mental Health Game: Reflections on interactive KT development and facilitation

268-2-3	Brushett	Sara	Dalhousie	A process of he said, she said? An exploratory mixed methods study of secondary age stereotype data
268-2-4	Hawrylshen	Nikki	Univ. of Manitoba	Body Image Perceptions and Eating Behaviours of Manitoban Rural and Urban Baby Boomer Women
268-2-5	MacLellan	Matt	Dalhousie	A Legal Assessment of Treatment for Incarcerated Persons Living with Borderline Personality Disorder
<b>Session 3 (2:30-3:45pm)</b>				
268-3-1	Limpert-Woods	Sara	Dalhousie	Examining the Collective Impact Framework: A Case Study of the Try Do Council of Halifax
268-3-2	Salsbury	Ellie	Dalhousie	Healthcare Providers' Views Around Deprescribing in Nova Scotia: Preliminary results
268-3-3	Akhtar	Shofia	Lakehead	Mental Illness and Its Risk Factors for First Nation Workers in Northwestern Ontario
268-3-4	Greene	Jennifer	Dalhousie	Mortality after "treat and release" in EMS overdose care: A systematic review
268-3-5	Brothers	Thomas	Dalhousie	Harm reduction among hospital inpatients with injection drug use-associated infective endocarditis

## POSTER SESSIONS

**\*\*All poster sessions will be happening in Rooms 140/150 (adjoining rooms)\*\***

<b>Session 1 (9:30-10:45am)</b>				
<b>Adjudicators: Sherry Huybers, Lois Jackson, Janice Moreside, Jeffrey Zahavich</b>				
1-1	Burns	Robyn	Dalhousie	How do we talk about drinking when we aren't talking about health?: A qualitative systematic review
1-4	Douglas	Catriona	Dalhousie	Biohacking the way from patient to experimenter
1-7	Vonkeman	Janeske	Dalhousie	Barriers to questioning about intimate partner violence in an Emergency department
1-10	Brogan Mitchell	Nicola Hailey	Univ of Ottawa	Baby blues and marital issues: Intimate partner violence and postpartum depression
1-13	Blackman	Chloe	Dalhousie	Examining the Association in Prostate Cancer Diagnosis and Mental Health Quality of Life Outcomes
1-16	Hubley	Candice	Acadia	Between a Rock and a Hard Place: When Affirming Life Reduces Depression but Increases Anxiety
1-19	Johnston	Amelia	Dalhousie	Alcohol Policy in Nova Scotian Universities: A Scoping Review

1-22	McLeod	Sarah	Acadia	Community radio and women's health: Radio broadcasting for teenage pregnancy prevention
1-25	Matthews	Megan	Dalhousie	Addressing Mi'kmaq Priorities in the Development of a 'Land as Mentor' Field School
1-28	MacQuarrie	Madison	Dalhousie	The power of participation: How might community partners sustain the Halifax Mobile Food Market?
1-31	MacEachern	Lauren	MSVU	Diffusion of innovations in the long-term care sector: Does motivation play a role?
1-34	Linton	Vanessa	McMaster	Does the school setting matter? Exploring school and class effects on health behaviours
1-37	Ollivier	Rachel	Dalhousie	Taboo Talk: Addressing Sexual Health in Acute Care
1-40	Little	Victoria	Dalhousie	First-Time Mothers' Experiences of Prenatal Education and Support: Implications for Practice
1-43	Leung Hanrahan	Doris Cassandra	UBC Dalhousie	One Health: Improving Public Health by Providing Care to Marginalized Clients and Companion Animals
1-46	Robinson	Alysia	Dalhousie	Community Variation in Hospital Length of Stay: An Indicator of Community Care Integration
1-49	Joshi	Nila	Dalhousie	Identifying priorities for competency-based simulated experiences as fieldwork
1-52	Lachance	Lisa	Dalhousie	Embracing Life - Youth-led Suicide Prevention
1-55	Bartel	Sara	Dalhousie	Is anxiety sensitivity a risk factor for, or complication of, alcohol misuse? A meta-analysis
1-61	Dol	Justine	Dalhousie	Knowledge acquisition after Helping Babies Survive training in Tanzania
1-64	Canvin	Gillian	Univ of Guelph	Age and Changing Risk Factors in Suicide Risk Assessment
1-67	Moritz	Lauren	Dalhousie	Youth with a Physical Disability from Rural Places: Experiences of Access to Leisure & Education
1-70	Withers	Ellen	Dalhousie	Examining Preventive Programs that Address Problematic Gambling for Adults 60 Years and Older
1-73	Hacker Teper	Matthew	McGill	Making Case Management Work: Integrating Case Management into Québec primary care settings
1-76	Furlotte	Kirk	Dalhousie	End-of-Life Care Expectations and Experiences of Older Gay, Bisexual, and Men who have sex with Men
1-79	Landry	David	Universite Sainte-Anne	Quantification of Emerging Cyanotoxins in the Freshwater of Nova Scotia Southwestern Region

Session 2 (11:00am-12:15pm)				
Adjudicators: Josh Goreham, Julia Kontak, Lori Weeks, Jeffrey Zahavich				
2-2	Nezamololama	Novin	Trent	Ligand binding properties of the flavohemoglobin in the waterborne parasite <i>Giardia intestinalis</i>
2-5	Kang	Mehima	Queen's	Risk of chronic kidney disease following acute kidney injury during DKA in children with T1D
2-8	vanRoon	Patricia	Carleton	Brain measures for detecting hearing difficulties in humans

2-11	Minor	Calli	Trent	Dictyostelium discoideum as a Model System to Study LITAF Function
2-14	Ko	Kristin	Dalhousie	High-Throughput 3D Neural Cell Culture Analysis Facilitated By Aqueous Two-Phase Systems
2-17	Teixeira	Alyne	Dalhousie	Design of a high-throughput screening system to identify and evaluate immunotherapy agent
2-20	Butler	Emily Ann	Dalhousie	Development of a consensus definition and classification criteria for Scleroderma renal crisis (SRC)
2-23	Filliter	Chris	Dalhousie	Regional variation in time to surgery for hip fracture patients in Canada
2-26	Ali	Nikki	Dalhousie	Optimizing an eHealth Insomnia Intervention for Children with Neurodevelopmental Disorder
2-29	Joyce	Kayla	Dalhousie	Changes in coping and social motives for drinking and alcohol consumption across the menstrual cycle
2-32	Riel	Hayley	Dalhousie	Examining the influence of sex on auditory change detection as a biomarker in early-phase psychosis
2-35	Bishop	Tara	Queen's	Predicting post-discharge readmission/mortality in children repatriated to northern communities
2-38	Parsons	Kayla	Saint Mary's Univ.	Analysis of Student Perceptions of Risk and Patterns of Substance Use in a University Population
2-41	Nathan	Prathana	Dalhousie	Parent views on identification, competence, barriers and information needs related to pediatric pain
2-44	Westhaver	Lauren	Dalhousie	The effect of mitochondrial DAMPs and natural killer cells on ischemia reperfusion injury
2-47	Hargreaves	Breanna	Dalhousie	Interplay between Natural Killer Cells, Synoviocytes, and MicroRNA in Auto-Inflammatory Disease
2-50	Duncan	Anna	Dalhousie	Socio-demographic trends and lived experiences with teenage pregnancy in Saint John, New Brunswick
2-53	Chisholm	Meghan	Dalhousie	MAiD for patients with ID: Does supported decision-making enhance its ethical permissibility?
2-56	Truffyn	Emma	STFX	An Investigation of Anxiety in Dental Services
2-59	Stymiest	Kate	Dalhousie	Children with Complex Health Conditions: Navigating the System in New Brunswick
2-62	Drake	Paige	Univ of Guelph	Extracellular matrix supports epithelial papillae that instruct direct bone development
2-65	Bond	Talia	Dalhousie	An Investigation of Singing as a Reflection of Pulmonary Disorders: A Meta-Analysis
2-68	Aali	Maral	Dalhousie	Iron chelation in experimental sepsis
2-71	Sardiwalla	Yaeesh	Dalhousie	The importance of recognizing historical achievements in surgical education – Canadian highlights
2-74	Robinson Allen	Ashley Laura	Dalhousie	iHEAR: iPad point of care diagnostic audiometry in Halifax elementary schools.



2-77	Johnston	Leah	Dalhousie	Effects of prolactin receptor deletions on the development of gestational diabetes in pregnant mice
2-80	Duncan	Anna	Dalhousie	Socio-demographic trends and lived experiences with teenage pregnancy in Saint John, New Brunswick

<b>Session 3 (2:30-3:45pm)</b> <b>Adjudicators: Nicole Doria, Emily Drake, Josh Goreham, Lori Weeks</b>				
3-3	Biderman	Maya	Dalhousie	Assessing the usability of the Pediatric Oncology Exercise Manual and Parent/Caregiver Supplement
3-6	Cava	Dominique	Lakehead	The Impact of Therapeutic Taping on the Kinematics of the Lower Extremity while Running
3-9	Chilco	Alyssa	Dalhousie	The Effect of Implicit Age Stereotype Priming on a Reaching Task
3-12	Froud	Sophie	Dalhousie	Influence of Mattress Immersion Properties During Lateral Patient Transfer: A Biomechanical Analysis
3-15	Ead	Lauren	Dalhousie	The Effects of Body Position during a Lateral Patient-Handling Task: A Biomechanical Analysis
3-18	Stevens	Madison	Dalhousie	Factors Predicting Length of Stay After Elective Lumbar Spine Surgery
3-21	Schnare	Andrew	Dalhousie	Aircraft Cockpit Pilot Accommodation
3-24	Nichol	Austin	Dalhousie	Mobility of Upper Body Goaltender PPE
3-27	MacWilliam	Kristi	Lakehead	Perfectionism and Rehabilitation Overadherence in Injured Athletes
3-30	Sayed	Sara	Lakehead	Identifying musculoskeletal injury risk for development of injury prevention tools for firefighters
3-33	Brown	Dennis	Dalhousie	The impact of supplementary motor area inhibition on motor imagery-based implicit sequence learning
3-36	Feniyanos	Emile	Dalhousie	Age- and Sex-Based Differences in Overload Damage to Human Tendon Collagen
3-39	Walker	Brynn	Dalhousie	Characterizing the role of chemokines and their receptors in oncolytic virus therapy.
3-42	Kervin	Emily	MSVU	Physical Design and Homelikeness in Long-Term Care
3-45	Wiseman	Joscelyn	Acadia	Influence of Nutrition, Activity, and Sleep on Skeletal Health and Quality of Life in the Elderly
3-48	Zahavich Limpert-Woods	Jeff Sara	Dalhousie	Understanding the role of public health-oriented physical education in middle schools
3-51	Doyle	Jessie	STFX	Anxiety Sensitivity and Mindfulness As Mediating Attachment And Cluster B Personality Traits
3-54	Plotnick	Meghan	Dalhousie	Women's perspectives of barriers and facilitators to physical activity in the postpartum period

3-57	Larade	Alyssa	Dalhousie	The Effect of Yoga Duration on Cardiovascular Response and Psychological Well-being
3-60	Neville	Alyssa	Dalhousie	The Effect of Yoga Duration on Mood and Cognitive Function
3-63	Webber	Natasha	Dalhousie	Parent attitudes towards risky play and preschool children's physical activity and physical literacy
3-66	Branje Balcom	Karina Leah	Dalhousie	Features of outdoor play and learning environments associated with preschoolers' physical activity
3-69	McFayden	Megan	Dalhousie	Does parent physical activity and sedentary behaviour relate to preschoolers' physical activity?
3-72	McDonald Parker	Abby Ashlee	Dalhousie	Are fundamental movement skills related to physical activity behaviour in Nova Scotia preschoolers?
3-75	Kennedy	Rebecca	Lakehead	Can Kinesiology Student-Teacher Partnerships Enhance Phys-ed Delivery in Public Schools?
3-78	Richard	Brenna	MSVU	The Influence of Playgrounds on Childhood Physical Activity: A Scoping Review

## **Iron chelation in experimental sepsis**

Maral Aali<sup>1</sup>, Taylor Thorburn<sup>2</sup>, Juan Zhou<sup>3</sup>, Christian Lehmann<sup>1,2,3</sup>, Bruce Holbein<sup>4</sup>

1, Department of Physiology and Biophysics; 2, Department of Microbiology and Immunology; 3, Department of Anesthesia, Pain Management & Perioperative Medicine; Dalhousie University; 4, Chelation Partners Inc., Halifax, NS.

### **Introduction:**

Iron homeostasis disruptions have been associated with progression of sepsis where the immune response is dysregulated in response to an infection. Reactive oxygen species (ROS) are key pro-inflammatory mediators that play a critical role during detrimental hyper-inflammatory phase of sepsis. Despite providing immune defense against pathogens, excess ROS damage host tissues and organs. As iron is needed to synthesize ROS, we hypothesized that by using iron chelators, molecules that bind to iron with high affinity, the consequences of hyper-inflammation in sepsis can be reduced. In this study, the effect of novel iron chelator (DIBI) and clinically used iron chelators (deferiprone (DFP), deferioxamine (DFO), and deferasirox (DFX) was examined.

**Methods:** To induce experimental sepsis, mice were challenged with endotoxin IV (T=0) and were administered one of the iron chelators (T=15min). Intravital microscopy of the intestine microcirculation was then performed to evaluate leukocyte activation and capillary perfusion (T=2hrs).

**Results:** In comparison to (untreated) endotoxemic mice, DIBI treatment reduced the number of adhering leukocytes by 67% in submucosal collecting venules, whereas DFP and DFO treatment resulted in a 39% and 52% reduction, respectively. Additionally, administration of DIBI, DFP, and DFO improved the capillary perfusion of intestinal muscle and mucosa layers by 98%, 126%, and 128% respectively in endotoxemic mice.

**Conclusions:** DIBI was the most effective chelator studied in experimental sepsis with almost complete reversal of the detrimental effects of endotoxemia within the microcirculation. Understanding the impact of iron chelation on the immune response in sepsis offers potential new treatment options and improved outcome.

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## **Mental Illness and Its Risk Factors for First Nation Workers in Northwestern Ontario.**

Shofia Akhtar, Dr. Vicki L Kristman,

Department of Health, Lakehead University

**Background/objectives:** Mental illness (MI) is a health disorder, which negatively affects individuals' mood, thinking, and/or behavior. The prevalence of mental illness among Indigenous communities is significantly higher than the general Canadian people. Also, the unemployment rate of Indigenous workers is double that of non-Indigenous workers. Studies have shown bullying, discrimination, and inadequate employer support are risk factors for MIs among non-indigenous workers. However, due to the difference in the culture and lifestyle, there might be some additional risk factors among Indigenous communities. Therefore, the limited studies on Indigenous workers have motivated us to focus on two following research objectives: to determine (among six First Nation communities in Northwestern Ontario) a) the associations between MIs and workforce participation and b) work-related risk factors associated with MIs.

**Methods:** A cross-sectional study design will be used to achieve the objectives. I will use survey data being collected in collaboration with the Nokiiwin Tribal Council, which services six First Nation communities in Northwestern Ontario. The primary outcomes of interest are workplace participation (employed vs. unemployed) and mental health status that will be measured using the Mental Component Score of the Short Form-12 Health Survey. Regression analysis will be used to achieve above-mentioned objectives.

**Results/Conclusion:** Healthy and productive Indigenous workers are important for the Canadian economy

and society. The outcome of this research will help identifying the extent to which MI is associated with Indigenous-workforce participation. Also, findings of related risk factors will facilitate to develop effective intervention programs for Indigenous workers.

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### **Optimizing an eHealth Insomnia Intervention for Children with Neurodevelopmental Disorders**

Nikki Ali<sup>1</sup>, Gabrielle Rigney<sup>1</sup>, Shelly K. Weiss<sup>2</sup>, Cary A. Brown<sup>3</sup>, Evelyn Constantin<sup>4</sup>, Roger Godbout<sup>5</sup>, Ana Hanlon-Dearman<sup>6</sup>, Osman Ipsiglu<sup>7</sup>, Graham J. Reid<sup>8</sup>, Sarah Shea<sup>9</sup>, Isabel Smith<sup>9</sup>, Machiel Van der Loos<sup>7</sup>, Penny Corkum<sup>1</sup>

1, Dalhousie University; 2, University of Toronto; 3, University of Alberta; 4, McGill University; 5, Université de Montréal; 6, University of Manitoba; 7, University of British Columbia; 8, Western University; 9, IWK Health Centre

**Introduction:** Insomnia, which is related to daytime deficits and is a common problem for children with neurodevelopmental disorders (NDD), is often successfully treated with behavioural strategies. However, there are barriers to accessing these treatments and there has been little research examining what these interventions need to be usable and effective. The goal of this study was to gain consensus from experts in the field on the key components of an eHealth, parent-implemented, intervention program aimed at improving sleep in children with attention deficit hyperactivity disorder, autism spectrum disorder, cerebral palsy, and fetal alcohol spectrum disorder.

**Methods:** This study employed the Delphi method, which involves asking participants to respond to open-ended questions about a topic of interest and then, in iterative rounds, to rate the recommendations that were made by the group.

**Results:** In the current study, participants (27 responders in the first round, 21 in the second and 18 in the third) rated a total of 131 recommendations. Of those 131 recommendations, 52 items had high importance and high consensus and were deemed to be priority items to consider for creating an eHealth, parent-delivered, behaviourally-based intervention for insomnia in children with NDD. Furthermore, 75% (n = 84) of the 112 recommendations from the first round were believed to be applicable across all four NDD groups.

**Conclusions:** The results of this study, in particular the 52 high importance and high consensus items, provide evidence of the potential for a transdiagnostic intervention.

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### **Low vision assistive technology devices for reading: A scoping review**

Yaser Alnasery<sup>1,2</sup>, Kaitlin Sibbald<sup>1,2</sup>, Andria Kosel<sup>3</sup>, Victoria Godin<sup>1</sup>, Tanya Packer<sup>1,2</sup>

1, Dalhousie University; 2, International Chronic and Complex Conditions Research Group; 3, Canadian National Institute for the Blind;

**Introduction:** Reading is one of the main occupations that people with low vision name when setting goals and priorities yet, devices to assist with this goal are often abandoned. While many Assistive Technology Devices (ATDs) are available, not much is known about how and why people with low vision are choosing their reading devices. This review aims to understand what ATDs people with low vision prefer to use for reading, as well as how and why these ATDs were selected.

**Methods:** This scoping review follows the six stages of Arksey and O'Malley's (2005) framework. The research team, consists of the primary investigator, an experienced researcher in the field of low vision and three occupational therapists. 2115 articles retrieved from thirteen online databases underwent a two-level screening process. Using the Human Activity Assistive Technology (HAAT) model, data extracted from the included articles examined types and characteristics of technology used for reading as well as people's opinion regarding how and why they have selected their ATDs. Anticipated Results: We anticipate that findings will show use of both high (e.g. CCTVs) and low level (e.g. magnifiers) technologies. Variation in

selection and use is expected to be based on several reasons related to either the technology or the user. These reasons might also contribute to the abandonment of technology.

**Significance:** Understanding what ATDs people with low vision use for reading and why, will assist clinicians in prescribing ATDs based on patients' preferences and priorities.

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### **Exploring the leisure experiences of women with Attention Deficit/Hyperactivity Disorder (ADHD)**

Janice Ardnt<sup>1</sup>, Dalhousie University

**Introduction:** Women with ADHD contend with a neurological condition that can be characterized by dysregulated thoughts, attention, emotions and behaviours. ADHD can negatively impact academics, employment, and relationships. Women with ADHD are at risk of developing psychological disorders, and ADHD symptoms may increase conflict with female gender norms. Leisure engagement could be particularly important for women with ADHD. Leisure plays a significant role in mental health and quality of life; however, neither studies on ADHD or leisure have addressed how leisure experiences and impacts are unique for women with ADHD. Further research is needed in these areas to help inform health practitioners, particularly Therapeutic Recreation practitioners, on possible strategies in supporting this population through leisure and recreation. This proposed study explores the leisure experiences of women with ADHD, and the influencing factors, barriers and strategies that hinder or help them achieve their desired leisure experiences.

**Methods:** This qualitative description study will use a social constructivist lens to explore the complexities of leisure experiences among post-secondary female students with ADHD. Data will be collected through focus groups of three to six individuals at Dalhousie University. Semi-structured interviews may be offered to participants who are not comfortable sharing in a group setting. Data will be recorded and transcribed for thematic analysis and key themes will be interpreted.

**Anticipated results:** A greater understanding of leisure experiences among Women with ADHD may lead to future research to inform therapeutic recreation and leisure education support services for Women with ADHD.

**Significance:** The results of the proposed study results will add to the understanding of how women with ADHD experience leisure.

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### **Knee joint function during medially directed walking surface translations in Knee Osteoarthritis.**

Matthew Baker<sup>1</sup>, William Stanish<sup>1</sup>, Derek Rutherford<sup>1</sup>  
1, Dalhousie University

**Introduction:** Unexpected walkway translations during gait have been used to understand knee osteoarthritis (OA) joint function objectively, in the context of instability often reported during dynamic activities. The purpose is to determine if knee/hip joint motions and muscle activations are altered in the stride during a medial 3cm walking perturbation in these populations.

**Methods:** Twenty individuals with moderate knee OA and 20 asymptomatic controls were recruited. Skin surface electrodes were placed on the quadriceps (VM, VL, RF), hamstrings (MH, LH), gastrocnemius (MG, LG), and gluteus medius (GM) muscles and passive retro-reflective markers were affixed to bony landmarks and rigid segments using standardized procedures. Marker motions, electromyograms (EMG) and ground reaction forces were recorded while participants walked barefoot on a dual-belt, instrumented treadmill at a self-selected speed. Discrete biomechanical variables were identified. Principal Component Analysis was used to identify features of EMG variability. Student's t-test determined demographic group differences and Analysis of Variance models were used to test for perturbation response differences ( $\alpha=0.05$ ).

**Results:** Time main effects were found for frontal plane knee motion and EMG characteristics ( $p < 0.05$ ) however both groups responded in a similar manner during the 3cm medial perturbations.

**Conclusion:** An unexpected, external walking perturbation generates an elevated systematic response from lower extremity musculature, thought to result in greater joint stability. These responses however, do not appear to be different between asymptomatic individuals and those with moderate knee OA questioning this perturbation sequence in targeting impairments associated with the OA disease process.

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**Is anxiety sensitivity a risk factor for, or complication of, alcohol misuse? A meta-analysis**  
Sara J. Bartel<sup>1</sup>, Simon B. Sherry<sup>1</sup>, Martin M. Smith<sup>2</sup>, Vanja Vidovic<sup>3</sup>, Patricia J. Conrod<sup>4</sup>, Sherry H. Stewart<sup>1,5</sup>

1, Department of Psychology and Neuroscience, Dalhousie University; 2, School of Sport, York St. John University, 3, Department of Psychology, University of Waterloo; 4, Department of Psychiatry, Université de Montréal; 5, Department of Psychiatry, Dalhousie University

**Introduction:** Anxiety sensitivity (AS) refers to a propensity to respond to anxiety sensations with fear. Longstanding theoretical accounts also implicate AS in alcohol misuse; however, the relationship between AS and alcohol misuse remains unclear. We addressed this by testing whether AS is a risk factor for, and/or complication of, alcohol misuse by conducting a rigorous meta-analysis using random effect models.

**Methods:** Our literature search yielded 15 studies ( $N = 9,459$ ). Studies were included if they used a longitudinal design, assessed AS and alcohol misuse at baseline, and assessed alcohol misuse and/or AS at follow-up.

**Results:** Overall, results failed to support AS as a risk factor for, or complication of, alcohol misuse.

**Conclusions:** Researchers are encouraged to test if the relationship between AS and alcohol misuse only emerges under specific conditions (e.g., elevated state anxiety).

**Assessing the usability of the Pediatric Oncology Exercise Manual and Parent/Caregiver Supplement**  
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1, School of Health and Human Performance, Dalhousie University; 2, Behavioural Medicine Lab, Dalhousie University

**Introduction:** Physical activity (PA) serves as an effective means of improving health in paediatric cancer survivors (PCS), while simultaneously reducing the risk of developing chronic conditions as a result of late cancer treatment effects. As parents have been shown to have a strong influence on a child's participation in PA, strategies are needed to better inform and encourage patients to foster greater PA in their child with cancer. The purpose of this project is to assess the usability of the Paediatric Oncology Exercise Manual-Family Version+ (POEM-FV+) and its ability to change attitudes and beliefs towards the importance of PA for PCSs. It will also explore the ability of the Parent/Caregiver Supplement to change attitudes and beliefs about the benefits of PA for caregivers.

**Methods:** The proposed research project is a two-phase, longitudinal educational intervention. Educational sessions will be delivered in-person for parents/guardians of PCS. Information on the benefits of PA for PCS and their parents/guardians will be provided. Attitudes and beliefs towards PA will be assessed before and immediately following the education session, as well as at a one-month follow up using self-report surveys.

**Anticipated Results:** It is expected that both attitudes towards and knowledge of the benefits of PA for PCS and their parents will increase in participating parents/guardians. Overall, it is anticipated that participants will find the POEM and the Family/Caregiver Supplement useful and effective and will be recommended for the inclusion future versions of the POEM.

**Significance:** Physical activity can simultaneously improve the health status of PCSs and their caregivers,

and can mediate the risk of developing adverse health outcomes.

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**Predicting post-discharge readmission/mortality in children repatriated to northern communities**

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**Introduction:** Infectious diseases are a leading cause of paediatric admissions in northern remote regions of Canada. Affected children are transported for treatment and discharged home where follow-up is challenging and readmissions are burdensome. There are no reported rates of post-discharge readmission/mortality in northern BC and Yukon, and no tools to help identify high-risk children. Identification of readmission predictors and prediction model derivation are important steps in providing “smart discharges” for vulnerable patients.

**Methods:** This is a retrospective cohort study involving children admitted to BCCH or UHNBC with an acute infectious disease between 2000-2015. Eligible patients from northern BC and Yukon were identified using infectious disease related codes. Chart reviews are underway. Candidate predictor variables (clinical, laboratory, and socio-demographic factors) based on a modified Delphi process will be analyzed, and 6-month readmission/mortality statistics will be collected through PopData BC.

**Results:** Preliminary data has been retrieved and analyzed for 94 patients; 66% were male, with a median age of 5 years (IQR 1-13 years). Notable patient admission statistics included: 45% were of Aboriginal identity, and 67% had a comorbidity. Common admission diagnoses included: lower respiratory tract infection (24%), sepsis (11%), and/or a UTI (10%). E. coli (21%) was the leading bacterial infection, and RSV (11%) was the most common viral infection.

**Significance:** Our findings show a high proportion of patients with comorbidity and Aboriginal identity. Further analysis linking these admissions to readmission in the following 6-months will allow the identification of predictors which can help guide resources towards the most vulnerable children.

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**Examining the Association in Prostate Cancer Diagnosis and Mental Health Quality of Life Outcomes**

Chloe Blackman, Dalhousie University

**Introduction:** Prostate cancer is the most commonly diagnosed cancer among men in Canada, with one out of every seven men facing a diagnosis in their lifetime. As a result of increased prostate cancer survivorship, patients are now faced with increased mental health risk. This research will focus on the impact of prostate cancer diagnosis on mental health quality of life outcomes.

According to the Canadian Statistic Special Topic report in 2015, the five-year survival ratio of prostate cancer is 96. In general, studies have found that prostate cancer patients have a poorer quality of life over medium and long term. This study will focus on mental health outcomes and examine diet, sleep, exercise, and substance use as covariates of mental health quality of life outcomes among men with and without a prostate cancer diagnosis.

**Methods:** The Atlantic Partnership for Tomorrow's Health is a regional cohort of the national Canadian Partnership for Tomorrow Project and includes data on 35 935 participants pertaining to health, socioeconomic status, and life style choices. A multinomial logistic model will assess prevalence of the



outcomes of interest including covariates and determine Odds-Ratios for the assessed outcomes of interest.

**Anticipated Results:** This project aims to develop an adjusted multinomial logistic model to understand the association between prostate cancer diagnosis and mental health quality of life outcomes (diet, sleep, exercise, and substance use).

**Significance:** Recent literature has demonstrated the impact of prostate cancer on mental health outcomes. By better understanding how mental health and its adverse health correlates co-occur with prostate cancer diagnoses we can begin to develop comprehensive care plans for men coping with cancer.

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### **Wanting to Sweat Together: Relationship Between Community and CrossFit**

Brandon Blenkarn, Dalhousie University

**Introduction:** Physically-active leisure offers numerous physical, psychological and social benefits (Shiraeve & Barclay, 2012). Physically-active leisure offers increased enjoyment and long-term participation (Darlow & Xu, 2011). Further, there are heightened benefits when physically-active leisure activities occur in community environments (Iwasaki, Zuzanek & Mannell, 2001). CrossFit is a community-oriented fitness program growing in popularity, with 14,000 affiliates and approximately two to four million participants (Wang, 2016). This study examined the relationship between sense of community and intrinsic motivation within CrossFit.

**Methods:** Through a mixed-methods, cross-sectional design, participants (N = 235) were recruited from CrossFit gyms to respond to online surveys. Participants provided basic demographic information and completed two validated measures of sport motivation and sense of community. The survey ended with three open-ended questions related to participants' reasons for participating in CrossFit and their experiences of community within CrossFit.

**Results:** Data analysis indicated a correlation between intrinsic motivation and overall sense of community ( $r = .413$ ,  $n = 227$ ,  $p < .001$ ). Using a thematic analysis of the written responses, results demonstrated themes surrounding fitness and health, personal fulfilment, social connections and logistics contributed to individual motivation. Membership, support and activity 'outside' the gym were evident within participants understanding of sense of community.

**Significance:** Understanding motivations behind physical activity is important as activity rates are declining overall. This study is significant in terms of connecting elements of intrinsic motivation to individual's feelings around their community.

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### **Exploring Mindfulness Meditation in the Introductory Health Promotion Classroom**

Nicole Blinn<sup>1</sup>, Jessie Meisner<sup>1</sup>, Madison MacQuarrie<sup>1</sup>, Becky Spencer<sup>1</sup>

1, Dalhousie University

**Introduction:** Students experience many stressful transitions, such as that from high school to university. The Introduction to Health Promotion (HPRO 1195) course offers a unique setting to explore transitions as it requires a change in how we understand health: from a biomedical view to one of equity and prevention. Mindfulness meditation (MM) has been shown to reduce anxiety and stress, enhance attention and preparedness, and support empathy and compassion. MM is increasingly used in educational settings, though its use in postsecondary classes needs more study. Our purpose is to explore how MM, used in HPRO 1195, relates to transitions experienced by first-year or transfer students in the Health Promotion program.

**Methods:** This project will be conducted with a poststructural lens and participatory approach, with students

as part of the research team. Qualitative data collection will include anonymous open-ended questions exploring students' experiences with MM and transitions through the Tophat platform, and focus groups and interviews to explore concepts in greater depth.

**Anticipated Results:** We believe using MM creates new possible outcomes for students and faculty. Findings will provide insight into students' experiences with MM within and beyond HPRO 1195, MM's relation to transitions experienced by students in HPRO 1195, and the strengths and limitations of using MM in the postsecondary classroom.

**Conclusions/Significance:** Using MM in university courses can challenge common classroom power dynamics and traditional methods of teaching and learning. The participatory approach is an innovative way to engage students in research early in their studies. MM may have benefits for students experiencing transitions, potentially enhancing their educational experience.

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### **An Investigation of Singing as a Reflection of Pulmonary Disorders: A Meta-Analysis**

Talia Bond<sup>1</sup>, Dr. Annabel J. Cohen<sup>1</sup>

1, Dalhousie University

**Introduction:** While research is being conducted on the effects of singing on health, most of the focus is on group singing. This makes it hard to distinguish whether positive effects which arise from the singing are derived from the social aspect as compared to the physical process of singing itself. In order to address this question, a meta-analysis was done on the physiological effects of singing on pulmonary health and function.

**Methods:** A total of 11 studies met the criteria for inclusion, and the Hunter-Schmidt method of analysis was used.

**Results:** A moderate positive correlation between singing and pulmonary rehabilitation was found,  $r(10) = .61$ ; however a large variance in population effect sizes, as well as sampling error, was also found, giving a 90% credibility interval from .256 to .974.

**Conclusions/Significance:** While it appears that singing could potentially be a great resource for pulmonary rehabilitation, due to the small study size, the large sampling error, as well as the unavailability of data, leads to the requirement of further testing in this area.

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### **Dance of the Canadian Institutions: Canadian Medicare, the Constitution and Accountability**

Sarah Boucaud, Dalhousie University

**Introduction:** Canadians do not have a positive right to healthcare under s. 7 of the Charter of Rights and Freedoms (Charter). However, litigation has become a resort for many that face barriers to care, almost as if a positive right existed. This literature review examines the gap in the healthcare accountability structure between the courts and government. It also examines the significant social implications that emerge from the Supreme Court of Canada's s. 7 analysis of healthcare access issues, framed exclusively as negative rights.

**Methods:** A literature review was conducted on a variety of databases, including: Novanet, Social Science Research Network, and Index to Canadian Legal Literature.

**Results/Anticipated Results:** The literature review revealed several concerns as it relates to litigation for healthcare access. This includes: (1) The courts' difficulty in evaluating the nuances of healthcare policy issues; (2) The arbitrariness of framing healthcare access issues as "negative" or "positive" rights; and (3)

That healthcare-related s. 7 Charter litigation challenges existing accountabilities, while failing to provide claimants with what they were seeking.

**Conclusions:** A multipronged approach is recommended to enhance the accountability of Canadian institutions as it relates to the health system. This includes: (1) A positive duty on the elected branch of government to assess and continually reform legislation for rights-compatibility; (2) The recognition by Courts of the public policy implications of their negative rights decisions; (3) An enhanced dialogue between the courts and the legislatures; and (4) The reinforcement of the system through administrative and tort law.

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### **Features of outdoor play and learning environments associated with preschoolers' physical activity**

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1, Dalhousie University

**Introduction:** The early years are a critical period for the establishment of healthy physical activity (PA) behaviour. In Nova Scotia (NS), 75% of preschoolers attend licensed childcare, spending the majority of their day there. While various attributes of these settings have been associated with preschoolers' PA, no studies have examined whether features of the outdoor play and learning environment influence NS preschoolers' PA during care hours.

**Methods:** Data were collected from 16 NS early years centers (EYCs). EYC directors completed the outdoor play and learning component of the Go NAP SACC assessment survey, which included four subscales: outdoor playtime; outdoor play environment; education and professional development; policy. A total of 128 children had valid accelerometry-based PA data. Children's height and weight were measured to calculate body mass index (BMI). Descriptive statistics will be used to describe child demographics, PA behaviour, and Go NAP SACC survey subscales. Pearson product moment correlations will be used to examine relationships between subscales and PA data, and linear regressions to explore relationships between total PA (dependent variable) and survey subscales, adjusting for potential covariates (age, gender, BMI). Anticipated Results: All subscales of the outdoor play and learning environment survey will be significantly related to children's PA during care hours.

**Conclusion:** This study will provide critical insight into the salient outdoor play and learning environment features of EYCs associated with preschoolers' PA during care hours, which can then be amended to better support the healthy growth and development of young children in NS.

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### **Improving Transitions in Care for Children with Medical Complexity and their Families**

Sydney Breneol, Dalhousie University

**Introduction:** Children with medical complexity are a small but resource intensive subgroup within the health care system. The unique medical characteristics of these children place them at greater risk during transitions in care, leading to potential adverse health outcomes and hospital readmissions. The aim of my proposed doctoral research is to determine the prevalence of children with medical complexity in the Canadian Maritimes and explore their experiences transitioning from hospital to home.

**Methods:** To address my first objective, I will use health administrative data to identify the prevalence of children with medical complexity in NS, NB, and PEI over a two-year period. Data will be obtained using discharge abstract data at the IWK Health Centre. To address objective 2, I will employ a case study design to examine the experiences of children with medical complexity and their families as they transition from the IWK Health Centre to home communities in PEI and NB. Case studies will be informed by chart audits and individual interviews with children, parents, and the multidisciplinary team involved with their care.

**Anticipated Results:** Triangulation of both quantitative and qualitative findings will achieve a greater understanding of the hospital to home transition for this vulnerable population. Results from this study will be used to inform patient-oriented health system policies and practice changes.

**Significance:** Ongoing advancements in medical treatments and technologies has resulted in an increased population of children medical complexity. Without a greater understanding of the prevalence of this population and their experience transitioning from hospital to home, health system policy and practice changes will lack relevance and sustainability.

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### **Baby blues and marital issues: Intimate partner violence and postpartum depression**

Nicola Brogan<sup>1</sup>, Hailey Mitchell<sup>1</sup>

<sup>1</sup>, University of Ottawa

**Background:** A spouse who exhibits violent or aggressive behaviour within the home can cause psychological distress for the other partner. Postpartum depression (PPD) is a form of depression women and/or men experience within the first year after childbirth. The purpose of this research is to examine the correlation of a history of domestic violence and the occurrence of PPD in North American heterosexual men and women of reproductive age.

**Methodology:** This literature review was conducted using key search terms such as paternal, domestic violence and postpartum depression. Limitations in language – English only - and year of publication – 1995 onward - were applied. In examining peer-reviewed material, 17 articles were chosen for the purposes of this presentation.

**Results:** It was found that pregnant women who were victimized by domestic violence before and/or during their pregnancy were more likely to exhibit symptoms of PPD after childbirth. Most notably, one of the selected studies found that 84% reported experiencing some form of intimate partner abuse before their pregnancy while 70% reported experiencing intimate partner abuse during. Furthermore, 61% of those women reported postpartum mental health symptoms. In contrast, there is no established evidence proving a correlation between domestic violence and PPD in men.

**Conclusion:** In conclusion, a history of domestic violence and a diagnosis of PPD are positively correlated among North American women. Due to a lack of research, an association between domestic violence and paternal PPD remains undetermined. Therefore, further research is needed to support this association.

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### **Harm reduction among hospital inpatients with injection drug use-associated infective endocarditis**

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**Introduction:** When people who inject drugs are admitted to hospital with infective endocarditis (IE), often their infection is treated but their injection drug use (IDU) is not addressed. In order to identify opportunities to improve care, we aim to assess what harm reduction interventions were offered to hospital inpatients with IDU-associated IE in Halifax from 2012 to 2017.

**Methods:** In this retrospective chart review, we are collecting data on testing for blood-borne infections, referrals to addictions clinicians, initiation of opioid agonist therapy (OAT), access to sterile injecting equipment, safer injecting education, and naloxone prescribing.

**Results:** Chart review is ongoing. 39 charts have been reviewed, identifying 18 patients with IE. Of these, 7 patients (39%) had IDU-associated IE (mean age  $32 \pm 7$  years; 71% women), and 6 of these patients were included in this analysis. All 6 injected hydromorphone. 5 patients experienced opioid withdrawal in hospital, and 4 had ongoing issues with uncontrolled pain. 2 patients used opioids non-medically in hospital, and 1 was suspected of injecting. 4 patients were tested for HIV, 3 for hepatitis C virus, and 5 for hepatitis B virus. 3 patients had prior addictions care, and 1 was already on OAT before admission. 5 patients were offered referrals to addictions clinicians, and 3 initiated OAT in hospital. 2 patients had documented discussions with clinicians about safer injecting practices, and 1 about overdose risk reduction. No patients were offered sterile injecting equipment in hospital (though 1 was found taking alcohol swabs), and none were prescribed naloxone.

**Conclusions:** We are identifying opportunities to improve addictions and harm reduction care for hospital inpatients with IDU-associated IE in Halifax.

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### **The impact of supplementary motor area inhibition on motor imagery-based implicit sequence learning**

Dennis Brown<sup>1</sup>, Kiera O'Neil<sup>1</sup>, Sarah Kraeutner<sup>1</sup>, Shaun Boe<sup>1</sup>  
1, Dalhousie University

**Introduction:** Motor imagery (MI), the mental performance of a motor task, has been shown to be a useful adjunct to physical practice (PP) for motor skill acquisition and functional recovery in post-stroke rehabilitation, especially when PP is not an accessible option. Brain regions involved in MI-based learning have been studied, including the inferior parietal lobe, however more research is needed to better understand its neural substrates. This study seeks to investigate the role of the supplementary motor area (SMA), a brain region implicated in motor learning and performance.

**Methods:** Participants (N=60) will complete an implicit sequence learning (ISL) task via either PP or MI following inhibitory non-invasive brain stimulation to the ipsilateral SMA, or with the coil angled away from the scalp (sham). The amount of participant learning will be assessed via the difference in reaction times (dRTs) between repeated and random sequences.

**Anticipated Results:** It is expected that after inhibition of the SMA, learning of the implicit sequence will be abolished. Specifically, the dRT between the repeated and random sequences will be non-significant in the PP and MI groups receiving actual stimulation, while we expect to see significant dRTs between the repeated sequence and the random sequences in the PP and MI groups receiving sham stimulation, suggesting that learning has occurred.

**Conclusion/Significance:** Our results will demonstrate that the SMA is a brain region critical for learning in both PP and MI. These results will provide a better understanding of the neural networks involved in MI, and more importantly, can provide insight on how brain damage after neurological injury such as stroke can impact on the use of MI in post-stroke rehabilitation.

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### **A process of he said, she said? An exploratory mixed methods study of secondary age stereotype data**

Sara Brushett<sup>1</sup>, Sara Kirk<sup>1</sup>, Brad Meisner<sup>2</sup>

1, Dalhousie University; 2, York University

**Introduction:** With the population living longer than ever before, it is important to understand how the larger social environment represents and reinforces 'aging' in a health and wellness context. Aging is more

than a physical phenomenon, it has also been psychosocially constructed. Age stereotypes are the major driving force behind age-based prejudice and discrimination (ageism). Age stereotypes, particularly negative ones, are shown to influence the social and health behaviours of individuals in an aging population. Like aging, gender is also a psychosocial construct, and it too influences the health and well-being of identifying women and men. The purpose of this study is to explore how age stereotypes and gender intersect and how this interaction may vary across age groups.

**Methods:** Secondary data collected on age stereotypes will be used for this study. Gender and age group membership measures were also included in the previous study. For the proposed study, data will be analysed using an exploratory mixed methods approach including qualitative content and statistical analyses.

**Anticipated Results:** Findings will indicate how age stereotypes are gendered, and if the interaction between aging and gender changes across increasing age groups. A list of popular gendered and ungendered age stereotypes will also be generated.

**Significance:** The shift in population age demographics requires aging and health stakeholders to create supportive and inclusive social environments for current and future aging individuals that is sensitive to and considerate of age and gender. The anticipated results can be used to inform future multi-sectoral work in the collective efforts to avoid representing or reinforcing language that is ageist and/or sexist in an aging context.

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### **Exploring the Benefits of a Program-Specific Camp on Sense of Community in University Undergraduates**

Marisa Buchanan, Dalhousie University

**Introduction:** Camps have commonly been used to achieve educational, therapeutic, and leisure-related goals. At Dalhousie University, first-year Bachelor of Science (Recreation) students are required to participate in an one-night orientation camp known as the Recreation Orientation. This camp is planned and implemented by upper-year Recreation students, and is designed to provide first-year students with an immersive recreation experience where they can get to know their peers and faculty. The purpose of this study is to explore the effects of the Recreation Orientation on sense of community for the first-year Recreation students.

**Methods:** This explanatory sequential mixed-methods study will use quantitative data collected by pre- and post-camp surveys, which will be used to analyze and compare sense of community before and after participation in the Recreation Orientation. Following the Recreation Orientation, qualitative data will be collected through semi-structured interviews to further explore students' perceptions of community.

**Anticipated results:** It is anticipated that this study will support the idea that new university students are able to achieve strong sense of community after taking part in a program-specific, camp-styled orientation, and that this can positively influence their university experience.

**Significance:** Evaluating the effects of the Recreation Orientation may encourage other universities and programs to adopt this style of orientation to provide further social and academic support to students. In turn, this type of program can be used to help to promote mental health on campus, while also increasing university retention.

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### **How do we talk about drinking when we aren't talking about health?: A qualitative systematic review**

Robyn Burns<sup>1</sup>, Dr. Karen Gallant<sup>1</sup>

1, Dalhousie University

**Introduction:** For many, social interactions involving alcohol form an enjoyable part of their leisure life, which can include gatherings, celebrations, cultural events, and sport, as well as leisurely attendance at venues more conventionally associated with drinking such as live music venues, craft microbreweries, pubs, and beer gardens. Despite the prominence of drinking as a form of leisure, public health discourses often frame research on drinking, and less often considered are the opportunities for sociability or community building associated with social drinking. There is a need to look more carefully at how leisure scholars are approaching alcohol use and to consider how these approaches are rooted in conceptualizations of leisure.

**Methods:** Following Saini and Shlonsky's (2009) methods for qualitative systematic synthesis, a total of 17 articles were analysed, with findings synthesized into discrete themes.

**Findings:** This review unpacks how drinking is portrayed in the leisure literature, exploring relationships between drinking and sport and tourism, as well as feminist perspectives.

**Conclusion:** Drawing on the completed review, this poster brings a unique perspective on drinking to the health professions.

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### **Development of a consensus definition and classification criteria for Scleroderma renal crisis (SRC)**

Emily Ann Butler, Dalhousie University

**Introduction:** Scleroderma Renal Crisis (SRC) is characterized by malignant hypertension and acute kidney injury. The absence of a gold standard has hindered our ability to perform research on SRC. The Scleroderma Clinical Trials Consortium (SCTC) SRC Working Group was created to develop consensus classification criteria for SRC. Previously, a scoping review was performed to generate evidence-based items to define SRC (Hoa et al, 2017). This second phase of the project aims to achieve consensus on a core set of items to define SRC.

**Methods:** A Delphi survey using items identified by the scoping review was developed. A panel of experts from the SCTC, European Scleroderma Trials and Research Group, the Canadian Scleroderma Research Group and the Australian Scleroderma Interest Group were invited to participate. The Delphi exercise was performed in 3 rounds. In Round 1, participants were asked to identify omissions and clarify ambiguities. In Round 2, participants were asked to rate the reliability and feasibility of the items using Likert-type scales and to provide comments. In Round 3, participants reviewed the results and comments of Round 2, and were asked to provide final ratings. Items rated as highly reliable and feasible (both median scores  $\geq 7$ ) in Round 3 were selected as the provisional core set of items to define SRC.

**Results:** 216 experts were invited and 99 from 17 countries agreed to participate. Of the 31 items in the survey, consensus was achieved on items pertaining to hypertension, renal insufficiency, proteinuria and hemolysis.

**Conclusion:** This Delphi exercise allowed the generation of a provisional core set of items to define SRC. Future data-driven phases of the project are planned to validate this core set.

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### **Iron chelation to reduce inflammation in cystic fibrosis epithelial cells**

Alexa Caldwell<sup>1</sup>, Dr. Christian Lehmann<sup>1</sup>

1, Dalhousie University

**Introduction:** Iron has a key role in maintaining the metabolism of microorganisms and in modulating innate microbial immune defenses through the catalysis of reactive oxygen species. Importantly, it has been



documented that iron homeostasis is markedly dysregulated in cystic fibrosis, a genetic disease marked by a chronic but ineffective immune response. The excessive production of pro-inflammatory cytokines and oxidants in cystic fibrosis is a principal cause of tissue damage and that leads to the remodelling of the airways. As such, this investigation sought to determine if the chronic immune activation in cystic fibrosis could be attenuated through the use of DIBI, a novel iron chelator. Furthermore, the obligate cellular requirement for iron underscores the need to determine the dosing at which chelation could be beneficial.

**Methods:** An in vitro model of epithelial CF15 cells was used to determine the immunomodulatory effects of DIBI at varying doses. The cells were grown in cell culture until fully polarized and stimulated with lipopolysaccharide to mirror a bacterial challenge. Simultaneously, they were administered DIBI at doses of 200, 100, 50 and 25 . The modulation of the inflammatory response was quantified via production of IL-6 and measured by an ELISA assay.

**Results:** It was found that only DIBI administration at doses of 200 or 100 reduced the secretions of IL-6, whereas the doses of 50 and 25 were found to be pro-inflammatory.

**Conclusion:** These results suggest a dose-dependent functionality for DIBI in which it may act in an immuno-surveillant role for dysregulated iron homeostasis that triggers immune responses at lower doses, and as an active chelator that reduces the catalysis of reactive oxygen species at a higher dose.

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### **Measuring Perioperative Distress in Children with Autism Spectrum Disorder**

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1, Dalhousie University; 2, IWK Health Centre

**Introduction:** The perioperative experience can be distressing for children. Between 40% and 50% of typically developing children experience perioperative distress. Whereas the behavioral manifestation of distress has been well characterized in typically developing children, similar systematic descriptions have not been made in children with autism spectrum disorder (ASD; a heterogeneous neurodevelopmental disorder). This study aimed to describe the behavioral manifestation frequency of perioperative distress in children with ASD.

**Methods:** Participants in this study were 55 parents and their children with ASD undergoing outpatient surgery with general anesthesia. Parents completed the Autism Perioperative Stoplight Distress Scale—a novel measure—to assess their children’s distress at four time-points (in the preoperative holding area, when the child was taken to the operating room, at induction, and in recovery).

**Results:** Results indicated that 89.1% percent of children with ASD experienced distress, with 38.2% of children experiencing extreme distress at one or more time points. The most common distress behaviors reported by parents included: fearful, distressed vocalizations, and resistant.

**Conclusions:** Children with ASD frequently experienced perioperative distress. Parents reported behaviors that are not typically included in assessment scales for children without ASD (e.g., repetitive behaviors, self-injurious behaviors). Many behaviors were reported across all levels of distress, suggesting that parental input or individualization will be needed to interpret behavioral observations if they are to be used in future studies. This is the first study to systematically examine perioperative distress behaviors in children with ASD.

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### **Age and Changing Risk Factors in Suicide Risk Assessment**

Gillian Canvin, University of Guelph

**Introduction:** Diagnostic assessment of suicide risk is one of the most challenging issues facing acute care hospitals. This is mainly because available standardized suicide risk assessments (SRAs) have very high false

positive rates, making them inefficient for triaging and treating patients in the busy hospital setting. Synthesizing research on current SRAs, this text argues for the use of age as a way to understand and group changing risk factors in a population and for the use of age-specific SRAs in acute care. Particular attention is paid to modifiable risk factors, like social isolation and ongoing bullying and assault. This paper showcases Canada as a country in need of a standardized national guideline for reducing suicide in and out of acute care hospitals.

**Methods:** The text reviews papers on general and specific high-risk factors in youth (under 20), adult (those 20 – 60) and senior populations (those 60+), as well as currently available SRAs and their efficacy in different groups.

**Results:** In youth, specific factors include bullying and assault in school or at home. Substance abuse and divorce are high-risk factors in adult and senior populations. Finally, seniors have a higher risk associated with negative perceptions of health and loneliness. Some currently available suicide risk assessments do take age into account. Notable examples of this are the Geriatric Suicide Ideation Scale and the Tools for Assessment of Suicide risk's youth-specific tests.

**Conclusions:** By using more age-individualized SRAs, with selection aid from a dichotomous key tool, we might improve accuracy and therefore reduce strain on acute care hospitals when using an SRA on patients.

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### **Development of an Intervention to Improve Sexual Health Service Use Among University Students**

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1, Dalhousie University

**Introduction:** University undergraduate students are within the highest risk population for acquiring sexually transmitted infections. However, the rates of sexual health service utilization among this population remain low. The aim of this three-phased study was to use the Behaviour Change Wheel (BCW) to design an intervention to improve sexual health service use among university students.

**Methods:** In phase one, we conducted a secondary analysis of online survey data from Dalhousie and Acadia Universities to describe the pattern of undergraduate students' use of sexual health services. In phase two, we conducted focus groups and interviews with students, health care providers, and administrators at Dalhousie and Acadia Universities to identify barriers and enablers to student use of sexual health services. In phase three, we held stakeholder consultation meetings to identify intervention content.

**Results:** A total of 2,625 female students and 1,074 male students were included in the secondary analysis. Only 22% of female students and 8% of male students had ever accessed sexual health services at their university health centre. Barriers and enablers to sexual health service use included: knowledge and awareness of sexual health services, accessibility of services, peer influence, and privacy and confidentiality. A list of 15 behaviour change techniques were identified as relevant to include in an intervention to improve sexual health service use.

**Conclusions:** This study details the use of the BCW to develop an intervention aimed at improving university students' use of sexual health services. The BCW provided a useful framework for integrating multiples sources of data to inform the theory- and evidence-based intervention design process.

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### **The Impact of Therapeutic Taping on the Kinematics of the Lower Extremity while Running**

Dominique Cava<sup>1</sup>, Dr. Paolo Sanzo<sup>1</sup>, Dr. Derek Kivi<sup>1</sup>

1, Lakehead University

**Introduction:** Overpronation is often cited as a common misalignment of the calcaneus resulting from flattening of the medial longitudinal arch (Luque-Suarez et al., 2014). Flattening of the arch will alter the alignment of the lower extremity that may result in an overuse injury. Hyland et al. (2006) suggested that taping may control the position and alignment of the calcaneus to correct foot pathologies associated with overpronation. Therefore, the purpose of this research study is to determine the effect of Kinesio Tape® and Leuko Tape® on the kinematics of the lower extremity while running.

**Methods:** Non-injured male and female participants (n=20) between the ages of 18 and 25 years will be recruited for this cross-sectional study. Each participant will run with a Leuko Tape®, Kinesio Tape®, and no tape condition where tape is applied to their right calcaneus. Lower extremity kinematics will be analysed to determine how each type of tape may alter their running stride.

**Anticipated Results:** Decreased peak hip flexion and ankle dorsiflexion at initial contact and maximum knee flexion are expected with the application of Leuko Tape®. A decrease in peak femoral internal rotation and knee valgus is also expected due to the effect of applying a rigid tape to the calcaneus. Finally, the application of Leuko Tape® may increase stiffness at the ankle and Kinesio Tape® may increase tension in the plantar fascia that will decrease dorsiflexion at toe off.

**Significance:** It is anticipated that alterations in the lower extremity will reflect lower limb misalignment that may be the result of overpronation. After this study is completed, knowledge will be gained regarding how the application of athletic tape will affect the lower extremity kinematics while running.

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### **The Effect of Implicit Age Stereotype Priming on a Reaching Task**

**Alyssa Chilco<sup>1</sup>, Jennifer Swansburg<sup>1</sup>, Heather Neyedli<sup>1</sup>, Brad Meisner<sup>2</sup>**

1, Dalhousie University; 2, York University

**Introduction:** The purpose of this study is to examine whether change occurs in older and younger adults' upper limb aiming movements following implicit priming of negative or positive age-related stereotype words. This study will involve two conditions; blocked (all positive/all negative words) and variable (alternating positive and negative words).

**Methods:** Participants will consist of forty males and females from two age groups; twenty individuals in the 18 & 34 age range and twenty individuals in the 65+ age range. All participants will take part in a reaching task using a touch-screen computer. Movement speed and reaction time will be measure using an Optotrak Certus System.

**Anticipated Results:** It is hypothesized that the speed of participants' movements will reflect stereotype-congruent patterns; movement speed will be slower following negative stereotype words and faster following positive stereotype words. It is also hypothesized that the effect of priming on movement speed may not be as great during the trial-by-trial condition.

**Significance:** This research is necessary for the promotion of positive and healthy attitudes towards aging. By examining the negative effects that age-related stereotype words have on movement, we hope to encourage individuals to adopt a more positive outlook on aging and to mitigate the presence of negative age-related stereotypes.

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### **MAiD for patients with ID: Does supported decision-making enhance its ethical permissibility?**

**Meghan Chisolm**, Dalhousie University

**Introduction:** With the 2016 Canadian legislation of medical assistance in dying (MAiD), concerns

regarding its appropriate applications are prominent. A significant worry is that certain individuals are more vulnerable to inappropriate use of MAiD, including persons with intellectual disability (ID). Specifically, this population is identified as being vulnerable to having MAiD completed without meeting the criteria for informed consent. While some argue that MAiD ought to be prohibited for persons with ID, I investigate whether some individuals with ID can appropriately request MAiD without risking inappropriate use by others.

**Methods:** A review of the literature is completed, including policy and perspectives pertinent to MAiD and intellectual disability, as well as the intersections of mental health-based MAiD, MAiD for mature minors, and the use of supported decision-making in other health-related decisions. The research is analyzed through the lens of relevant ethical principles, ultimately finding a balance amongst competing principles. **Results:** The research identifies unique concerns for individuals with ID requesting MAiD (individual vulnerability concerns) and the impact of permitting MAiD for persons with ID on the overall population of persons with ID in Canada (collective vulnerability concerns). Using the practice of supported decision-making (SDM) a balance is proposed amongst these ethical concerns.

**Conclusions/Significance:** It is concluded from the findings that persons with ID should not necessarily be precluded from the legislation, as an ethically permissible paradigm under the current MAiD legislation and SDM practices is possible. The findings may be useful in the development of ethics consultation tools for such cases.

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## **Mechanical efficiency and changes in cardiorespiratory response during cadence dependant exercise**

Luke Demetre, Dalhousie University

**Introduction:** Increases in heart rate, respiratory responses and decreases in the mechanical efficiency of movement has been shown when increasing the cadence at the same power output in both arm crank and lower limb cycling. Our study aims to investigate if the increased cardiorespiratory responses were due to other factors, besides the decrease in mechanical efficiency.

**Methods:** Healthy participants, male and female, ages 18-30 will be subject to two bouts of an incremental exercise protocol of arm cranking (45 and 90 rpm). Following baseline measurements (height(m), weight(kg), heart rate and ventilation), the participants will start arm cranking with no load (0 watts) with increments of either 15 or 30 watts following each stage of 3 minutes. The participants will be asked to maintain a cadence of either 45 or 90 rpm. Throughout the test measurements of heart rate (electrocardiogram), oxygen consumption (l/min), ventilation (l/min) and respiratory exchange ratio, sampled at 10 sec intervals. The test will be terminated when the participant withdraws or unable to maintain the target cadence. Data will compare metabolic rates at the different RPM at a using heart rate as a control. Using a repeated measures ANOVA, significance is set at  $p < 0.05$ .

**Anticipated Results:** It is expected that mechanical efficiency will be smaller for the higher cadence condition. We also anticipated that the decrease in mechanical efficiency cannot explain fully the increase in Heart Rate associated with a higher cadence of arm cranking.

**Significance:** The results from this study will increase our understanding of the factors associated with cardiorespiratory responses to arm cranking.

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## **Range of Motion, Strength Differences and the Maximum Reach Envelope with Total Rotator Cuff Tears**

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**Introduction:** Reach envelopes are measures of the area (volume) in which a seated or standing human can reach. The objective of this paper is to relate clinical range of motion (ROM) and strength measures to the MRE between asymptomatic, age-matched to participants with full Rotator Cuff Tears (RCT).

**Methodology:** Clinical ROM and strength measures were taken, utilizing standard clinical methods on 11 asymptomatic and 15 RCT participants. Flexion/Extension and ad/abduction values were extracted from MRE. The volume was converted to spherical coordinates and segmented to calculate median R (length) values.

**Results:** All ROM values for asymptomatic were larger than their symptomatic cohort, as shown in Table 1. Strength measures (Table 2) differed between the two groups.

Table 1: Mean (SD) Range of Motion Measures (Degrees)

Flexion Abduction Hor. Flexion

Group Active CPSAM Passive Active CPSAM Passive CPSAM

Asymptomatic 175 (3) 150 (46) 176 (5) 161 (17) 138 (20) 168 (12) 196 (20)

Symptomatic 133 (36) 89 (30) 153 (6) 105 (37) 112 (22) 131 (13) 165 (21)

Table 2: Mean (SD) Strength Measures (Kgs)

Group Abduction External Rotation Internal Rotation

Asymptomatic 14 (3) 10 (2) 12 (3.7)

Symptomatic 7 (5) 5 (4) 7 (5)

There are significant differences between the groups for each load condition, with the reach length being less for symptomatic participants (approximately 4%).

**Discussion:** Symptomatic participants have difficulty reaching above shoulder height, and across the body. The addition of a 1.0kg handheld load reduces the MRE of both groups.

**Conclusions:** There are differences between ROM, strength and reach capabilities for persons with RCT.

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## **Assessing Diversity and Cultural Competence Among Dietetic Students in Atlantic Canada**

Gurneet Dhami, Mount Saint Vincent University

**Introduction:** In Canada, registered dietitians position themselves as nutrition experts that serve diverse client and patient populations. However, the profession has yet to address the lack of racial and ethnic diversity among its members (Hack, Hekmat & Ahmadi, 2015). Although no reliable national-level demographic data exists on the racial and ethnic makeup of the dietetic profession in Canada, anecdotal evidence and a small, growing pool of research on dietetic students indicate that the dietetic profession is largely Caucasian (Siswanto, Brady, & Gingras, 2015; Brady et al., 2012). It may be that the seeming lack of racial and ethnic diversity among Canadian dietitians stems from the competition for internship positions. The perspectives of students of colour and ethnic minorities are invaluable in understanding what, if any, systemic barriers may exist. However, research has yet to gather the experiences of students of colour, which creates a knowledge gap and disconnect between individuals and the connection to the profession.

**Methods:** A mixed-methods design will collect demographic data from students enrolled in all four undergraduate dietitian training programs in the (University of Prince Edward Island, St. Francis Xavier, Mount Saint Vincent, and Acadia) Atlantic region. Additionally, 10 students of colour will be followed up for in-depth, semi-structured interviews. Anticipated

**Results:** It is anticipated that the interviews and demographic data will shed light on diversity recommendations to consider for strengthening the profession.

**Significance:** To promote critical perspectives of race and from students of colour and ethnic minorities' dietetics education, with potential to increase diversity in the profession.

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## **The Perceived Mental Health of Elderly Immigrant Punjabi Women Living in Nova Scotia**

**Sandeep Dhillon**, Mount Saint Vincent University

**Introduction:** The elderly population in Canada has been steadily increasing over the past 40 years (Statistics Canada, 2016), and by 2036, 25% of Canada's population will be 65 years of age or older. This increasing aging population is expected to have a major impact on the economy, society, and health care system over the next 25 to 30 years (Statistics Canada, 2016). Because Canada is recognized as a country that welcomes thousands of immigrants, the proportion of immigrants who are aged 65 years and older has also increased over the past decades. Of the overall older immigrant adults, the majority of them are from South Asia in Canada (Statistics Canada, 2016). The rise of Punjabi immigrants in Canada has led to the need for research that examines the mental well-being understood by elderly immigrant Punjabi women.

**Methods:** As critical qualitative research, this study is grounded in the social determinants of health framework. Participants will need to be Punjabi women who are over the age of 65 and must be living in Canada for a minimum of 5 years.

**Anticipated Results:** The effect of this research is to potentially help other marginalized and oppressed women from social isolation, as well as create a new dialogue for health care practitioners when dealing with elderly South Asian patients.

**Conclusion:** This research is critical and worth examining because of the new immigrants that are resettling in provinces like Nova Scotia. The current body of literature largely focuses on the mental health of Canadians and more specifically, Canadian women, but there is a lack of research on the perceived mental health of elderly Punjabi women.

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## **Knowledge acquisition after Helping Babies Survive training in Tanzania**

**Justine Dol**<sup>1</sup>, Dr. Marsha Campbell-Yeo<sup>2,3</sup>, Dr. Douglas McMillan<sup>3</sup>, Dr. John C. Leblanc<sup>3</sup>, Dr. Gail Tomblin<sup>2</sup>, Dr. Angelo Nyamtema<sup>4</sup>, Dr. Janeth Bulemela<sup>4</sup>, ASDIT Team<sup>3,4</sup>

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**Introduction:** Helping Babies Survive (HBS) is a suite of programs consisting of Helping Babies Breathe (HBB), Essential Care for Every Baby (ECEB) and Essential Care for Small Babies (ECSB). It aims to eliminate preventable newborn deaths through skill-based learning for healthcare providers in low-resource areas. As part of 'Accessing Safe Deliveries in Tanzania' aimed at strengthening human resources for neonatal care, this study compared pre- and post-knowledge after HBS training in Tanzania.

**Methods:** Training in HBS was provided to Tanzanian doctors, nurses and midwives in a 3-day workshop. Pre- and post-knowledge, using standardized multiple-choice questions, were collected for HBB (n=40), ECEB (n=40), and ECSB (n=16). Knowledge assessments required >80% score to pass. A paired t-test was used for analysis.

**Results:** There was a significant improvement in knowledge for HBB (pre=87.1% pass, post=96.6% pass), ECEB (pre=82.2% pass, post=95.3% pass), and ECSB (pre=79.2% pass, post=92.9% pass). After training, all HBB and ECEB items were correctly identified by 80% or more of participants. Participants struggled to identify correct responses on five ECSB items after training: frequency of nasogastric tube feeding (28% incorrect), average daily weight gain (32% incorrect), daily increase of feeding volume (25% incorrect), cues for readiness for breastfeeding (32% incorrect), and timing of ongoing assessments (44% incorrect).

**Significance:** HBS training improves HBB, ECEB, and ECSB knowledge, however there are areas where additional training for small babies may be required. Further considerations of these questionnaire items as well as follow-up assessment is needed to evaluate knowledge maintenance and effective implementation.

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### **Biohacking the way from patient to experimenter**

Caitriona (Katie) Douglas, Dalhousie University

**Introduction:** Biohacking is an emerging lifestyle trend where people take scientific research materials, methods, and technology and apply it to their own life in order to achieve a desired health outcome. Some people engage in biohacking in order to attempt to cure a condition like HIV while others engage in biohacking in attempt to become smarter or achieve their ideal body type. To some extent, many of the current social media fitness and wellness gurus are encouraging their followers to become biohackers and this trend is only growing prominent with the emergence of fitness trackers. While the trend can pose health risks it also offers a chance to explore current medical experimental paradigms and may even offer patients a chance to become an active experimenter rather than a passive research subject.

**Methods:** Exploring two case studies of biohacking and the challenges they pose to current experimental models.

**Conclusions/Significance:** This presentation is about exploring experimental possibilities. It will explore the benefits and negatives of developing medical and experimental models that permit biohacking including the possibilities for public outreach and education, emergence of medical programs involving citizen scientists, negative health consequences like orthorexia, and the development of a potentially more naturalistic experimental model. This is intended to be a thought experiment that challenges future medical researches to think about the future clinical and experimental implications of fitness and health tracking technology and limitless public access to scientific and medical publications.

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### **Extracellular matrix supports epithelial papillae that instruct direct bone development**

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1, Department of Medical Neuroscience, Dalhousie University; 2, Department of Biology, Mount Saint Vincent University

**Introduction:** The formation of direct developing bones, such as the skull roof, is still poorly understood. Similar to the skull roof, scleral ossicles (bones in the sclera of the eye) provide an excellent model to investigate the developmental processes underlying direct bone development. Scleral ossicles in the chicken (*Gallus gallus*) are a series of 13-15 bones that overlap to constitute a single ring of bone. Each ossicle is induced by overlying regions of the thickened conjunctival epithelia, which are known as conjunctival papillae and can be considered placodes. The mesenchymal cells below these thickenings are directed to differentiate into osteoblasts and deposit bone matrix of the ossicles. Previous research from our laboratory shows that hydrocortisone treatment affects ossicle induction by altering vasculature and the expression of some extracellular matrix (ECM) components.

**Methods:** This research aims to further explain the mechanism by which hydrocortisone affects conjunctival papillae development. Two hydrocortisone injection time-points in the chicken embryo (previously determined as stages HH29 and HH30) were adjusted in a step-wise manner.

**Results:** Delivering the injections 22 hours apart inhibits 13/13 conjunctival papillae in 100% of embryos (n=10), indicating cell signaling is active prior to the first papilla becoming visible at HH29.

**Significance:** This study has implications for elucidating the genetic mechanisms underlying conjunctival

papillae development, direct developing bone induction, and how the ECM supports the development of these structures. Additional insight into factors that regulate bone development of the skull and face could benefit our understanding of several craniofacial abnormalities, such as craniosynostosis and cleft palate.

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### **PGZ to improve oncologic safety & reconstructive outcomes of lipofilling for post-mastectomy defects**

Anton Dugandzic<sup>1</sup>, Dr. Michael Bezuhly<sup>2</sup>

1, Department Microbiology & Immunology; 2, Dalhousie University

**Introduction:** For many breast cancer patients, reconstruction is an integral part of their healing. Plastic surgeons are using the lipofilling technique to replace the breast tissue lost due to cancer therapy. This involves liposuctioning fat, and injecting it at the mastectomy site. The main drawback is unpredictable reabsorption of injected fat, leading to incomplete reconstruction and repeat procedures. Research has shown this can be avoided by adding adipose-derived stem cells (ASCs), to the injected fat. There is evidence ASCs may help breast cancer cells left behind after surgery to grow, leading to recurrence. Drugs used to treat type 2 diabetes, thiazolidinediones (TZDs), can increase fat deposits in patients, and to slow breast cancer cell growth.

**Method:** We will examine whether a TZD called pioglitazone (PGZ) can make adding ASCs to fat safer for breast reconstruction. We will inject breast cancer cells that fluoresce into mice to produce a breast tumour. We will also inject purified fat with or without extra ASCs to mimic lipofilling. An integrated optical imaging tomography scanner will be used to watch tumour cells and ASCs grow inside live mice treated with or without PGZ. We will also perform qPCR on PGZ-treated and untreated ASCs and adipocytes to determine the effect of PGZ on the expression of genes related to adipogenesis.

**Anticipated Results:** Our theory is PGZ treatment will protect purified fat from reabsorption, but will also prevent ASCs from stimulating growth of remaining tumour cells injected to mimic residual disease, and increase expression of proadipogenic genes.

**Conclusion:** If this proves to be the case, TZDs could lead to longer survival and better quality of life for women undergoing reconstruction as part of their breast cancer care.

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### **Socio-demographic trends and lived experiences with teenage pregnancy in Saint John, New Brunswick**

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1, Dalhousie Medicine, New Brunswick; 2, Department of Pediatrics, Saint John Regional Hospital

**Introduction:** The current research project is investigating themes associated with adolescent pregnancy among a cohort of women living at a transitional housing facility in Saint John, New Brunswick.

**Methods:** We conducted semi-structured qualitative interviews with current residents of the facility in order to gather themes from the participants regarding their lived experience of teenage pregnancy. The secondary investigation has a complementary role and includes a compilation of descriptive statistics of the women who have accessed this facility since its incorporation. We are currently assessing the presence of trends within this cohort regarding multiple variables, including but not limited to age, socioeconomic status, family and personal history, and education.

**Anticipated results:** No specific themes have been anticipated for the interviews, however, we do hypothesize that many of the interviews will have themes of family conflict and instability, low socioeconomic status, drug/alcohol use, poor academic performance, and lack of parental involvement. We



hypothesize similar trends will be seen in the analysis of the demographic data of the entire cohort of women. **Significance:** This research will be of both practical use to the organization in question and other such organizations, and is warranted due to a lack of current investigations into the factors influencing relatively high rates of teenage pregnancy in this region.

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### **The Effects of Body Position during a Lateral Patient-Handling Task: A Biomechanical Analysis**

Lauren Ead<sup>1</sup>, Sophie Froud<sup>1</sup>, Dr. Janice Moreside<sup>1,2</sup>

1, Department of Kinesiology, Dalhousie University; 2, School of Physiotherapy, Dalhousie University

**Introduction:** Healthcare workers are at a risk of low-back pain and injury due to the repetitive and high loaded tasks they perform. Training guidelines have been implemented in healthcare facilities with the goal of reducing the risk of injury. The purpose of this study is three-fold: 1) establish the effects of trained position during a lateral simulated patient transfer on low-back muscle activation, pulling force, and ratings of perceived exertion; 2) establish the effects of the right or left foot forward while using a trained position; and 3) establish the validity of EMG as a representation of perceived exertion during lateral transfers.

**Methods:** Right-handed female participants between the ages of 18-25 years will be recruited for this study. Participants will be asked to laterally transfer simulated patient weights on a standard hospital bed using a slide sheet. Participants will complete 2 conditions using a self-selected technique, then be trained using accepted patient handling guidelines. Four conditions will then be completed using the trained technique, alternating between right and left foot forward. Electromyographic data will be collected throughout the trials on latissimus dorsi, quadratus lumborum, and erector spinae bilaterally. Pulling forces will be collected using a force transducer. Ratings of perceived exertion will be manually assessed using a Borg CR10 scale.

**Anticipated Results:** It is anticipated that trained position will decrease muscular activity and RPE. Also, that left foot forward will result in lower muscle activation and RPE compared to right foot forward, and that EMG and RPE will be strongly correlated.

**Conclusion:** This study will increase knowledge on the effects of body positioning during lateral patient handling tasks.

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### **Progressivity and catastrophic effect of out-of-pocket payments for healthcare in Canada: 1998-2014**

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1, School of Health Administration, Dalhousie University

**Introduction:** Equity in healthcare is a major policy objective of the Canadian healthcare system, and “reasonable” access to healthcare without financial or other barriers is legislated in the Canada Health Act, 1984. Out-of-pocket (OOP) expenses by Canadian households account for a substantial share of total healthcare expenses (15%). This study, for the first time, examines progressivity (equity) and catastrophic effects of OOP expenses in Canada over time.

**Methods:** This study uses Statistics Canada’s Survey of Household Spending (SHS) to measure the progressivity (the contribution of households from their income to OOP payments increase as their incomes increase) and catastrophic effect of OOP expenditures for healthcare services in Canada over the period 1998 to 2014 inclusive. The Kakwani Progressivity Index (KPI) was used to measure the progressivity of OOP payments for healthcare for each year. The catastrophic effect of OOP payments was calculated using thresholds of 3%, 5%, 10% of disposable income.

**Results:** The KPI indicated that OOP payments are a regressive source of healthcare funding in Canada and trended toward more regressivity over the study period. This indicates that the distribution of OOP expenses in Canada is not equitable and the contribution of households from their income to healthcare as OOP

payments decreases as their incomes increase. The results suggest catastrophic OOP payments for healthcare primarily affect low-income and rural Canadian households.

**Conclusions:** Direct OOP expenses for healthcare impose a significant financial burden for low-income and rural households in Canada. Policies to enhance financial risk protection among low-income and rural households are required to improve equity in healthcare financing in Canada.

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### **Age- and Sex-Based Differences in Overload Damage to Human Tendon Collagen**

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<sup>1</sup>, School of Biomedical Engineering, Dalhousie University

**Introduction:** In recent years, about a quarter of Canadians suffered from chronic or acute soft tissue injuries. In a society that is physically active into geriatric life, these injuries are increasingly prevalent. Soft tissue injury differences between sexes seem to be related to anatomical location, age, sex hormone concentrations and differences in neuromuscular balance. Even within the same sport, sex factors into the soft tissue injuries that occur. In women, ACL injuries are prevalent whereas men are more susceptible to Achilles tendon injuries. The ongoing research is a rare human-based comparative study between female and male individual's tendons.

**Methods:** Human sartorius tendons were received from the Regional Tissue Bank, harvested from individuals spanning four decades of age: 20-60. For each paired set of tendons, one is subject to uniaxial mechanical overload that simulates damage during injury. The induced structural damage is observed at the nanometer scale using scanning electron microscopy. The contralateral tendon is used for thermomechanical testing to evaluate the thermal stability of the tendon collagen, the primary protein in tendon.

**Anticipated Results:** Within this study, two variables are considered: age and sex. With the tendons' cross sectional area normalized, it is expected that there will be significant differences between sexes, with female tendons exhibiting higher ductility and lowered thermal stability. With increasing age, it is expected that sex-based differences will diminish post-menopause.

**Significance:** Understanding how soft tissue injury occurs is important to improved clinical treatment and healing. This research will significantly contribute to the limited modern literature on sex-based differences in soft tissue injuries.

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### **A Microbial Paradox: Anti-Inflammatory Activity of a Bacterial Protein in Inflammatory Bowel Disease**

Emma Finlayson-Trick<sup>1</sup>, Jessica Connors<sup>2</sup>, Scott Whitehouse<sup>2</sup>, Andrew Stadnyk<sup>1,2</sup>, Johan Van Limbergen<sup>1,2&3</sup>

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**Introduction:** Bacteria are traditionally defined as antagonistic, however within a host, microbial behaviour can morph between pathogenic and beneficial. Bacteria that promote homeostasis do so in part by encoding proteins that mimic host cell function. In both human and bacterial cells, heat shock proteins (Hsps) stabilize other proteins during stressful cellular events. Hsp90 is one of the most important Hsps. HtpG is the bacterial equivalent of Hsp90. Previously, we identified HtpG as the strongest microbial signal associated with intestinal homeostasis in our microbiome analysis of pediatric-inflammatory bowel disease-patients. Furthermore, we observed that healthy controls had higher abundances of HtpG than IBD-patients. These data suggest a protective role for HtpG in the context of IBD, but how HtpG promotes a healthy human gut is not known.

**Purpose:** To characterize HtpG modulation of immune function in intestinal epithelial cells.

**Methods:** Pro-inflammatory cytokine concentration (e.g. CXCL8) was measured using enzyme-linked immunosorbent assay of culture supernatants from human cell lines (HT-29, T84, CaCo2, and HEK293T) treated with titrated doses of rHtpG or media alone for 24 hours.

**Results:** CXCL8 expression increased, in comparison to the media control, approximately 10-fold when treated with 2 µg/ml rHtpG, and 5-fold when treated with 10 µg/ml rHtpG.

**Conclusions:** We found that lower concentrations of bacterial HtpG, as observed in pediatric-IBD-patients, resulted in increased pro-inflammatory cytokine expression in intestinal epithelial cells. Understanding the impact of bacterial HtpG on intestinal immune responses could provide important mechanistic insight into how HtpG may promote sustained remission following enteral nutrition therapy.

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### **Exploring mindfulness meditation and unhealthy weight control in adolescents: A scoping review**

Megan Flynn<sup>1</sup>, Dalhousie University

**Introduction:** Engaging in unhealthy weight-control behaviours are a prevalent health concern among North American adolescents. Adolescents could benefit from incorporating mindfulness meditation as a technique to reduce negative internalized feelings that trigger engaging in unhealthy weight-control behaviours, such as emotional eating. Techniques such as mindfulness meditation are gaining support and further recognition as an aide for treatment of disordered eating and unhealthy weight-control behaviours related to negative internalized feelings about body size

**Methods:** This scoping review will be following Arksey and O'Malley methodological framework. Data will be retrieved from articles from online databases such as, PubMed, CINAHL, NovaNet, PsychInfo, Scopus, and Google Scholar based on keywords relevant to the study subject.

**Anticipated results:** The anticipated results are to identify further gaps in the available literature and advocate for further studies on this subject to fully understand mindfulness meditation and related interventions associated with behaviours towards disordered eating.

**Conclusion/ significance:** Canadian adolescents are an understudied population in this subject. Support for further research related to exploring mindfulness meditation and unhealthy weight control behaviours is emerging. The significance of the scoping review is to address gaps in current literature and research on mindfulness meditation and unhealthy weight-control behaviours focused on youth and adolescents

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### **Comparison of impact mitigation in ice hockey goaltender upper body personal protective equipment**

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1, School of Health and Human Performance. Dalhousie University

**Introduction:** Upper body injuries comprise 32% of the injuries that ice hockey goaltenders endure in a season. These values may be subject to change, as the National Hockey League (NHL) is investigating rule changes that will decrease the size of the goaltender's chest and arm equipment. The objective of this research project was to test the safety of the new chest and arm protector that meets the new NHL regulations compared to two currently used NHL chest protector models; one highly protective and the other highly mobile.

**Methods:** This repeated measures experiment recorded equipment-body peak interface forces using a Tekscan pressure sensor located directly over the sternum of a mannequin. Three shots at 4 speed control options (total of 12 shots) were directed toward the sternum of each equipment condition. Two high-speed cameras, located superior and sagittal, recorded all impacts to quantify approach velocity. A one-way repeated measures analysis of variance with Bonferroni post-hoc analysis was performed to determine

differences in peak interface forces between the equipment conditions.

**Results:** There was a significant main effect of normalized peak impact force (normalized to approach velocity) between the equipment conditions. Post-hoc analysis revealed that the new chest protector had significantly larger normalized peak interface forces (26.95 +/- 10.05 N/m/s) compared to both the highly mobile (14.16 +/- 3.41 N/m/s) and the highly protective (8.57 +/- 2.04 N/m/s).

**Conclusion:** This study identified that the prototype chest protector that meets the new NHL sizing restrictions does not mitigate puck impacts to the sternum as effectively as the currently used professional models.

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### **Influence of Mattress Immersion Properties During Lateral Patient Transfer: A Biomechanical Analysis**

Sophie Froud<sup>1</sup>, Lauren Ead<sup>1</sup>, Dr. Janice Moreside<sup>1,2</sup>

1, Department of Kinesiology, Dalhousie University; 2, School of Physiotherapy, Dalhousie University

**Introduction:** Patient handling tasks (PHT) are a key contributor to the development of low back pain (LBP) in nurses. The incidence of LBP is predicted to increase due to the rise in obesity. Typically, hospital mattresses are composed of polyurethane foam but obese patients are placed on specialized mattresses. No previous research has examined the effects on nurses during PHT using various mattress types. The purpose of this study is to determine how different mattress immersion properties affect muscle activation, force production, and ratings of perceived exertion (RPE).

**Methods:** Fifteen females will participate in a repeated-measures experimental study in which biomechanical measures and perceptions of effort will be collected. All participants will complete twelve trials of a lateral patient handling maneuver that differ in terms of simulated patient weight and mattress type. EMG and force transducer data will be collected as representations of pulling force and low back muscular activity and pulling force, respectively, during each maneuver. Participants will rate their perceived exertion during each maneuver and complete a post-experimental survey, rating each of the maneuvers in terms of low back discomfort and feasibility. EMG and force transducer data will be collected using custom software and processed using MATLAB®. Data analysis will be performed using SPSS®.

**Anticipated Results:** Force and EMG will be higher when using 95 kg and the TheraRest Perimeter Plus™ Mattress Replacement System. RPE will be higher with 95 kg.

**Significance:** There is no previous research that has examined the potential implications to nurses when performing PHT on these mattresses.

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### **End-of-Life Care Expectations and Experiences of Older Gay, Bisexual, and Men who have sex with Men**

Kirk Furlotte, Department of Health Promotion, Dalhousie University

**Introduction:** Older gay, bisexual, and other men who have sex with men (gbMSM) face unique challenges in relation to end-of-life (EOL) care planning. Additional to age-related health issues, gbMSM have limited involvement with healthcare due to discrimination and stigma related to the assumption that people are heterosexual and anything else is abnormal (heterosexism).

**Methods:** Focus groups were held at research sites across Canada (Vancouver, Edmonton, Toronto, Montreal, and Halifax) with older lesbian, gay, bisexual, transgender, queer, intersex, two-spirited (LGBTQI2S) adults and service providers. Each focus group was facilitated by members of the research team using a semi-structured question guide. This project will involve subset analysis of the transcripts of gbMSM groups. Data will be thematically analyzed employing descriptive qualitative methodology. Analysis includes labelling barriers and facilitators older gbMSM face in EOL planning and care.

**Anticipated Results:** Older gbMSM are marginalized in healthcare through heterosexism, excluded in LGBTQI2S communities due to ageism, and experience shrinking support networks from the effects of aging. Major themes and issues will be mapped to an inverted socioecological model designed for developing health promotion interventions. This model centers policy as the starting point for interventions. Recognizing this population's unique needs can help reduce barriers to healthcare access and decrease healthcare inequities they face.

**Significance:** Limited research has been conducted on the holistic approach on EOL for older gbMSM from a Canadian perspective. Little research has focused on health promotion and has not mapped the needs of older gbMSM to a model that would help spur solutions to their identified issues.

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### **An Integrative Review of Mentoring for Black Students in Nursing**

Kalkidan Gebre<sup>1</sup>, Keisha Jeffries<sup>1</sup>

1, Dalhousie University

**Introduction:** The lack of diversity amongst faculty and students influences the experiences that Black students have in nursing programs. Some barriers that have been identified in the literature as affecting Black students' success in nursing programs include; prejudice, feelings of loneliness, alienation and isolation and peer's lack of understanding and knowledge of cultural differences. Literature identifies numerous initiatives such as mentoring, academic support and faculty diversity as being necessary to support Black nursing students. The purpose of this review is to consolidate evidence related to mentoring within nursing programs for Black students.

**Methods:** An integrative review will be conducted to address the research purpose as it allows for the consolidation of theoretical and empirical literature in order to understand and conceptualize the state of knowledge regarding this issue. A search strategy will be developed in collaboration with a librarian, which will then be applied to relevant databases. Ancestry and hand searching of relevant journals will also be performed.

**Anticipated Results:** This review will yield a combination of qualitative and quantitative studies as well as theoretical evidence related to mentoring for Black students in nursing programs. The findings will be analyzed, synthesized and presented as themes.

**Conclusion:** Strategies need to be identified and implemented in nursing programs to ensure Black students can feel included and supported in a safe environment. Mentoring has the potential to improve the experiences and success of Black students in nursing programs therefore, universities need to explore this initiative further in practice, research and policy

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### **Movement Related Increases in Blood Pressure During Arm Crank**

Savrina Goldenberg<sup>1</sup>, Dr. Michel Ladouceur<sup>1</sup>

1, Department of Kinesiology, School of Health and Human Performance, Dalhousie University

**Introduction:** Movement related increases in arterial blood pressure has been shown in arm horizontal flexion and extension as well as during cycling. These movement related increases in arterial blood pressure are thought to be related to angular and linear accelerations of the limb. The aim of this study is to test if movement related increases in arterial blood pressure are present during arm cranking.

**Methods:** After baseline measurements and a warm up, each participant followed an incremental exercise protocol (from no load to maximal sustained load for 5 minutes) on an arm crank ergometer at a set cadence of either 45 or 90 rotations per minute (RPM). During the exercise protocol, continuous blood pressure

measurement (Portapres®), three-dimensional upper-limb kinematics (NDI Certus), and heart rate were recorded. The two experimental conditions (45 and 90 RPM) were tested on separate days.

**Results:** For both participants a higher cadence of arm cranking resulted in an increase in blood pressure when accounting for co-variables like power output and heart rate. The mean increase in mean arterial pressure for Participant 1: 17.3 mm Hg, and for Participant 2: 29.86 mm Hg.

**Significance:** The results will prove that prescribing faster cycling exercise may be an effective strategy for enhancing blood flow response in patients with peripheral arterial disease.

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### **Comparing inertial sensors and motion capture systems to quantify sport-specific movement patterns**

Josh Goreham, Dalhousie University

**Introduction:** Inertial measurement units (IMUs) are becoming prevalent in sport science research and practice, and provide a new method to measure an athlete's movement. Furthermore, sprint kayaking performance can easily be influenced when technical alterations are introduced to the paddling stroke. Although using IMUs to collect kinematic information from human participants is a promising advancement in biomechanics research, it requires validation. The objective of the proposed study is to investigate the validity of using IMUs to characterize the paddling technique in sprint kayak athletes.

**Methods:** Paddlers of differing expertise will paddle on a kayak ergometer at known stroke rates during eight 30-second trials. Their limb movements will be measured using high-speed cameras and IMUs that will be attached to specific limb segments. The validity of the IMUs will be determined by establishing the differences between the motion measured by the gold-standard high-speed cameras and IMUs. The dependent variables to be measured are the mean joint angle estimation error and joint range of motion waveform similarities.

**Anticipated Results:** The participants measured joint angles using IMUs will not be different to those measured with a research-grade optoelectronic motion capture system during ergometer paddling, and the discrepancy between the two measurement systems (IMUs and Opto-electronic motion capture) is not dependent on the level of paddling expertise.

**Significance:** It is believed that biomechanics analysis of the kayak stroke is an area of research that can provide benefit to the sport of kayak sprint leading up to the 2020 Tokyo Olympic games.

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### **A qualitative case study focusing on quality of life in children with autism through leisure education**

Mary Graves, Dalhousie University

**Introduction:** Leisure education is an important part of increasing quality of life, especially in children with autism. Dattilo has completed interesting research in the area of leisure education and autism. Within his research, quality of life was increased and stress levels were decreased through leisure education programs focusing on specific principles, such as social interaction, self-determination, positive affect, satisfaction, independence, intrinsic motivation, motor skills, and competence (Dattilo, 2015; Garcia-Villamizar & Dattilo, 2011; García-Villamizar, Dattilo, & Muela, 2017). The purpose of this study is to add to Dattilo's research focusing on the impact of leisure education on quality of life in children with autism and their families.

**Methods:** This will be a qualitative case study partnered with two families who have a child with autism and are connected with Autism Nova Scotia. This study will be carried out through semi-structured interviews with the family, parents, and child focusing on leisure interests and pursuits.

**Anticipated Results:** The anticipated hypotheses for this study involves leisure education positively

impacting quality of life for children with autism. Through Dattilo's "Balanced and Systematic Approach to Leisure Education Model", vital components of leisure education will be compared and contrasted from the semi-structured interview results with families and children connected with Autism Nova Scotia.

**Conclusions/Significance:** The literature reviewed indicates leisure can enhance social, motor, educational skills, and quality of life. After this study, there will be a better understanding of leisure interests and needs for children with autism, and hopefully an effective leisure education program can be created from this research.

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### **Mortality after "treat and release" in EMS overdose care: A systematic review**

Jennifer Greene<sup>1</sup>, Brent Deveau<sup>2</sup>, Justine Dol<sup>1</sup>, Mike Butler<sup>1</sup>

1, Dalhousie University; 2, Canadian Armed Forces

**Introduction:** Certain EMS agencies have allowed paramedics who have reversed an opiate overdose to refuse transport, if the patient has the capacity to do so. Our intent is to examine the available literature to determine the prevalence of mortality and serious adverse events within 48 hours of EMS treat and release due to suspected rebound opiate toxicity after naloxone administration.

**Methods:** A systematic search was preformed on May 11th 2017 in PubMed, Cochrane Central, Embase and CIHAL using search strategies developed with the aide of a health sciences librarian. A modified QUIPs tool was used to evaluate risk of bias. Analysis for prevalence of outcomes were preformed.

**Results:** 1401 records were screened after duplicate removal. Eighteen full text studies were reviewed with 7 selected for inclusion. The prevalence of mortality within 48 hours was so infrequent that it could not be quantitatively meta-analyzed. There were 4/4912 (0.00081%) total reported deaths of suspected rebound etiology from included patients across all studies. Only one study reported on adverse events of patients released on scene. This study found no incidence of adverse events from their sample of 71 released patients.

**Conclusion:** Mortality or serious adverse events in the included studies due to suspected rebound toxicity in patients released on scene post EMS treatment with naloxone was rare. Despite limited studies, the prevalence rate was so low that we conclude this practice may therefore be safe in terms of mortality and may be considered an alternative of traditional transport. Additional prospective studies need to be preformed to strengthen knowledge around adverse events.

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### **Decolonizing Childbirth: Inuit Midwifery and the Return of Delivery to the Canadian North**

Katharina Gref, Dalhousie University

**Introduction:** The transfer of Inuit women to southern Canada for hospitalized childbirth has negative impacts on communities including a loss of culture in the form of Inuit knowledge and midwifery, negative health and social outcomes, and the loss of autonomy and decision making in pregnancy and childbirth. Furthermore, it is part of a historical pattern of Western biomedicine enforced on Northern populations as a method of colonization and assimilation. This research examines the ways in which Inuit midwifery programs provide a holistic childbirth option for Inuit women by addressing social determinants in a way that the current system of mandatory evacuation cannot.

**Methods:** The methodology of this research is secondary data analysis using library and internet-based resources including books, peer-reviewed journal articles, oral histories, organizational, NGO, and government literature and reports, ethnographies, and online resources. Case studies of two Inuit midwifery programs, the Inuulitsivik Maternity and the Rankin Inlet Birthing Centre, are completed in this research.

**Anticipated Results:** It is anticipated that findings will support Inuit midwifery programs as they address

maternal health in a community-based model, taking into account social determinants of health and providing a viable way of returning birth to the North, effectively de-colonizing the medicalized experience of Inuit pregnancy and childbirth.

**Conclusions:** This research seeks to contribute to existing literature supporting Inuit midwifery. This research aims to explore the strengths and weaknesses of Inuit midwifery programs, evaluating their viability in reducing and mitigating the negative impacts of evacuation across the Canadian North.

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### **Making Case Management Work: Integrating Case Management into Québec primary care settings**

Matthew Hacker Teper, McGill University

**Introduction:** In response to an aging population with increased chronic illness, case management (CM) has emerged as a powerful innovation to address the complex needs of Canada's more frequent users of healthcare. Effective CM improves health outcomes for chronically ill patients and reduces the strain that these patients place on hospital and emergency services. A few Québec clinics have sought to implement CM in primary care, but the adjustment of health professionals to this approach is challenging. Little research has examined the nature of the barriers to implementation of the CM intervention. This research project seeks to delineate these barriers by understanding how primary care team members in Québec perceive case management.

**Methods:** We will conduct a qualitative descriptive study in Family Medicine Groups (FMGs) across Québec. Participants will be purposively selected to represent maximum variability in terms of profession and the characteristics of the FMGs to which they belong. Individual semi-structured interviews will be iteratively conducted until theoretical saturation has been achieved. Interviews will be coded and a semantic thematic analysis will be conducted.

**Anticipated Results:** The research will not only identify professional perceptions of case management, but will outline strategies for accelerating health professionals' familiarization with the case management system and its uptake by health care teams.

**Significance:** This research will benefit three populations. Patients with complex care needs will receive better and more accessible healthcare; primary care providers will operate in a more harmonious and collaborative workplace; and non-FMG users will benefit from increased availability of healthcare resources vacated by high-frequency users.

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### **Caregivers' Perceptions of Quality of Life of Family Members Living with Dementia**

Grace Hagerman, School of Health and Human Performance, Dalhousie University

**Introductions:** Dementia is a devastating disease that affects the lives of many people living in Canada. It is commonly understood in the existing literature that as the disease progresses the QoL of people living with Dementia decreases. The caregiver, care recipient relationship is complex and multifaceted. As caregivers can directly impact QoL, it is essential to understand how caregivers perceive the QoL of their care recipient.

**Methods:** This project will be conducted with a qualitative description approach by interviewing family caregivers of those living with dementia. Open ended questions will be used to explore how caregivers perceive their care recipients QoL.

**Anticipated Results:** QoL is a uniquely individual experience. The results of this proposed study will explore how caregivers perceive the QoL of their family care recipient. In addition, exploring if caregivers feel that access to leisure education interventions for both them and their care recipient would help to improve overall QoL. The results will allow insight into the general perceptions caregivers hold about the



QoL of their care recipient living with dementia.

**Conclusions/Significance:** QoL is perceived to decrease as those living with dementia age, and as their disease progresses to the later stages. Examining how caregivers perceive their care recipients QoL, can aid in helping leisure education-based interventions better prepare both caregivers and care recipients for the future of the disease. These findings can also provide information on what areas of QoL of care recipients can be improved. These areas consist of leisure participation, social support, and the caregiver-care recipient relationship.

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### **Investigating Joint Attention Behaviour in Infants at High Risk for Autism Spectrum Disorder**

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1, Dalhousie University; 2, IWK Health Centre

**Introduction:** Social communication impairment is a defining feature of children with autism spectrum disorder (ASD). Given that ASD has a high genetic component, and there is difficulty in establishing a reliable ASD diagnosis prior to the age three, many studies are looking at high-risk infants (those with an older sibling with ASD) prospectively, to better understand the emergence of ASD and other impairments. Literature suggests that high-risk siblings engage in less frequent joint attention behaviour (which refers to the coordination of attention with a social partner and external object). However, little is known about the quality and variety of these behaviours in this population, with quality referring to the integration of two or more communication behaviours in one bid, and variety referring to the diversity of the behaviour.

**Methods:** 125 videos of 12- and 18-month-old high- and low-risk siblings engaged in a play-based assessment of behavioural symptoms of ASD will be coded for joint attention behaviour. High-risk siblings (those with and without ASD) and low-risk siblings will be compared on three aspects of joint attention: frequency, quality and variety.

**Anticipated Results:** I hypothesize that high-risk siblings will show less frequent, less complex and less varied JA behaviour than low-risk siblings. Further, I hypothesize that these reduced manifestations will be correlated with lower language scores and higher ASD symptomatology.

**Significance:** This research will be the first of its kind to investigate all three aspects of joint attention behaviour in high-risk siblings by using a semi-structured assessment. Investigating which aspects of these behaviours will be indicative of later impairment is essential for understanding the early emergence of ASD.

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### **Effect of physical activity on cardiac risk factors in disease prevention in cardiac rehabilitation.**

Andrew Hanna<sup>1</sup>, Dr. Chris Blanchard<sup>2</sup>

1, Dalhousie Medical School; 2, Department of Medicine, Dalhousie University

**Introduction:** Although physical activity (PA) is a known factor in preventing secondary cardiovascular disease (CVD), the impact of PA (as defined by steps/day) on CVD risk factors is uncertain. Additionally, Ayabe et al. have proposed step count recommendations specifically for the secondary prevention and regression of CVD within cardiac rehabilitation (CR) patients<sup>2</sup>. However, no studies have assessed these step count recommendations and their association with CVD risk factors in the CR population.

**Objectives:** The purposes of this study are to: a) examine the association between Ayabe et al. step count recommendations and CVD risk factors, and b) to assess the continuous relationship between steps/day and CVD risk factors, all in the CR population.

**Methods:** A total of 216 subjects participated in the study. Demographic and clinical data were collected through chart review. Physical activity was defined as steps/day and was measured by a pedometer. The CVD risk factors explored were waist circumference, body mass index, blood pressure, glucose, lipid profile, anxiety, and depression.

**Results:** After adjustment for confounders, statistical significance was seen between the steps/day categories and: waist circumference ( $p=0.014$ ), BMI ( $p=0.023$ ), fasting glucose ( $p=0.017$ ), triglycerides ( $p=0.024$ ), HDL-C ( $p=0.026$ ), and cholesterol/HDL-C ratio ( $p=0.005$ ). Furthermore, a linear association was seen between continuous steps/day and waist circumference, glucose, cholesterol, triglycerides, HDL-C, cholesterol/HDL ratio, and depression.

**Conclusions:** Both a step count category approach and a continuous steps/day approach showed evidence of reducing CVD risk factors. Physicians and CR programs can recommend either approach as appropriate.

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### **Interplay between Natural Killer Cells, Synoviocytes, and MicroRNA in Auto-Inflammatory Disease**

Breanna Hargreaves, Dalhousie University

**Introduction:** Despite the known advantages of inflammation, chronic inflammation can lead to diseases like Rheumatoid and Juvenile Idiopathic Arthritis. Key cellular contributors are fibroblast-like synoviocytes (FLS), that alter the joint microenvironment, and immune cells. Natural killer cells (NK) are innate lymphocytes that function by soluble mediators and cytotoxicity to deliver pro-inflammatory and tolerogenic effects. NK activity range and strength depends on education, a process of cell maturation. Soluble mediators such as cytokines and microRNAs (miRNA) also contribute to pathology. MiRNAs are stable non-coding RNAs that inhibit mRNA post-transcriptionally. This research is the first to identify the role of NKs, NK education, and miRNAs in auto-inflammatory disease.

**Methods:** Quantitative PCR profiling on 84 miRNAs was completed on patient and healthy samples and confirmed by droplet digital PCR. FLS production of identified miRNAs under pro-inflammatory conditions with or without therapeutic drugs was assessed.

Healthy donor NKs will be similarly screened for miRNAs. Candidate miRNAs will be used to transfect patient and healthy NKs. Resultant cytotoxicity, proliferation, and cytokine production will be assessed by flow cytometry. Results will be stratified by NK education and analysed for correlations with NK miRNA expression and response.

**Results:** Initial results reveal altered expression of select miRNAs in patient plasma, synovial fluid, and FLS. Pro-inflammatory stimulation and drug treatments shifted the expression of select FLS miRNAs.

We hypothesize that NK education and miRNA signatures define disease activation, regulation, and treatment.

**Significance:** Identifying the cellular-miRNA interplay will help identify or improve auto-inflammatory treatments.

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### **Body Image Perceptions and Eating Behaviours of Manitoban Rural and Urban Baby Boomer Women**

Nikki Hawrylyshen<sup>1</sup>, Christina Lengyel<sup>1</sup>, Shahin Shooshtari<sup>2</sup>, Alphonsus Utioh<sup>3</sup>

1, Department of Food and Human Nutritional Sciences, University of Manitoba; 2, Department of Community Health Sciences, University of Manitoba; 3, Food Development Centre, Portage La Prairie

**Introduction:** Literature on body image and body satisfaction among adolescents and young women is ubiquitous; however, limited for aging adult women. While it is known that body image issues can persist through the lifespan, influencing factors of body satisfaction and lifestyle choices to alter appearances have not been studied for baby boomer women (born between 1946-1965) explicitly. The objective was to examine body image perceptions, weight attitudes and eating behaviours of baby boomer women residing in

rural and urban Manitoba.

**Methods:** 1083 participants completed the survey (completion rate = 87%). The survey consisted of 46 multiple choice, open-ended and visual analog scale questions addressing demographics, self-rated body satisfaction and health, body work practices, appearance pressures and eating habits.

**Results:** 56% of participants were moderately to very dissatisfied with their current body weight and 32% were moderately to very dissatisfied with their overall appearance. Appearance satisfaction was significantly associated with age ( $\chi^2 = 8.34$ ,  $df = 2$ ;  $p = 0.015$ ), but not with location of residence ( $\chi^2 = 0.20$ ,  $df = 2$ ;  $p = 0.990$ ). 41% of rural participants were worried about the impact of aging on overall appearance compared to 50% of urban dwelling women ( $\chi^2 = 8.94$ ,  $df = 2$ ;  $p = 0.011$ ). For those wanting to lose weight ( $n=980$ ) over the past year, 72% at least sometimes altered their food intake with an average desired weight loss of 30lbs. Additionally, 52% of participants at least sometimes felt appearance pressure from the media.

**Significance:** Results will be used to develop age and gender appropriate tools/resources for dietitians and other healthcare professionals to assess body image concerns of aging women and promote positive body image education.

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### **Put that noise back where it came from or so help me: A statistical journey through the microbiome**

Molly Hayes, Department of Mathematics and Statistics, Dalhousie University

**Introduction:** Communities of microbes inhabit all areas of the environment, including the body cavities and surfaces of larger organisms. Mounting evidence suggests that our gut microbiome interacts with host systems in myriad ways, and that understanding these associations could have profound implications for our ability to predict, diagnose, or treat certain pathologies such as inflammatory bowel diseases (IBD), which have profoundly negative effects on quality of life for many Nova Scotians. Unfortunately, genomic data are rife with obstacles to classical analyses: perhaps most critically, our conclusions are limited by the fact that data from similar studies—even those using the same samples—are difficult to compare due to dominating ‘batch’ effects that arise from procedural and technical variability.

**Methods:** Our work is focused on modelling taxa using a factor analysis framework that allows us to determine the common factors (i.e., shared signal) from different datasets. We also aim to specify the model so as to account for the error structure and sparse distribution of features in the data.

**Results:** In preliminary work, we successfully removed noise that obstructed the signal shared between two datasets (e.g., from two separate studies of participants with IBD) using a sequence of factor analytic steps. We anticipate that the current model under development will be able to identify common factors in a more rigorous and parsimonious fashion.

**Significance:** By identifying factors which are shared across heterogeneous populations of participants with a given health condition, we can determine the most appropriate directions for research into the etiology and treatment of these conditions. This is crucial for translation of research to the clinic.

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### **Ankle bracing’s effect on lower extremity electromyography and kinetics during vertical jumping**

Zachariah Henderson<sup>1</sup>, Paolo Sanzo<sup>1,2</sup>

1, Lakehead University; 2, Northern Ontario School of Medicine

**Introduction:** Ankle braces prevent ankle injuries by restricting range of motion (ROM) at the ankle joint. The effects of restricting ankle ROM on ground reaction forces (GRFs), proximal musculature activation, and athletic performance, however, remains unclear. Previous literature has suggested that non-ankle lower extremity injuries may be increased when wearing ankle braces. Furthermore, decreases in vertical jump

height when wearing ankle braces has been observed in some studies. As such, the purpose of this study is to examine the effects of ankle braces on electromyography (EMG) of the lower extremity, GRFs, and vertical jump height.

**Methods:** Participants completed the Vertical Jump Test over a force platform under three conditions: no braces, ASO EVO™ braces, Active Ankle T1™ braces. Mean EMG activity of the peroneus longus, lateral gastrocnemius, biceps femoris, rectus femoris, gluteus medius, and erector spinae muscles, as well as GRFs were recorded during the landing and take-off phase of the Vertical Jump Test. Vertical jump height was also recorded for each condition.

**Results:** Preliminary data will be presented at the conference. It is anticipated that mean EMG activity of lower extremity muscles, along with GRFs and vertical jump height will be reduced in braced conditions.

**Significance:** Altered muscular activation and kinetics may play a role in athletic performance and injury prevention. As ankle braces are the most common method of ankle injury prevention, it is essential that healthcare practitioners, coaches, and athletes are aware of how they may affect performance or influence non-ankle lower extremity injuries. This will allow healthcare practitioners, coaches, and athletes to make an informed choice when deciding whether or not to brace the ankle.

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### **Between a Rock and a Hard Place: When Affirming Life Reduces Depression but Increases Anxiety**

Candice Hubley<sup>1</sup>, Joseph Hayes<sup>1</sup>

1, Acadia University

**Introduction:** Recent research suggests that depression may stem from the conflicted relationship between the goal to continue living and the knowledge of death. From this perspective, awareness of inevitable death can trigger withdrawal from the goal to continue living, which precipitates a general collapse in the goal-approach system and causes depression. Withdrawal from life functions to resolve motivational conflict regarding life and death, however, and thereby reduces feelings of anxiety. The current research extends this theorizing by testing the hypothesis that reactivating the goal to continue living among people who are life-withdrawn reduces feelings of depression but increases anxiety.

**Methods:** Recruited through MTurk, participants completed measures of trait depression and desire for life, and then were randomly assigned to either affirm life (write about their reasons for living) or affirm sleep (write about their reasons for sleeping). Following, participants completed a measure assessing their current state anxiety and state depression.

**Results:** Our hypotheses were fully supported. Results show that trait depression is characterized by decreased state depression and increased state anxiety when desire for life is high (vs. low). Furthermore, among life-withdrawn participants, responding to the life-affirmation task by reactivating the goal to continue living reduced depression but increased anxiety. Due to this increase in anxiety, life-withdrawn participants showed a reluctance to affirm life strongly.

**Conclusions/Significance:** Based on the evidence, we propose a process model of depression and anxiety stemming from death-awareness that sheds light on depression-anxiety comorbidity and provides implications for understanding depressive symptomatology.

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### **Understanding the Experiences of African Nova Scotian Nurses as Leaders in Health Care**

Keisha Jefferies, Dalhousie University

**Introduction:** African Nova Scotians (ANSs) are significantly underrepresented in the nursing profession and in upper level positions including managers, charge nurses and registered nurses. ANS nurses feel as

though they are practicing on the margins of the nursing profession due to workplace discrimination and racism. These experiences are related to social and institutional discourses, which have been implicated as preventing career advancement. The purpose of this study is to understand how ANS nurses embody leadership in health care through the intersections of race, sex and gender. Guiding questions include: How do ANS nurses experience leadership in health care? and What are the social and institutional barriers and facilitators to leadership for ANS nurses in health care?

**Methods:** Black feminist theory is the guiding methodology as it situates the experiences, ideas and interpretations of Black women in the center of the analysis by examining the intersections of race, class, sex and gender, exposing how hegemonic institutional and social discourses perpetuate oppression. Data will be collected using semi-structured interviews with 10-15 ANS nurses from across Canada in person, by phone or video-conference. Data will be analyzed using discourse analysis to deconstruct and understand the personal experience.

**Anticipated Results:** This research will facilitate understanding of the social and institutional discourses influencing the embodiment of leadership for ANS nurses.

**Significance:** This study will begin to address the dearth of knowledge related to ANS communities. Understanding factors impacting ANS representation in nursing and leadership will inform policy decisions to improve the health and wellbeing of ANS nurses, the health care system and care provision.

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### **The Impact of Foam Rolling on Passive Hip Flexion in Amateur Ice Hockey Players**

J.A. Johns, Dr. J.M. Moreside; Dalhousie University

**Introduction:** Hockey players often lack hip mobility which is partly attributed to excessive time spent in a flexed position during competition. Increased range-of-motion (ROM) allows muscles to be stretched further and therefore be less susceptible to injury. Foam rolling (FR) increases hip ROM in young healthy individuals but it is unclear whether such FR benefits occur in athletes with chronic hip tightness. Further, many athletes warm-up up to an hour prior to competition, therefore warranting investigation into the retention of its effects. The purpose of this study was to determine if FR improves acute passive hip flexion (HF) in amateur hockey players up to an hour post-FR.

**Methods:** Sixteen amateur hockey players (8 women) had passive HF measured at baseline and immediately post, 10, 30 and 60 minutes post-FR in the supine position. Measurement was executed digitally by the Coach's Eye® application. Participants warmed up on a cycle ergometer then performed 2 sets of 1-minute bouts of FR on both anterior and posterior aspects of the dominant thigh with 30 seconds of rest separating sets.

**Results:** Overall, the group saw increases in passive HF at all time points versus baseline measures ( $p=.03$ ) with an average increase of  $6.25^\circ$  1-hour post-intervention ( $p=.018$ ). Furthermore, women experienced greater increases in passive HF than men (9.21% vs. 5.09%). **Relevance/Significance:** Our current data shows increases in passive hip flexion at multiple time points up to 1 hour after FR  $2 \times 1$  minutes on both the anterior/posterior portions of the thigh in amateur hockey players. Additionally, women showcased higher increases than their male counterparts. It is safe to conclude FR is a beneficial addition to warm up routines when aiming to increase passive HF pre-competition.

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### **Alcohol Policy in Nova Scotian Universities: A Scoping Review**

Amelia Johnston, Department of Health Promotion, Dalhousie University

**Introduction:** Canadian undergraduate students frequently engage in heavy episodic drinking and experience high rates of alcohol related harms. Nova Scotia has one of the highest rates of heavy drinking in the country

and NS students are a population of high risk drinkers. Many Canadian universities have adopted alcohol policies which aim to reduce alcohol related harms. Though alcohol policies have been shown to be effective at reducing student drinking, there is no requirement for universities in NS to have an alcohol policy, or standards policies must adhere to. There is limited evidence for what should be included in an effective alcohol policy, but multi-strategic approaches are most effective.

**Purpose:** This study examined what alcohol policies exist at select universities in NS, the components of these policies, and the similarities and differences in policies across universities.

**Methods:** Arksey and O'Malley's framework for scoping reviews was used to examine all policies pertaining to alcohol at six NS universities. Constant comparison analysis method was used to develop key themes and sub-themes.

**Results:** The study found that policy documents at these universities contained explicit statements (eg. explicit goals), restrictions (eg. on advertising) and procedures (eg. for non-compliance to policies). Policies varied greatly between universities in components included and level of detail.

**Conclusions:** Alcohol policies vary across universities in NS. NS universities should reflect on the contents of their policies and evaluate their effectiveness. The results of this study can serve as a starting point for future alcohol policy research in NS. There is a role for health promoters to advocate for policy improvements and prevention efforts at NS universities.

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### **Effects of prolactin receptor deletions on the development of gestational diabetes in pregnant mice**

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1, Faculty of Science, Dalhousie University; 2, Departments of Pediatrics, Faculty of Medicine, Alberta Children's Hospital, University of Calgary

**Introduction:** Pancreatic  $\beta$ -cells produce insulin, the hormone responsible for glucose homeostasis. During pregnancy,  $\beta$ -cells increase in number and function to combat the maternal physiologic insulin resistance, and prolactin receptor (Prlr) mutations may contribute to gestational diabetes (GDM), as abnormal Prlr signaling has been associated with GDM in both rodents and humans. However, the molecular mechanisms underlying Prlr-mediated action in pancreatic  $\beta$ -cells has not been fully delineated.

**Methods:** Two groups of mice were compared: 1) wild-type mice ( $\beta$ Prlr+/+) and 2) heterozygous  $\beta$ -cell-specific deletion of Prlr mice ( $\beta$ Prlr+/-). Pancreatic tissue samples were collected on day 15 of pregnancy. Immunofluorescent staining and microscopy was used to visualize  $\beta$ -cells and computer software was used to quantify  $\beta$ -cell mass. Insulin Tolerance Tests and Intraperitoneal Glucose Tolerance Tests (IPGTT) were conducted to measure blood glucose levels. In vivo insulin secretion in response to glucose was measured.

**Results:** The non-pregnant  $\beta$ Prlr+/- mice were of similar body weight to the wild type mice. During pregnancy, the  $\beta$ Prlr+/- mice had higher random blood glucose and higher glucose excursion during a IPGTT. The wild type mice also secreted more insulin during IPGTT. However, there was no difference in insulin sensitivity between the wild type and the  $\beta$ Prlr+/- mice. When pancreatic  $\beta$ -cell mass was compared, there was a trend for higher  $\beta$ -cell mass in the  $\beta$ Prlr+/+.

**Conclusion:**  $\beta$ -cell specific prolactin receptor signaling is important for normal glucose homeostasis during pregnancy. The mechanism involved requires further study.

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### **The gut virome of pediatric Crohn's Disease following exclusive enteral nutrition**

Casey Jones<sup>1</sup>, Jessica Connors<sup>2</sup>, Brad MacIntyre<sup>2</sup>, Hana James<sup>2</sup>, Gamal Mahdi<sup>2</sup>, Mohsin Rashid<sup>2,3</sup>, Johan Van Limbergen<sup>2,3</sup>, Morgan Langille<sup>1</sup>

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**Background:** Inflammatory bowel disease (IBD), is an increasingly common disorder that causes inflammation in the gastrointestinal tract. Although causes are elusive, the gut microbiome is known to play a prominent role in IBD pathogenesis. Additionally, the viral component of the gut microbiome, the gut virome, has been shown to be abnormal in IBD patients. Exclusive enteral nutrition (EEN) is used as a first-line induction therapy for pediatric IBD patients, but how it affects the gut microbiota is still not fully understood. In this study, we aimed to optimize characterization of the gut virome in response to EEN treatment and to identify longitudinal viral-bacterial interactions.

**Methods:** Metagenomic shotgun sequencing and 16S rRNA gene sequencing was carried out on 16 stool samples from 3 pediatric patients with Crohn's disease (CD). Viral taxonomy of each sample was determined by aligning sequencing reads against a custom viral protein database. Viral and bacterial taxonomic profiles were integrated to analyze interactions with treatment progression.

**Results:** An average of 10,225,000 reads were sequenced in each sample, with  $2.82 \pm 9.0\%$  of reads significantly matching to our viral database. We identified 451 viral taxa, with the majority belonging to bacteriophages. We observed an increased abundance of both the Enterococcus phage EF62 phi and its host, Enterobacteriaceae in one patient (Spearman  $r$ : 0.534,  $p = 0.039$ ).

**Significance:**

Our study is the first attempt at integrating viral MGS and 16S microbiome data in a cohort of pediatric CD patients. This preliminary analysis warrants further work to gain insight into the bacteriophage-bacteria interaction during treatment.

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**Examining the effects of C21 on cell viability, AT2R receptor and pro-fibrotic gene expression**

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<sup>1</sup>, Dalhousie University; <sup>2</sup>, IWK Health Centre

**Introduction:** Breast cancer is the second leading cause of cancer-related death among Canadian women, but current therapies are associated with significant toxicities and morbidity. Breast cancers can induce the formation of a fibrotic capsule, containing cancer-associated fibroblasts (CAFs), that reduces the ability of chemotherapeutics to reach them. Compound 21 (C21), a novel angiotensin II type 2 receptor (AT2R) agonist, has been shown to reduce fibrosis in animal models of disease. We hypothesize that C21 could inhibit fibrotic capsule formation by CAFs. This in turn could lead to increased penetration of conventional chemotherapeutics to primary tumors and metastases and improve patient outcomes.

**Methods:** The alamarBlue assay was used to determine the impact of C21 on the viability of 3T3 fibroblasts and 4T1 murine mammary carcinoma cells. Immunofluorescent staining will be used to detect and quantify AT2R expression on 3T3 fibroblasts and 4T1 cells, and determine if C21 treatment impacts the level of receptor expression. Quantitative PCR will be used to detect C21-induced changes in expression of pro-fibrotic and pro-inflammatory genes including TGF $\beta$ , FAP, IL-6 and IL-1 $\beta$  in 3T3 fibroblasts.

**Results:** C21 did not demonstrate a dose-dependent effect on the viability of 3T3 fibroblasts or 4T1 tumor cells. We predict that the AT2R will be more highly expressed on fibroblasts than on tumor cells, and that co-culture of fibroblasts and tumor cells will result in increased AT2R expression on both cell types. Additionally, we expect to see a decrease in the amount of pro-fibrotic and pro-inflammatory gene expression in cells treated with C21.

**Conclusions:** Our preliminary results indicate that C21 does not have a dose-dependent effect on tumor cell or fibroblast viability.

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## **Identifying priorities for competency-based simulated experiences as fieldwork**

Nila Joshi, Dalhousie University

**Introduction:** The key objective of this project was to inform the content of simulation scenarios by identifying key competencies preceptors most frequently reported on the Competency Based Fieldwork Evaluations for Occupational Therapy (CBFE-OT) in need of further learning.

**Methods:** To inform the development of competency-based simulated experiences for fieldwork, 340 CBFE-OTs were analyzed for two MSc(OT) cohorts (N = 118 students) to identify strengths and areas for improvement. Average scores and a thematic analysis (using NVivo) was completed with qualitative comments related to the following categories: practice knowledge, clinical reasoning, facilitating change with a practice process, professional interactions and responsibility, communication, professional development, performance management, and overall performance.

**Results:** Preliminary results show relative strengths in the categories of professional interactions and responsibility, communication, and performance management. Areas for improvements include articulating clinical reasoning, articulating the application of theory and evidence in practice, adapting and grading interventions during the therapeutic process, and responding to unanticipated situations. Students were commended for a respectful, client-centred approach, time management, problem-solving, collaborative professional relationships, and acquisition of practice knowledge.

**Conclusion:** Well-designed simulations targeting key competency development may provide an ecologically relevant opportunity for students to acquire increasingly complex practice competencies, engage in self-reflection, and receive individualized feedback. The findings of this project will inform simulations that could serve as fieldwork hours.

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## **Changes in coping and social motives for drinking and alcohol consumption across the menstrual cycle**

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1, Dalhousie University; 2, University of Prince Edward Island; 3, Concordia University; 4, St. Francis Xavier University

**Introduction:** Alcohol use has been reported to fluctuate over women's menstrual cycles (MCs), with increased intake occurring premenstrually/menstrually (phases characterized by heightened negative affect) and during the ovulatory phase (a phase characterized by positive affect). This suggests women may drink for particular emotion-focused reasons at specific points in their cycles. However, no research had yet examined MC variability in drinking motives, or links between cycle related changes in drinking motives and alcohol consumption.

**Methods:** Ninety-four normally cycling women (Mage = 22.9 years old, SDage = 4.7) completed daily diary measures (via Smartphone surveys), with questions pertaining to state drinking motives and quantity of alcohol consumed for the course of a full MC.

**Results:** Drinking motives differed by cycle phase. Women reported a slight increase in drinking to self-medicate for negative affect premenstrually, with drinking to cope peaking in the menstrual phase and declining mid-cycle. Women reported a slight increasing trend across the cycle in social motives for drinking, while enhancement motives remained relatively stable across the cycle. Cycle-related changes in drinking motives predicted increases in the quantity of alcohol consumed. Drinking to cope with negative affect predicted a greater number of drinks menstrually (days 1–5). While social motives predicted a greater number of drinks during the follicular and ovulatory phases (days 5–16), enhancement motives were unrelated to drinking quantity across cycle phase.



**Conclusions:** Clinicians should be attentive to cycle phase when treating reproductive-aged women with alcohol disorders (e.g., encouraging the use of healthier means of coping with negative affect during menses).

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### **Risk of chronic kidney disease following acute kidney injury during DKA in children with T1D**

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**Introduction:** A recent study demonstrated that 64% of children hospitalized for diabetic ketoacidosis (DKA) presented with acute kidney injury (AKI). Other pediatric populations show AKI to confer an increased risk for chronic kidney disease (CKD). The objectives are to compare the risk of developing CKD in children with T1D three to five years following DKA hospitalization between the groups: those without DKA, those with DKA without AKI, and those with DKA and AKI.

**Methods:** This is an ambispective cohort study of T1D patients presenting to the BCCH Diabetes clinic from 11/2016 to 07/2017 (N=230). Expected baseline creatinine (EBC) was calculated using height and estimated GFR of 120mL/min/1.73m<sup>2</sup>. AKI, during DKA, was defined as serum creatinine values >1.5 times the EBC. Presence of albuminuria, using ACRs, is a CKD risk factor. Current eGFR was evaluated as CKD <60mL/min/1.73m<sup>2</sup>, mildly-decreased as 60-90mL/min/1.73m<sup>2</sup> and hyperfiltration as >150mL/min/1.73m<sup>2</sup>.

**Results:** Of the 200 subjects, 59.0% (N=115) had DKA, of which 56.8% (N=54) had AKI. In this subset 15.4% (N=2) had mildly-decreased eGFR and 84.6% (N=11) retained normal kidney function. Of those without AKI during DKA, 10.5% (N=2) had mildly-decreased eGFR, 10.5% (N=2) had hyperfiltration, and 79% (N=15) had normal kidney function. The current mean length of follow-up was 3.9±3.3 years. Of those without DKA (N=80), 20% have mildly-decreased eGFR (N=6) and 80% (N=24) have normal kidney function. Of 45 subjects with ACRs, 20% (N=9) showed presence of albuminuria.

**Conclusions:** This is the first study to report CKD in children with T1D. Knowledge translation initiatives are needed to ensure timely management and to develop protocols for renal impairment identification.

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### **Parental Acceptance of Guidance on Neonate Pain Reduction Methods**

Mulenga Kasutu, Dalhousie University

**Introduction:** In neonatal intensive care units (NICU), infants are exposed to numerous amounts of pain and pain-inducing procedures. The use of various methods such as nonpharmacological and pharmacological have been used to alleviate pain along with parental involvement. Understanding parental involvement in pain management and the guidance methods used to encourage involvement is needed to develop a better environment for parents in NICU. The purpose of this study is to understand parents' acceptance of assisted guidance on infant pain management in the NICU.

**Methods:** This study will be conducted using a constructivist worldview and qualitative descriptive approach. Data collection will occur during focus group discussions using open-ended questions regarding parental acceptance of guidance on infant pain management and comfort. Acceptance may be viewed as a process that develops over time while guidance ensures supervised care and assistance on pain management methods.

**Anticipated results:** Participates are anticipated to develop different levels of acceptance through parent-child attachment, trust and parent-staff relationships. We anticipate guidance methods such as support, demonstration and pain management education may be accepted most.

**Conclusions/Significance:** Parental involvement in pain management of neonates can benefit parent and

infant relationships. Understanding the parental experience surrounding pain management and their acceptance of guidance enables the development of better experiences for both parents and infants in NICU.

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### **Can Kinesiology Student-Teacher Partnerships Enhance Phys-ed Delivery in Public Schools?**

Rebecca Kennedy<sup>1</sup>, Dr. Erin S. Pearson<sup>1</sup>

<sup>1</sup>, Lakehead University

**Introduction:** A recent study conducted in Thunder Bay, Ontario revealed that educators do not feel efficacious regarding physical education (PE) delivery and desire more training and professional development opportunities. Based on these recommendations, a case study was piloted involving the implementation of the GoodLife4Kids™ School Program for 12-weeks by a trained Kinesiology student to a teacher and her grade four class. Results showed that the partnership was deemed valuable in terms of providing mentorship and for promoting the teacher's self-efficacy for teaching PE. However, it was suggested that a more commonly recognized, accessible curriculum be used in subsequent programming. Based on these recommendations, a program using an alternative curriculum and intended for more schools and partnerships is being developed. The purpose of the present study is to conduct an exploratory needs assessment with key stakeholders in order to determine program-related preferences and priorities.

**Methods:** A survey will be developed and administered to local public school board administrators and teachers to explore what is (not) important to them regarding PE, barriers and facilitators involved in delivery, and components they would like to see integrated into a new program aimed at assisting with delivery.

**Anticipated Results:** Results of this study will be used to assess the demand for and potential value of a PE program integrating partnerships between Kinesiology students and local teachers.

**Significance:** Integrating viewpoints of the target population is an essential step in intervention planning and development. Ultimately, this study will be integral for uncovering key values and preferences associated with PE delivery and programming as identified by key stakeholders.

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### **Physical Design and Homelikeness in Long-Term Care**

Emily Kervin, Mount Saint Vincent University

**Introduction:** As Nova Scotia's population continues to shift towards a higher proportion of older adults, the projected demand for residential long-term care will continue to increase. The long-term care sector will need to be responsive to an increasing number of older adults for whom long-term care is "home". Changes to the continuing care sector allowed the Care and Construction team to examine how different models of care impacted resident quality of life (QoL).

**Methods:** This study involves a secondary analysis of qualitative and quantitative data that were previously collected in the Care and Construction study, which includes 15 interviews and 319 surveys with nursing home residents across 23 long-term care facilities in Nova Scotia. Interviews will be examined for how physical design contributes to residents' relationships and perceptions of homelikeness – an individual's perception of feeling at home. Surveys will be analyzed to test for differences in residents' perceptions of homelikeness between those who reside in nursing homes with traditional versus household physical design.

**Anticipated Results:** It is anticipated that residents of facilities with household design will perceive a more homelike environment than those who reside in facilities with traditional design. Non-institutional design characteristics, and those representing domesticity, are anticipated to be perceived as homelike. These elements may contribute to resident QoL by supporting the meaning-making, relationships, privacy,

autonomy, and choice.

**Significance:** Honoring the nursing home resident's perspective to understand what aspects of physical design can best support feeling "at home" is important for informing future decisions surrounding long-term care policy and planning.

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**Exploring barrier protection methods use among women who have sex with women in Canada: A scoping review**

Liane Khoury, Dalhousie University

**Introduction:** The sexual health of women who have sex with women (WSW) is understudied. Little is known on the limited use of barrier protection methods among WSW. There is perceived low risk for sexually transmitted infections (STI), despite the most common STI are HPV and bacterial vaginosis. Other barriers for limited use are low access to different barrier protection options, and perceived as heterosexual when accessing sexual health services.

**Methods:** This scoping review will be following Arskey and O'Malley's methodological framework, where we will follow the steps to develop our own framework. We will be using peer reviewed journals and articles with the help of online databases, such as EBSCO and PubMed.

**Anticipated Results:** We anticipate that WSW will not use barrier protection due to limited knowledge, facing discrimination when accessing health care services, and having more trust women than men with regard to using barrier protection. A scoping review will look at the gaps that are found within the literature, which we believe will help us understand why WSW do not use BPM and look at ways to improve these gaps.

**Conclusions/Significance:** Most strategies are focused on heteronormative measures or are geared towards men who have sex with men, rather than including WSW. Due to perceived low risk of STI and fear of discrimination while accessing health services, WSW who do not use BPM have increasing risk of contracting an STI.

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**Developing LGBTQ Rights Through a Health-Based Approach: A Cuban Case Study**

Emily Kirk, Dalhousie University

**Introduction:** Since 2008, Cuba has been lauded internationally for its attention to LGBTQ rights. This is particularly significant as the island was once considered to be among the most discriminatory and homophobic countries in the world. Yet, the process of this dramatic shift had never been studied. This was in part as a result of the government's unwillingness to allow researchers to explore this controversial topic. This study thus represents the first time the Cuban government has allowed any foreign researcher access to pertinent data and key figures. Notably, the changes occurred through a focus on health—employing a unique Health-Based Approach.

**Methods:** Research for this study was mainly conducted over three research trips within a two-year period. The methodology consisted of extensive archival research in Havana, Cuba and semi-structured interviews with key figures.

**Results:** This study determined that unlike other countries that employed a strictly Rights-Based Approach to establish and improve LGBTQ rights, Cuba used a unique Health-Based Approach, and specifically the Discrimination-Health Link. This Approach was extremely successful, and offers an effective alternative that can be applied elsewhere.

**Significance:** While Cuba was once viewed as extremely homophobic and discriminatory, today it has received accolades from the UN and WHO for its attention to LGBTQ rights. This significant change was the result of the island's unique and effective Health-Based Approach, one rooted entirely in the understanding of the importance of health.

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### **High-Throughput 3D Neural Cell Culture Analysis Facilitated By Aqueous Two-Phase Systems**

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1, School of Biomedical Engineering, Dalhousie University

**Introduction:** The three-dimensional (3D) culture of neural cells in extracellular matrix (ECM) gels holds promise for modeling neurodegenerative diseases. However, air-liquid interfacial tension and evaporation can result in inconsistent 3D cultures at low volumes. Thick-layer hydrogels can counter these factors, but large diffusion distances, high cost, and incompatibility with standard imaging tools, plate readers and assays limit their use. To address these limitations, we have developed a thin-layer, 3D culture technique using a commonly used self-assembling ECM hydrogel (Matrigel) combined with an aqueous two-phase system (ATPS).

**Methods:** A dextran T10 (D10) and hydroxypropyl methylcellulose 4000 cPs (HPMC) ATPS was used to confine small volumes of Matrigel containing the model neural cell line, SH-SY5Y, into thin layers in a 96-well plate format. SH-SY5Y cells were differentiated and cell viability and morphology were observed under epifluorescence microscopy. The ATPS-Matrigel 3D culture method was characterized by monitoring the distribution of 3.0 µm microbeads within gel constructs without cells.

**Results:** Matrigel evaporation was eliminated in the ATPS-Matrigel 3D culture method, and small volumes (20 µl and lower) formed evenly thin gels. SH-SY5Y cells were observed to extend neurite-like processes in three-dimensions when differentiated, and cell viability remained high, suggesting minimal negative impact of the protocol on cell growth.

**Conclusions:** We demonstrate a low cost, simple, high-throughput, 3D neuronal cell culture system that is compatible with well-established equipment and commercially available materials.

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### **Embracing Life - Youth-led Suicide Prevention**

Lisa Lachance, Dalhousie University; Wisdom2Action

**Introduction:** Suicide remains a leading cause of death for young people in Canada, accounting for 24 percent of all deaths among young people. Across Canada, communities, organizations and health care professionals are addressing this issue through programs, services and research. Youth also play an important role in suicide prevention in Canada. Youth know the pathways to wellness and life enhancement. They lead programs in their communities that support other young people. They provide important peer support, formal and informal. They are advocates for themselves and their community.

**Methods:** This paper presents the results of a Knowledge Mobilization project on youth-led suicide prevention programs. It will include an overview of the available literature on youth-led suicide prevention programs in four thematic areas: training, online resources, peer support and life enhancement, with a focus on culture and language programs for First Nations, Inuit and Metis youth. It also presents the outcomes a national forum on youth-led suicide prevention held February 2018, and will address the issue of suicide contagion when working with young people.

**Discussion:** It is anticipated that this research and forum proceedings will result in guidelines to support

youth leadership in suicide prevention, recognizing the value of youth engagement on this critical topic. An additional emergent theme is that the risk of suicide contagion can be mitigated through engagement.

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### **The Effect of Yoga Duration on Cardiovascular Response and Psychological Well-being**

Alyssa Larade, Dalhousie University

**Introduction:** Yoga is an increasingly popular physical activity regimen that provides a low-moderate intensity alternative to high-intensity exercise. There is significant support in the literature surrounding the therapeutic use of yoga for physical, emotional and cognitive benefits. There remains question as to what the optimal yoga session length is to induce cardiovascular benefits (heart rate [HR], blood pressure [BP]), stress reduction and improve cognitive functioning.

**Purpose:** The purpose of this study is to determine the effect of a 20-minute, 60-minute and 90-minute session of hatha yoga on HR, BP, perceived stress level and cognitive functioning to determine the minimum amount of time to produce these health benefits.

**Methods:** Men and women between the ages of 18 and 65 years who have been practicing yoga consistently (1-2 times a week) for at least one year, are not hypertensive (BP < 140/80) and have a resting heart rate (HR) < 100 beats per minute (BPM). Resting HR, BP, perceived stress level, mood and cognitive function will be tested pre-yoga session intervention as well as post-yoga session intervention.

**Anticipated Results:** All yoga session lengths (20-minutes, 60-minutes, and 90-minutes) will yield the same reduction in cardiovascular response (HR, and BP), and perceived stress level considering that yoga is a low-moderate intensity exercise.

**Significance:** The findings of this study are important for physical activity adherence. If it can be determined that 20-minutes of a single session of hatha yoga produces the same health benefits as 90-minutes, this would be critical for practitioners prescribing exercise to patients.

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### **One Health: Improving Public Health by Providing Care to Marginalized Clients and Companion**

#### **Animals**

Dr. Doris Leung<sup>1</sup>, Kelsi Jessamine<sup>1</sup>, Dr. Cassandra Hanrahan<sup>2</sup>, Dr. Erin Leonard<sup>2</sup>

1, Community Veterinary Outreach, Vancouver; 2, Community Veterinary Outreach, Halifax

**Introduction:** Current research has demonstrated that the human-animal bond of pet-ownership amongst marginalized populations, provides significant protective factors against depression, anxiety and substance use, and can generate strong motivators for positive change, resulting in improved health and well-being(1). Approximately 20% of homeless individuals in Canada have pets(2,3). In British Columbia, over half of street-involved youth are pet owners(4). Community Veterinary Outreach (CVO) is a Canadian charitable organization that assists individuals and their pets by supporting the human-animal bond and its related health benefits. CVO organizes One Health (OH) clinics for marginalized clients and their pets in Halifax and Vancouver.

**Methods:** OH clinics are organized within community centres where clients are accepted on a walk-in or referral basis. Clients' pets are cared for by a veterinary team, with animal and human health promotion messages amplified throughout the visit. Human health services are offered to the client by healthcare and social service professionals. Rates of uptake in health care services are documented.

**Results:** Over the last year, OH Clinics have offered services to 200 marginalized clients and 100 pets in Vancouver, and provided care for 21 pets in the first pilot clinic held in Halifax in 2017, demonstrating tremendous potential for similar results to the Vancouver clinics.

**Conclusions:** The unique application of the One Health concept, with collaboration from multidisciplinary health professionals demonstrates significant potential in improving public health by connecting marginalized populations and their pets to care and support by building on the physical and psychosocial benefits of the human-animal bond.

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### **Characterization of Toxin-Forming Pathways in Group A Streptococcus**

Lydia Li, Canadian Centre for Vaccinology (CCfV) Lab, IWK Health Centre and Dalhousie University

**Introduction:** Group A Streptococcus (GAS) is a harmful bacterium that strictly infects humans, causing a range of diseases from severe toxic shock syndrome to moderate strep throat infection, especially in children. The ability of most bacteria, including GAS, to secrete toxic proteins is a strategy used to help promote their survival inside the human body. Structural bonds and linkages are important for the proper folding and stability of protein toxins, and any disruptions in the natural protein-making processes of bacteria lead to abnormal misfolded proteins, which are quickly eliminated without further damaging the human host. To date, there is little known about the enzymes and molecular pathways involved in forming the toxic proteins released by GAS.

**Methods:** An in silico approach was used to identify 5 candidate enzymes predicted to be involved in proper protein formation in GAS. Candidate enzymes were mutated one-by-one using standard molecular cloning techniques and their molecular role studied in different qualitative and quantitative phenotypic assays.

**Results:** Our findings suggest that one enzyme in particular (2037) is needed for proper disulfide bond formation in an important GAS exotoxin: streptococcal pyrogenic exotoxin A (SpeA). Bacteria producing the mutated 2037 enzyme also show increase sensitivity to oxidative stress both in vitro and in macrophage cell line assays.

**Significance:** To improve the health of Canadians, a better understanding of harmful bacteria, such as GAS, is required at the basic molecular level. Studying the fundamentals of toxic protein production will pave the way for new drug targets and vaccine development strategies that offer an alternative to antibiotic treatments.

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### **Examining the Collective Impact Framework: A Case Study of the Try Do Council of Halifax**

Sara Limpert Woods<sup>1</sup>, Sara Kirk<sup>1</sup>  
1, Dalhousie University

**Introduction:** Preventative population health approaches have faced difficulty achieving tangible results due to their enormous complexity. Obesity is a prime example. To try to navigate complex social environments, the Collective Impact Framework (CI) was developed. CI is a model for community change based on five essential pillars: a common agenda, shared measurement, mutually reinforcing activities, continuous communication, and a backbone organization. CI has been generating interest despite a lack of rigorous research regarding its use. The purpose of this proposed doctoral research is to observe and examine CI in a population health context.

**Methods:** This work will be conducted using a case study approach, examining the Try Do Council of Halifax, NS. The Council is a group of diverse stakeholders working together to try to improve outcomes related to healthy eating and physical activity, using CI as a guide. This study will be performed using the lens of complexity theory, which examines complex adaptive systems, defined by free-acting agents, dynamic interactions, self-organization, coevolution, feedback-dependence and non-linearity, and their cumulative effects on holistic systems.

**Anticipated Results & Significance:** On a micro level, this research will serve to assist the Try Do Council

in their understanding of the implications of their use of CI. More fundamentally, however, its intended contribution is to examine and comment on the utility, practicality, and validity of CI as a tool for navigating complex population health problems.

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### **Does the school setting matter? Exploring school and class effects on health behaviours**

Vanessa Linton<sup>1</sup>, Dr. Kathy Georgiades<sup>2</sup>

1, McMaster University; 2, Offord Centre for Child Studies

**Introduction:** Individual-level predictors of student health behaviours have been well established, yet associations between health behaviours with school and classroom characteristics have been far less studied. The objectives of this study are to: 1) determine the extent to which student health behaviours vary across schools and classrooms and 2) to identify characteristics of schools and classrooms that are associated with health behaviours of students in grades 6-12 in schools in Ontario, after accounting for student compositional effects.

**Methods:** This study will use secondary data from the School Mental Health Survey, a cross sectional study that gathered data from students in grades 6-12 (n=31,124) as well as teachers (n=3,373) and principals (n=206) from 248 schools in Ontario. Multilevel modelling will be used to explore school and class effects on health behaviours while controlling for student compositional effects. MLWiN version 2.35 will be used for the analysis.

**Results/Anticipated Results:** Results from this study are expected to identify and quantify the potential impact of schools and classrooms on health behaviours. These results will provide insights as to the extent to which health behaviours are modifiable within these contexts.

**Conclusion/Significance:** This research project will contribute to better understanding of the impact of schools and classrooms on students' health behaviours. Identification characteristics of schools and classrooms that are linked to healthy lifestyle behaviours could inform the development of targeted initiatives in schools and classrooms. As well, this research can support context-specific policy development.

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### **First-Time Mothers' Experiences of Prenatal Education and Support: Implications for Practice**

Victoria Little, Dalhousie University

**Introduction:** For many years, Public Health Services in Nova Scotia provided in-person education and support classes to pregnant women; however, in 2014, the province introduced a free prenatal education website to replace the in-person classes. This change to the delivery of prenatal education could have potential implications for pregnant women's experience of prenatal information and support. There is little research that addresses how various online and offline prenatal education is received or affects women's perinatal experiences and health outcomes.

**Methodology:** Semi-structured face-to-face interviews were conducted with 8 first time mothers. Feminist poststructuralism (FPS) and discourse analysis were used to analyze how women's prenatal experiences were socially and institutionally constructed using the concepts of beliefs, values, practices, discourses, language, and relations of power.

**Findings:** The mothers' experiences revealed they were anything but passive in their search for prenatal information and support, they used their agency to challenge the social and institutional construction of first time mothers as predominantly 'unknowing'. Mothers searched for a community of support with other mothers and healthcare providers through online and offline interaction. Expectant mothers need opportunities to critique and analyze information and support to ensure they are making decisions that align

with what's best for them and their families.

**Significance:** The findings of this research have provided rich and meaningful insight into the experiences of first time mothers searching for prenatal information and support. These findings could be used to guide practice and planning of prenatal education programs in Nova Scotia.

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### **Diffusion of innovations in the long-term care sector: Does motivation play a role?**

Lauren MacEachern<sup>1</sup>, Janice Keefe<sup>1</sup>  
1, Mount Saint Vincent University

**Introduction:** As Canada continues to experience an advancing need for long-term care (LTC) services and an increasing complexity of residents, dissemination of best practices and innovations to improve care quality within the LTC sector is paramount.

**Methodology:** The aim of the present study was to determine how the presence or absence of opinion leader (OL) motivation, with consideration for associated factors of capability and opportunity, impacts the diffusion and/or implementation of advice within the Canadian LTC sector. Data were collected through semi-structured qualitative interviews with 13 OLs and 13 advice-seekers of OLs and analyzed using grounded theory techniques.

**Results:** OLs in the Canadian LTC sector are motivated by a combination of factors: obligations of the position, value of education, 'systemness', relationships, supportiveness, passion, and caring nature. Motivational factors were presented on a sliding motivational scale from professional to prosocial. Obligation of the position was the dominant motivator for OLs in this sector, however a desire to improve care quality was intertwined in many themes. Specific outcomes associated with a motivational presence includes the diffusion and implementation of innovations, increased sense of community within the network, and increased readiness for the future of the LTC sector.

**Conclusions:** This research has important implications for policy and practice due to the nature of resource availability in the LTC sector and challenges for innovation implementation that arise from this issue. OLs play a key role in ensuring resources are used efficiently and effectively, as they are invested in seeking out and sharing information pertaining to innovations that are evidence-based and will improve care quality.

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### **Orthographic Knowledge, Word Reading, and Lexical Access: Are These Constructs Distinct and Related?**

Elizabeth MacKay, Nicole Conrad, Helene Deacon; Dalhousie University

**Introduction:** In select theoretical and empirical work, the constructs of word reading, lexical access, and lexical and sublexical orthographic knowledge are assumed to be distinct constructs; however, this notion is debated within the literature. Importantly, little empirical evidence has addressed this debate. Thus, the first goal of this study was to provide evidence investigating the distinctiveness of each of these constructs. Our second goal was to evaluate relations among these constructs, should they be deemed distinctive.

**Methods:** We tested 104 English-speaking children in the fourth grade on measures of lexical and sublexical orthographic knowledge, lexical access, word reading, phonological awareness, and an estimate of nonverbal ability.

**Results:** The results of our confirmatory factor analysis suggest that a three-factor model best fits our data, with one factor comprised of lexical orthographic knowledge and word reading, another of sublexical orthographic knowledge, and another of lexical access. Because lexical orthographic knowledge and word reading were not separable, we investigated the relation between sublexical orthographic knowledge and lexical access. The results of the regression analysis suggest that sublexical orthographic knowledge is



related to lexical access beyond controls.

**Conclusions and Significance:** The confirmatory factor analysis results directly address the debate concerning the distinctness of lexical and sublexical orthographic knowledge, word reading, and lexical access. The regression analysis results provide preliminary evidence for a skill implicated in fast access to words in the mental lexicon. Together, these novel results aid the advancement of theories of reading development and help inform past and future empirical work.

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### **A Legal Assessment of Treatment for Incarcerated Persons Living with Borderline Personality Disorder**

Matt MacLellan, Dalhousie University

**Background:** Borderline personality disorder (BPD) is marked by pervasive cognitive distress and difficulty in relationships. BPD prevalence among incarcerated people is high, but access to community treatment programs, specifically cognitive therapy, in prisons is severely limited. This research assesses adequacy of BPD treatment in prisons against standards set out in provincial, national, and international law governing healthcare for prisoners, and discusses the potential for legal measures to improve treatment for inmates with BPD.

**Methods:** A literature review was conducted related to the causes, prevalence and treatment of BPD, as well as the healthcare challenges faced by people living with BPD. Interviews were conducted with social workers employed in Nova Scotia prisons, a crown attorney, and a clinical psychologist. A review of the law governing treatment of personality disorders is applied to the case of inmates living with BPD.

**Results:** Estimates of BPD prevalence among inmates are as high as 50%. Inmates with BPD are more likely to be placed in administrative segregation. Inmates with personality disorders also have higher recidivism rates. The standard for healthcare established in the legislation is that of the outside community. Legal measures to enforce rights to treatment may include Charter challenges and civil actions, though the likelihood of success is questionable due to lack of precedence for Charter challenges and civil standards of care for government actors.

**Conclusions:** Inadequate treatment of BPD in prisons negatively impacts rehabilitation and reintegration, and runs afoul of legislative standards. However, more research from is required to determine what specific changes are necessary and the capacity of institutions to improve treatment.

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### **Exploring Perceived Benefits and Challenges of Everyday Cycling by Parents in Halifax, Nova Scotia**

Samantha MacLellan, Dalhousie University

**Introduction:** Low physical activity and air pollution are the two leading causes of disease burden worldwide. From a public health perspective, there is value in promoting sustainable transportation such as everyday cycling. Parents are gatekeepers to their family's transportation choices, however there has been little qualitative research conducted to understand their experiences. The purpose of this project is to explore the benefits and challenges to everyday cycling as perceived by parents.

**Methods:** This project will be conducted in a qualitative descriptive manner. Parents of young children who identify as everyday cyclists will be recruited through the Halifax Cycling Coalition. Qualitative data will be collected through open-ended interviews, which will then be coded and thematically analysed.

**Anticipated Results:** Findings will provide insight into parents' perceived benefits and challenges of everyday cycling in Halifax, Nova Scotia, and with how these benefits and challenges occur in the context of a family.

**Conclusions/Significance:** The results of the project will add to the literature on active transportation and physical activity. By exploring the experiences of parents within the family context, we can also create better-informed policies, programs and interventions aimed at promoting everyday cycling and other forms of sustainable transportation.

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### **The power of participation: How might community partners sustain the Halifax Mobile Food Market?**

Madison MacQuarrie, Sara Kirk; Dalhousie University

**Introduction:** Mobile food markets (MFM) are innovative interventions that can support healthy eating within lower-income communities. MFMs enhance food security through increased access to nutritious food by alleviating travel costs in areas where accessing healthy food may be challenging. One such MFM operates within Halifax, Nova Scotia. Pilot evaluation data has suggested community partnerships play a critical role in sustaining the Halifax MFM, but little is currently known about how such partnerships function in this context. The proposed project will explore how partnerships operate to influence positive outcomes of the MFM in Halifax.

**Methods:** Community partners will be purposefully sampled and interviewed, based on recommendations from the MFM coordinator. Arnstein's Ladder of Citizen Participation will be used to gain an understanding of how partnerships operate to support the MFM. Use of this model will offer insight into the relationship between citizen participation and citizen power. A feminist poststructural approach, which seeks to understand relations of power, will be applied to allow further exploration of the significance of power relations within partnerships in the MFM.

**Anticipated Results:** Research findings will offer insight into how partnerships in Halifax's MFM function, and will provide an understanding of how to sustain effective, long-term partnerships within the MFM. Analysis of power relations will give perspective into how these may affect the sustainability of partnerships and ultimately the operation of the MFM.

**Conclusion/Significance:** The results of this research will be used to inform strategies to develop and sustain effective partnerships within the MFM in Halifax.

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### **Perfectionism and Rehabilitation Overadherence in Injured Athletes**

Kristi MacWilliam, Dr. John K. Gotwals; Lakehead University

**Introduction:** Injured athletes tend to overdo their practitioner recommendations during injury rehabilitation. Such overadherence to injury rehabilitation can increase susceptibility to re-injury and prolong recovery time. Injured athletes who have high perfectionistic standards and high perfectionistic concerns with respect to their sport will likely demonstrate greater overadherence during their rehabilitation in an effort to return to their sport sooner. Despite this, no research has explored this relationship.

**Methods:** Participants will be 80-120 injured athletes currently rehabilitating their injury and restricted from sport participation as a result of that injury. Participants will complete measures of demographics, perfectionism, and rehabilitation overadherence. A moderated hierarchical regression analysis will be conducted to determine if personal standards perfectionism and evaluative concerns perfectionism interact to predict rehabilitation overadherence.

**Anticipated Results:** It is expected that evaluative concerns perfectionism will predict high levels of overadherence and personal standards perfectionism will predict low levels of overadherence. As a result, individuals who have high levels of evaluative concerns perfectionism combined with low levels of personal standards perfectionism should predict the greatest levels of rehabilitation overadherence.

**Significance:** This study could educate coaches, athletes, and healthcare professionals about a personality trait that is likely common among injured athletes. Such research could help to identify individuals who are at a higher risk for overadherence, allowing them an opportunity to promote proper adherence behaviours, and as a result, better overall rehabilitation outcomes.

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### **The Recreation for Mental Health Game: Reflections on interactive KT development and facilitation**

Robyn Burns & Rachele Manett Dalhousie University

**Introduction:** This presentation details the iterative process of developing and facilitating an interactive game as a knowledge translation and leisure education product, aimed to highlight the barriers and facilitators to recreation participation for individuals with mental health challenges.

**Methods:** The Recreation for Mental Health Game was developed using synthesized data from the larger Recreation for Mental Project (R4MH) (Gallant, Hutchinson, & Hamilton-Hinch, 2017). As part of the larger R4MH project, the interactive game was developed using iterative and participatory processes, including piloting with individuals with lived experience of mental health challenges and recreation practitioners, towards the development of a final game.

**Findings:** This presentation highlights reflections and key learnings, from the perspective of two research assistants involved in developing a knowledge translation/leisure education tool, as well as reflections on facilitating the game in distinct contexts (e.g., in the classroom, to groups of recreation practitioners, and in the context of an Interprofessional Health Education (IPHE) mini-course).

**Conclusion:** Interactive, evidence-informed activities are a useful knowledge translation and leisure education tool for a variety of settings and participants. Visit [www.rec4mentalhealth.com](http://www.rec4mentalhealth.com) for more information about the R4MH research projects, resources, and members of the research team.

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### **Addressing Mi'kmaq Priorities in the Development of a 'Land as Mentor' Field School**

Megan Matthews, Dalhousie University

**Introduction:** Indigenous food sovereignty, which is the right to produce and define healthy and culturally appropriate foods, is an important aspect of the traditions, culture and identity of Indigenous peoples' across generations. There are various initiatives across Canada that teach students about Indigenous food sovereignty and traditional food systems, however there are no such programs within Mi'kmaq'i. The Atlantic Indigenous Mentorship (AIM) Network plans to develop a 'Land as Mentor' field school, which will be taught by Mi'kmaq Elders and knowledge-holders and offer a hands-on, lands-based course that is focused on Indigenous traditional food systems. The purpose of this study will be to gain the perspectives of Mi'kmaq Elders and knowledge-holders regarding their priorities for the 'Land as Mentor' field school, and to determine how their perspectives can be integrated into the curriculum in ways that uphold Indigenous values and beliefs.

**Methods:** Three to ten Mi'kmaq Elders and knowledge-holders will be invited to a Mi'kmaq community in Nova Scotia to participate in a talking circle.

**Anticipated Results:** Through story-telling and semi-structured discussion questions, participants will discuss their perspectives with one another regarding Indigenous food systems and food sovereignty, and identify their priorities for the 'Land as Mentor' field school.

**Conclusions/Significance:** The information gathered will be analyzed and used to develop the field school in consideration with Indigenous values and beliefs. In the long term, developing the 'Land as Mentor' field school with Indigenous views in mind has the potential to increase awareness and understanding about

**Are fundamental movement skills related to physical activity behaviour in Nova Scotia preschoolers?**

Abby McDonald, Ashlee Parker, Natalie Houser, Michelle Stone; Dalhousie University

**Introduction:** Many key fundamental movement skills (FMS; running, throwing, catching, kicking, jumping) are established during the preschool years, a critical period for development of motor skill competence. One way in which preschoolers develop motor skill competence is through engagement in physical activity (PA). While the relationship between FMS and PA among preschoolers is established, there is little evidence on the FMS of Nova Scotia (NS) preschoolers, and whether significant associations with accelerometry-measured PA exist.

**Methods:** Data were collected on 113 preschool-aged children (age 3-5 years) from 16 early years centers across NS. The Test of Gross Motor Development-3, waist-mounted triaxial accelerometers (ActiGraph wGT3X+), and height and weight, were used to measure FMS, PA levels, and BMI respectively. Descriptive statistics will be used to describe group demographics, FMS (total, locomotor, and object control skills) and PA behaviour (sedentary behaviour (SB), light PA (LPA), moderate-to-vigorous PA (MVPA), and total PA (TPA)). Pearson product moment correlations will be used to examine relationships between FMS and PA, and linear regressions to further explore relationships between PA and FMS, adjusting for potential covariates (age, gender, BMI).

**Anticipated Results:** It is anticipated that FMS will be positively associated with PA, and negatively associated with SB. The results may also demonstrate significant age- and sex-differences in FMS and PA.

**Conclusion:** This study will provide novel information on the relationships between FMS and PA patterns of NS preschoolers, evidence that can be used to better support the healthy growth and development of young children in NS.

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**Does parent physical activity and sedentary behaviour relate to preschoolers' physical activity?**

Megan McFayden, Dr. Michelle Stone  
Dalhousie University

**Introduction:** Data from the most recent Canadian Health Measures Survey indicate that 73% of 3 to 4 year olds attain the recommended 180 minutes of physical activity (PA) per day. Yet by age 5, just 30% meet the PA requirements of 60 minutes of moderate to vigorous physical activity per day. Parents play an important role in shaping the healthy living behaviors of their children. Previous literature has demonstrated a positive association between parent and child PA, mostly in older children, and with self-reported PA data. No study has explored how parent-reported PA and sedentary behaviour (SB) are associated with subjectively and objectively assessed PA in Nova Scotia preschoolers.

**Methods:** Baseline data collected through the Physical Literacy in Early Years (PLEY) Project (REB#2016-3924) will be explored. These include data from parent surveys (demographics, physical activity participation (themselves and child), parent SB) and accelerometers (child PA). Descriptive statistics will describe parent and child demographic data. Pearson correlations will examine associations of parent PA and SB with children's subjectively measured (Model 1) and objectively measured (Model 2) PA data, controlling for covariates ( $p < 0.05$ ). Children's PA data will be categorized into tertiles, and logistic regressions used to predict the highest tertile of children's PA.

**Anticipated Results:** It is expected that parents with high levels of PA and low levels of SB will be more likely to have children with high levels of PA. It is also anticipated that parent-reported PA will have a

stronger relationship with objectively measured child PA.

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### **Effect of the cannabis component myrcene on inflammation in a rat model of arthritis**

Meagan McKenna, Jason McDougall; Dalhousie University

**Introduction:** Inflammatory arthritis (IA) is characterised by increased leukocyte trafficking and blood flow. Medical cannabis has aided in the relief of pain associated with arthritis; however, negative side effects exist. Myrcene, a cannabis terpene, has shown analgesic and anti-inflammatory properties in acute pain models. The aim of this study is to examine the anti-inflammatory effect of myrcene when given topically in a rat model of IA.

**Methods:** Male Wistar rats (300-417g) were injected with 50ul Freund's complete adjuvant (FCA) into the right knee joint on day 0. Joint oedema was assessed by measuring the ipsilateral knee joint diameter at baseline and on day 7 in FCA-injected and naïve rats. On day 7, separate cohorts of rats received a 50ul bolus of vehicle, low dose myrcene (0.1mg/kg) or high dose myrcene (0.5mg/kg) topically over the exposed knee joint. Blood perfusion and leukocyte trafficking of the knee microvasculature were assessed for a 1 hour period using laser speckle contrast analysis and intravital microscopy.

**Results:** Joint oedema was significantly greater on day 7 in FCA-injected rats compared to naïve animals (n=7-19,  $P<0.001$ ). Mean perfusion was not significantly different between myrcene-treated rats compared to vehicle (n=6-7;  $P>0.05$ ). Both myrcene doses significantly decreased rolling leukocytes ( $P<0.0001$ ); this decrease was dose-dependent ( $P<0.001$ ). Changes in adherent leukocytes were not significantly altered when compared to vehicle ( $P>0.05$ ).

**Conclusions:** These data provide evidence that myrcene can reduce some inflammatory parameters in the FCA animal model of IA. This may help alleviate pain and disease progression. Further investigation of anti-inflammatory mechanisms and the effect of myrcene on pain behaviour is required.

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### **Geographic Map of Brain Tumour Incidence In New Brunswick**

Anna McLean<sup>1</sup>, Dr. Andre LeRoux<sup>2</sup>

1, Dalhousie Medicine, New Brunswick; 2, Department of Neurosurgery, Saint John Regional Hospital

**Introduction:** The prognosis of many brain tumours is exceedingly poor and places heavy emotional and financial burden on the patients diagnosed with these neoplasms. While brain tumours carry some of the worst prognoses of all cancers, there exists very little epidemiological data collection on their distribution in the form of a registry, limiting the degree to which we are able to understand the aetiologies of these cancers. Additionally, many developed nations which possess a brain tumour registry only legally mandate the reporting of malignant neoplasms, which marginalizes the similarly severe negative impacts benign neoplasms can incur in patients.

**Methods:** To contribute to the epidemiological knowledge base of brain tumour incidence in Canada, this study will create a New Brunswick geographic brain tumour incidence map. Currently, the Saint John Regional Hospital possesses the personal health records of over 900 patients with radiologically and/or surgically diagnosed brain tumours. Through the Saint John Regional Hospital's Department of Neurosurgery patient chart records, the incidence of radiologically and surgically diagnosed brain tumours in New Brunswick will be geographically mapped according to the patients' recorded postal codes.

**Significance:** Such a map outlining brain tumour incidence in the province has not yet been constructed and could demonstrate clusters or patterns in brain tumour incidence and provide a foundation for further aetiology investigations of brain tumours in the province.

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## **Community radio and women's health: Radio broadcasting for teenage pregnancy prevention**

Sarah McLeod, Acadia University

**Introduction:** Through my graduate thesis research, I aim to explore the role a community radio station in Ghana, called Radio Ada, plays in promoting women's health. Specifically, looking at their health programming and community outreach around teenage pregnancy prevention. Community participation and ownership over programming is essential to Radio Ada's mission. Through facilitating conversations around teenage pregnancy within the community, Radio Ada can collaboratively develop programs that address the social, cultural, and economic factors that lead to teenage pregnancy.

**Methods:** This research will be a qualitative study. I plan to travel to Ghana for data collection. Data collection will include interviews with Radio Ada staff and a focus group with girls and women in the community. I am interested in incorporating visual methods in the interviews and focus group. Additionally, I am interested in content analysis of the radio programs through a feminist approach.

**Anticipated Results:** Through a health sociology lens, I anticipate to gain an understanding of the social conditions and gendered power imbalances within global health that contribute to high teenage pregnancy rates. Additionally, how Radio Ada uses this social understanding to create culturally appropriate and sustainable teenage pregnancy prevention initiatives.

**Significance:** This research would be significant at the community level to community radio staff and public health professionals in Ghana. Ideally, this research would provide insight into how to create a community-based transformative and empowering health campaign that addresses the core social and cultural factors leading to high teenage pregnancy rates.

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## **James Bay Cree youth health and engagement in health planning**

Nickoo Merati<sup>1</sup>, Jon Salsberg<sup>2</sup>, Mary Ellen Macdonald<sup>3</sup>, Robert Carlin<sup>4</sup>, Joey Saganash<sup>4</sup>, Martine Levesque<sup>3</sup>, Susan Law<sup>5</sup>

1, Faculty of Medicine, McGill University; 2, Graduate Entry Medical School, University of Limerick; 3, Faculty of Dentistry, McGill University; 4, Public Health, Cree Board of Health and Social Services of James Bay; 5, Institute of Health Policy Management and Evaluation, University of Toronto

**Introduction:** In 2014, the Cree Board of Health and Social Services for James Bay (CBHSSJB) supported the Iiyuu Ahtaawin Miyupimaatisiun Planning (IAMP) initiative to stimulate local prioritization and plans for health change across the region. While many healthcare challenges defined through IAMP are specific to youth (under 25 years of age), engagement of youths' perspectives in IAMP health planning to date has been limited. We hence seek to (1) review the evidence of Indigenous youth voices and engagement in health planning across Canada, and (2) understand how Cree youth perceive youth health, health priorities and their engagement in health planning.

**Methods:** As part of a CBHSSJB-McGill partnership to evaluate IAMP, this qualitative descriptive study uses a community-based participatory research approach. Following a review of the literature, ten Cree youth participated in two focus groups, and eight key informant interviews will be conducted with Cree youth community leaders. Thematic analysis will be conducted; inductive codes will be grouped into thematic categories.

**Anticipated Results:** This study will contribute knowledge regarding how Cree youth perceive health, and preliminary insights on strategies to engage youth for better health and healthcare. The researchers expect that the youth perspectives offer important insights that will help create new and adapt existing material to

assist local and regional leadership in priority setting.

**Significance:** This project will help reduce the knowledge gap on Indigenous youth voices in health and healthcare in Canada, and offer recommendations related to engaging young Indigenous people in health planning.

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### **Identification of BChE as a novel mediator of radioresistance and aggression in prostate cancer**

Michelle Meringer<sup>1</sup>, Jessica Ray<sup>2</sup>, Xiaoyong Huang<sup>1</sup>, Stanly Liu<sup>2,3</sup>

1, Sunnybrook Research Institute, Sunnybrook Health Sciences Centre, Toronto, Canada; 2, Department of Medical Biophysics, University of Toronto; 3, Department of Radiation Oncology, University of Toronto

**Introduction:** Prostate cancer (PCa) is the most prevalent form of cancer among men in Canada, with 1 in 8 men expected to be diagnosed in their lifetime. Advanced PCa has a 31% 5-year relative survival rate, along with a 5-year recurrence rate of 40% following treatment. As ionizing radiation (IR) therapy is the primary treatment of PCa, local recurrences following IR is a pattern of treatment failure attributable to the radioresistance of cancer cells.

**Methods:** RNA screens were performed to identify and characterize the phenotype of RNAs dysregulated in radioresistant (IRR) prostate cancer. mRNA arrays performed in radioresistant cell lines identified several RNAs as candidates that may function to promote tumour survival after IR treatment. The focus of this project is on butyrylcholinesterase (BChE), an mRNA whose levels were decreased by 96% in IRR PCa.

**Results:** After identification, the dysregulated expression levels of the RNA found in IRR PCa were induced in radiation sensitive PCa cells. Assays were then performed to assess the effects of each RNA on cell proliferation, invasion and migration through extracellular matrices, clonogenic survival, and cell cycle distribution, with and without radiation.

**Conclusions:** Knockdown of BChE mRNA increases clonogenic survival and cell proliferation following radiation treatment, and increases the invasive capacity of prostate cancer cells. The results suggest that downregulation of BChE in IRR cells is a major contributor of radiation resistance and of the aggressive phenotype.

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### **Exercise prescription in the emergency department: patient perceptions**

Fiona Milne<sup>1</sup>, Dr. Kalen Leech-Porter<sup>2</sup>, Dr. David Lewis<sup>3</sup>, Jacqueline Fraser<sup>3</sup>, Dr. Stephen Hull<sup>3</sup>, Dr. Paul Atkinson<sup>3</sup>

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**Introduction:** Exercise prescription has been shown to reduce morbidity in several chronic health conditions. However, patient attitudes around the prescription of exercise in the emergency department have not been explored. The aim of our pilot study is to explore patients' willingness and perceptions of exercise being discussed and prescribed in the ED.

**Methods:** This study is a survey of patients who had been previously selected for exercise prescription in a pilot study conducted at a tertiary care ED. The intervention group were given a standardized written prescription to perform moderate exercise for 150 minutes per week. Participants answered a discharge questionnaire and were followed up by telephone interview 2 months later. An interview of opinions around exercise prescription was conducted, including non-closed interview questions and Likert scale. Patients rated various prescription domains on a Likert scale from 1-5. Median values (+/-IQRs) are presented, along

with dominant themes.

**Results:** 17 people consented to exercise prescription and follow up surveys. 2 were excluded due to hospital admission. 15 participants were enrolled and completed the discharge survey. Two-month follow up survey response rate was 80%. Patients rated the detail given in their prescription as 5 (+/-1). Helpfulness of prescription was rated as 4 (+/-2). Likelihood to continue exercising based on the prescription was rated as 4 (+/-2). 11/12 participants felt that exercise should be discussed in the Emergency Department either routinely or on a case-by-case basis. 1 participant felt it should not be discussed.

**Conclusion:** Our study demonstrates that most patients are open to exercise being discussed during their Emergency Department visit. The prescription format was well-received.

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### **Dictyostelium discoideum as a Model System to Study LITAF Function**

Calli Minor, Trent University

**Introduction:** Lipopolysaccharide-induced tumour necrosis factor- alpha factor (LITAF) is linked to a variety of cellular processes from endosomal trafficking to the immune response. LITAF is highly expressed in the peripheral nervous system, and as a result, mutations are linked to the neurodegenerative disorder Charcot-Marie-Tooth disease. Dictyostelium discoideum is a eukaryotic model organism used to study human lysosomal and trafficking diseases, which often severely impact the nervous and immune systems, suggesting it may be an ideal system for studying LITAF. As well, D. discoideum contains a homolog of LITAF (DdLITAF) with high similarity in the functional domain of the protein.

**Methods:** D. discoideum cells containing different DdLITAF constructs, including GFP- and Myc-tagged LITAF, as well as a dominant-negative version of DdLITAF, will be used to test localization and function to compare to human LITAF. Assays during growth and developmental stages of the D. discoideum life cycle will be used to determine function.

**Anticipated Results:** Human LITAF localizes to the endocytic pathway in a range of cell types, suggesting DdLITAF will localize to this pathway if it functions similarly. As well, DdLITAF is expressed most highly during growth, so impairing function through a dominant-negative approach will likely have the greatest effect during this phase.

**Significance:** LITAF is highly conserved amongst eukaryotes, including humans, and ubiquitously expressed in different cell types, suggesting a vital function. D. discoideum is more amenable to genetic manipulations than mammalian cell cultures, and as such establishing it as a model to study LITAF would inform the molecular mechanisms related to its function and how mutations cause disease.

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### **Youth with a Physical Disability from Rural Places: Experiences of Access to Leisure & Education**

Lauren Moritz, Dalhousie University

**Introduction:** Youth with physical disabilities often experience barriers to leisure activities and education including barriers within physical and social environments. Relatively little is known about the experiences of youth with a physical disability who live in rural places. This study's goal is to gain in-depth understandings of how youth with a physical disability living in rural places experience barriers and opportunities to accessing leisure and education. Participation in leisure is important for emotional, mental, and social health, and education is a key determinant of health. The research questions are: What are key barriers and opportunities to leisure and education experienced by youth with a physical disability who live in a rural place? What types of changes (if any) do they recommend to social and physical environments to address any perceived barriers?

**Methods:** Participants will be recruited through relevant agencies that serve youth with physical disabilities in rural Nova Scotia. Youth who identify as living in a rural place with a physical disability will be recruited.



Eight participants will be recruited and interviewed over the phone due to potential transportation challenges they may face in participating in face-to-face interviews at a designated place.

**Anticipated Results:** The findings will highlight the experiences of this population and add to the literature given that relatively little is known about their experiences accessing leisure and education.

**Significance:** Youth with physical disabilities are often left out of rural studies, and it is important to understand their experiences of access to leisure and education in order to address potential barriers and support initiatives that provide opportunities to access for this population.

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### **The Effect of Yoga Duration on Mood and Cognitive Function**

Alyssa Neville, Dalhousie University

**Introduction:** Despite the demonstrated mental and physical health benefits of physical activity (PA), population PA levels continue to decline. Yoga has gained popularity in recent years and is a light-moderate form of PA that is unique to other forms of exercise, given its focus on breathing and meditation. To date, few studies have explored the minimum yoga session duration needed to produce mental health and cognitive benefits. The objective of this study is to explore the effect of a 20-minute, 60-minute, and 90-minute Hatha yoga session on mood and cognitive function in adults between 18 and 65 years of age.

**Methods:** The proposed study is a single-group, treatment randomized, repeated measures design. Participants will be exposed to all three conditions and measures of mood and cognitive function will be assessed pre- and post-session. The Profile of Mood States-Short Form questionnaire will be used to evaluate mood and the Flanker and Stroop Tasks will be used to assess cognitive function (concentration and attention, respectively).

**Anticipated Results:** It is expected that the 90-minute session will confer the greatest improvements in mood, however, given the anticipated “boredom” factor, the shorter 60-minute session is hypothesized to confer the greatest improvements in cognitive function.

**Significance:** The goal of this study is to explore the optimal yoga duration to produce mental health and cognitive benefits, thus informing future PA prescriptions. If individuals could attain the same health benefits in a 20-minute session as they could in a 90-minute session, it is more likely that they would find the time to incorporate yoga into their daily lives.

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### **Ligand binding properties of the flavohemoglobin in the waterborne parasite *Giardia intestinalis*.**

Novin Nezamololama, Environmental and Life Sciences, Trent University

**Introduction:** *Giardia* is a waterborne parasite that infects the small intestine of mammals including humans causing symptoms such as diarrhea and abdominal pain. This parasite causes over 280 million symptomatic infections per year. Current anti-*giardial* drugs show low efficacy and side effects such as alteration of the normal intestinal flora. Despite lacking mitochondria and respiratory chain which are required for heme biosynthesis, *Giardia* encodes several heme proteins including a flavohemoglobin (gFIHb). The gFIHb is responsible for detoxifying nitric oxide produced by the host's body to the less harmful nitrate. This research aims to study the ligand binding properties of gFIHb.

**Methods:** Recombinant gFIHb was expressed by inserting the gFIHb DNA into the *E. coli* bacteria. UV-Visible spectroscopy was applied to determine the ligand binding properties of gFIHb by using optical titration. Ligands including sodium azide, cyanide and imidazole-based ligands were used to conduct this experiment.

**Results:** Myoglobin has high binding affinity for sodium azide and cyanide, while it has low binding affinity for bulkier ligands such as imidazole-based ligands. However, gFIHb tends to have a relatively higher

binding affinity for imidazole-based ligands. Future study will include probing the ligand binding properties of *E. coli* Hmp, since it is desirable to inhibit the parasite while leaving a commensal microbe unaffected. **Significance:** This research may lead to discovering a new drug which can inhibit gFlHb without harming the normal intestinal flora. Furthermore, it will contribute to our understanding about *Giardia*'s survival mechanism in the host's body.

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### **Mobility of Upper Body Goaltender PPE**

Austin Nichol, Dalhousie University

**Introduction:** Ice hockey goaltenders wear large ensembles of personal protective equipment (PPE) to disperse impact forces from pucks, sticks and players alike. Chest protectors and other similar PPE have been found to be a major limitation for upper body movement, and thus can make it difficult for goaltenders to block pucks directed at their net. The NHL has proposed a modification to their current regulations which will involve a reduction in the sizing of goaltenders' PPE. This modification may result in an alteration of how this equipment affects upper body mobility.

**Methods:** We seek to recruit twenty participants whose heights are within the range of 1.72-1.85 metres. Participants are excluded if they complain of current/recurring shoulder pain. Participants will be asked to perform a series of joint range of motion tests, including shoulder flexion, shoulder horizontal flexion, shoulder abduction and elbow flexion. All four measures will be conducted three times for each of four experimental conditions in a randomized order. The four conditions include two currently used chest protectors, one chest protector meeting the new standards proposed by the NHL and a control condition in which participants wear standard athletic wear.

**Anticipated Results:** We anticipate that the decreased size of the new chest protector will result in reduced limitations on shoulder and elbow joint mobility. Thus, we hypothesize that joint ROM will be larger in the new chest protector compared with the other models.

**Conclusion:** The results of this study may identify the performance restrictions that have plagued goaltender's in the past and will quantify if the new chest protector improves goaltender mobility.

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### **Taboo Talk: Addressing Sexual Health in Acute Care**

Rachel Ollivier<sup>1</sup>, Dr. Megan Aston<sup>1</sup>, Dr. Sheri Price<sup>1</sup>

<sup>1</sup>, School of Nursing, Dalhousie University

**Introduction:** Sexual health is an important aspect of health; however, in acute care settings it often goes unaddressed by both health care providers and patients due to stigma, taboo, fear of embarrassment, or uncertainty. Lack of attention to sexual health has been stated as a legitimate concern for patients across the lifespan, though there remain gaps in implementing sexual health discussion into practice in acute care settings.

**Methods:** Feminist post-structuralism (FPS) is used to examine the meaning of experience that is personally, socially and institutionally constructed through relations of power. FPS will also be applied to understand how sexual health discourses are negotiated in the acute care setting.

**Anticipated Results:** The application of a feminist post-structural lens to sexual health care in the acute care setting may be used by health care professionals to understand, question and challenge how social and institutional beliefs, values, and practices surrounding sexual health are experienced by health care professionals and patients.

**Significance:** This theoretical approach could lead to identifying possibilities for change in acute care settings that are inclusive and supportive of sexual health care. In addition, the inclusion of sexual health

requires a collaborative approach and therefore must incorporate interdisciplinary involvement in the evolution of health care practice and policy.

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### **Assessment of a parent targeted eLearning resource focused on optimizing the neonatal environment**

Adele Orovec, Dalhousie University

**Introduction:** In Canada, 8% of neonates are born preterm at less than 37 weeks gestational age. As preterm birth increases the risk of morbidity and mortality for these infants, most will be admitted to the neonatal intensive care unit (NICU) where their care team is also tasked with creating an NICU environment for optimal development. While parents are important caregivers in the NICU and have the ability to help optimize their infant's environment to support development, they are currently an underutilized resource. Thus, the aim of this study was to explore the usability and accessibility of an eLearning platform targeted to parents of infants in the NICU to increase active parental participation in creating an optimal NICU environment.

**Methods:** We systematically reviewed the literature regarding an optimal NICU environment, synthesized the content, and have created a testing platform. To better understand user acceptability and experience, we will utilize usability testing methods "think aloud" to conduct a series of testing cycles to evaluate user performance and satisfaction with the eLearning resource. We will also conduct focus groups with parents and health care providers to gather further feedback, which will be used to revise the learning module.

**Results:** Preliminary results show that parents are excited about the eLearning platform and participant input has been utilized for continuous improvement of the resource that has been applied for future revisions and testing.

**Conclusion:** Further testing is needed to optimize the parent's learning experience, usability and acceptability. We anticipate that this eHealth module will empower parents to play a more active role in creating and sustaining an optimal NICU environment for their infant.

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### **Analysis of Student Perceptions of Risk and Patterns of Substance Use in a University Population**

Kayla Parsons, Meg Ternes; Saint Mary's University

**Introduction:** Substance use has been connected to a wide array of issues, including physical and mental health, leading to much research on the topic of substance use predictors in an attempt to identify target behaviours for early intervention. However, few studies have examined perception of risk as a predictor of substance use. The present study looks at how perceptions of risk differ between substances, how these differences are related to patterns of substance use among university students, and whether these risk perceptions are accurate representations of the actual risks associated with certain substances

**Methods:** Substance use behaviours involving alcohol, marijuana, cocaine, ecstasy, and prescription opioids will be compared to perceptions of risk of the respective substances via self-report measures in a sample of university students. Risk perception accuracy will be examined by comparing reported risk perceptions to reported adverse experiences resulting from the use of the respective substances.

**Anticipated Results:** It is expected that substances viewed as more risky will be used less often by fewer students than substances viewed as less risky. It is also expected that perceptions of risk will not accurately reflect their adverse experiences, especially for those substances perceived as least risky.

**Significance:** These results will inform the current model of substance use prevention and encourage discussion and ideas about how to effectively educate assumptions about risk.

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## **Health Outcomes for Women Participating in Residential Mother-Child Programs Within Prisons**

Martha Jane Paynter, Dalhousie University

**Introduction:** In 2001, the federal Correctional Service of Canada implemented the Mother-Child Program (MCP), through which children may live full-time, on-site with their mothers in federal carceral facilities. The program aims to support positive mother-child relationships for incarcerated women and their children. Incarceration increases risk of inmate injury, illness, and mortality. Proponents of MCP believe keeping mothers and children together prevents psychological, physiological, and developmental harm to the child. Women are the fastest growing population in Canadian prisons, and most incarcerated women are mothers. This review examines the maternal health outcomes of MCP participants.

**Methods:** A scoping review of the literature pertaining to women's health outcomes for participants in Mother Child programs in carceral facilities. The search strategy included relevant databases (Pubmed, CINAHL, PsycInfo) and hand-searches of references available in key papers using relevant key words/MeSH headings.

**Results:** The state of knowledge regarding maternal health outcomes of MCP participants is limited. There is no published evaluation of the MCP in Canada, and available evidence suggests use is low and declining. Outside of Canada, available research suggests a lack of quality investigation of the impact of the residential MCP experience itself on maternal health. The review found no studies of breastfeeding outcomes.

**Conclusions/Significance:** Health is a protected right of prisoners. The MCP speaks to the correctional interest in supporting the mother-infant, and yet there is a dearth of evaluation of its impact on maternal health outcomes. This paper identifies future implications for health and justice policy, nursing practice and inter-disciplinary research.

## **Food Beyond Borders: Experience of International Students at the University of Manitoba**

Bhanu Pilli, University of Manitoba

**Introduction:** Post-secondary students who move to a new country experience a drastic shift in food landscape, often resulting in unhealthy dietary adaptations. The purpose of the study was to explore perceptions of international students with regard to their eating behavior, food acquisition patterns and challenges, and dietary patterns.

**Methods:** Using a semi-structured question guide, five focus groups were conducted with a total of 10 male and 20 female university students from a variety of global regions, with a mean age of 22.1 +/- 3.5 years. An inductive thematic approach was used for qualitative analysis. Participants completed a three-day food record that was analyzed for compliance with Canada's Food Guide for Healthy Living.

**Results:** While many international students' express desire to maintain home country food traditions, their new independent student status and novel food environment lead to unhealthy dietary habits. Students reported that eating habits were influenced by limited food skills, busy schedules, competing academic priorities, and fast food environments. Prioritizing convenience foods resulted in monotonous and less-than-healthy diets and these perceptions were reflected in the proportion of their diets comprised of "other" less nutritious foods, and low servings of fruits and vegetables, milk products and alternatives, and grain products.

**Conclusions/Significance:** International post-secondary students face dual challenges of transitioning into independent living while moving away from immediate family support, both of which have an implication on eating habits and food acquisition. This study demonstrates the need for incorporating resources and programs in the university and community to help increase food awareness and improve food skills.

## **Women's perspectives of barriers and facilitators to physical activity in the postpartum period**

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1, Faculty of Medicine, Dalhousie University; 2, Faculty of Family Medicine, Dalhousie University; 3, Perinatal Epidemiology Research Unity IWK Health Centre

**Introduction:** Despite the many benefits of physical activity (PA) in the postpartum period, women's PA levels decline after childbirth.

**Objectives:** Conduct a systematic review in order to: 1) identify barriers and facilitators to PA in healthy postpartum women and 2) to estimate the number of women who report these barriers and facilitators to PA.

**Methods:** Four electronic databases (PubMed, CINAHL, Web of Science, and PsycINFO) were searched to identify relevant studies. Potentially applicable quantitative, qualitative, and mixed-methods abstracts were identified by two reviewers and subsequently underwent full-text review. Studies that met the following criteria were included in analysis: studies written in the English language, assess postpartum women up to 12 months post-childbirth, and those that explicitly ask for women's perceptions of barriers and facilitators to PA.

**Results:** The most commonly cited barrier to physical activity in the postpartum period was time followed by reasons relating to their new baby or children. The most commonly cited facilitator to physical activity was social support which included support of their spouse, family, and friends.

**Conclusions:** The results of this study provide a better understanding of the unique barriers and facilitators faced by postpartum women to engage in PA in the postpartum period. This information is essential in the future development of strategies and programs to support women in engaging in PA after childbirth – efforts which will may improve women's physical and emotional health immensely.

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## **Attention and Distraction during Exercise: Measure Development and Validation**

Colin B. Pridy<sup>1</sup>, Margo C. Watt<sup>1,2</sup>, Sherry H. Stewart<sup>1</sup>

1, Dalhousie University; 2, St. Francis Xavier University

**Introduction:** Anxiety sensitivity (AS) is fear of arousal-related bodily sensations. High AS increases risk of anxiety-related psychopathology (Reiss, 1991). Those with high AS may avoid exercise due to feared arousal sensations (Smits et al., 2010). Exercise as interoceptive exposure (IE) has been used to reduce AS (e.g., Watt et al., 2006) but distraction may reduce its effectiveness (e.g., Foa & Kozak, 1988). There is no measure of exercise-related cognition, but a model by Stevinson and Biddle (1998; 1999) crosses attentional focus (internal/external) and task relevancy (relevant/irrelevant) dimensions to yield four cognitive styles. We developed/validated an Attention and Distraction during Exercise Questionnaire (ADEQ) to tap these four cognitive styles.

**Method:** We used exploratory [n = 326; M (SD) age = 23.98 (9.07) years] and confirmatory factor analyses [n = 875; M (SD) age = 20.04 (3.04) years] to investigate the ADEQ's structural validity. We examined relations of each subscale with AS (measured via the ASI-3; Taylor et al., 2007) to test the ADEQ's construct validity.

**Results:** We obtained a structurally valid, 18-item ADEQ with four adequately internally consistent factors aligned with Stevinson and Biddle's model. Consistent with one of two alternative hypotheses, we found a significant association between AS and an internally-focused, task-relevant cognitive style during exercise, which we posited is due to high AS individuals' tendencies to attend to and catastrophize about feared exercise-induced arousal sensations.

**Conclusion:** The ADEQ is a brief, well-validated, theoretically-grounded measure of cognitive style during exercise suited to clinical and research applications. Future work could examine links to AS subdimensions or exercise frequency.

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## **Writing in Medical Education: A Student Perspective**

Emily Pye<sup>1</sup>, Diana Gustafson<sup>1</sup>

1, Memorial University of Newfoundland

**Purpose:** LCME requires that faculties of medicine include specific instruction in written communication skills. This presentation will report the findings of a survey of medical students that examined the relationship among students' 1) self-reported writing competence, 2) self-regulated learning (SRL) strategies, and 3) attitudes towards writing.

**Methods:** An online survey was distributed in the fall and winter semester to all 320 medical students enrolled in the undergraduate medical program at Memorial University. The four-part survey was constructed using SurveyMonkey, and included scales that measured writing competence, SRL strategy use, and attitudes towards writing. Recruitment e-mails were sent out a week before, and after, delivering short information sessions to selected classes. Data were imported into SPSS and analyses were run using descriptive and inferential statistics.

**Results:** The sample (N = 53) consisted of first (n = 15), second (n = 19), and fourth (n = 19) year medical students. Most students ranked their writing competence high (M = 3.80, SD = 0.60), yet expressed dissatisfaction with the feedback (60%) and writing instruction (64%) they received from their instructors. The use of SRL strategies was high (M = 3.64, SD = .51) and positively correlated with perceived writing competence ( $r = .49$ ,  $p < .01$ ). Many students saw the value of writing in medicine (67%), and expressed interest in attending workshops that could improve their writing (43%).

**Conclusions:** Student perspectives may inform curricular change, specifically the need to make written communication skills explicit in medical education. The results suggest that workshops to improve writing, and more clear and consistent feedback from teaching faculty, would be welcomed by students.

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## **The medical school learning environment and professional identity development of medical students.**

Jinelle Ramlackhansingh<sup>1</sup>, Fern Brunger<sup>1</sup>

1, Memorial University of Newfoundland

**Introduction:** Professional identity formation starts 'young' in medical school, with the student's own personal identity and the medical education learning environment playing a role. A powerful factor in the learning environment is the hidden curriculum. This presentation reports on research on how the hidden curriculum shapes experiences of professional identity development among pre-clerkship students.

**Methods:** This is an ethnographic case study of experiences of the hidden curriculum on professional identity development among pre-clerkship students at one medical school. It will allow examination of how particular cultural meanings and associated values related to professional identity are formed. Qualitative data collection methods include focus groups, interviews with faculty and administration, and observation of faculty governance meetings, classes and events where identity is discussed or emphasized (e.g., White Coat Ceremony). This is supplemented by critical discourse analysis of faculty and medical professional policies and guidelines related to professionalism.

**Anticipated results:** This research will provide detailed accounts of the complex factors that shape medical professional identity. The hidden curriculum of undergraduate medical education will be exposed; how it manifests and its effects on medical students will be elucidated.

**Significance:** This is the first Canadian in-depth examination of culture and power in relation to professionalism in pre-clerkship years. A report to University's medical educators will take the form of a synthesis of the evidence and recommendations on how to support professionalism in the pre-clerkship environment.

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## **Cox proportional hazard vs. accelerated failure time models in clustered time to event data analysis**

Mike Reid<sup>1</sup>, Kaitlin Sibbald<sup>1</sup>  
1, Dalhousie University

**Introduction:** The Cox Proportional Hazards (CPH) Model is the most commonly used time-to event model used in epidemiology. There are, however, alternative models that which may be preferable. One is the Accelerated Failure Time (AFT) Model. This study will explore the use of the AFT model for clustered, time-to-event analysis, and compare it to the more commonly used CPH model. We will compare the results generated by these two models when answering the following question: Does community of residence affect rates of unplanned repeat hospitalization upon discharge from hospital in Nova Scotia?

**Methods:** Using hospital discharge abstract data, we will estimate a Weibull AFT and semi-parametric CPH models predicting the rate (or time until) an unplanned repeat hospitalization, as a function of age, sex, last year of life, comorbidities and community of residence. Community effects will be estimated using a random intercept, while the effects of other covariates will be estimated as fixed effects.

**Anticipated Results:** We hypothesize that the two models will produce similar results, but that AFT estimates will be more precise as follow up time differs across our subjects, and the CPH model does not employ a parametric survival distribution. Since the AFT model employs a parametric survival function, it is better suited to modelling data in which follow up times vary. AFT Models also generate estimates of effects with a more intuitive interpretation, facilitating communication of results.

**Significance:** We hope to show that the AFT model provides an attractive alternative to the CPH for calculating risk in time-to-event analysis, facilitating more precise estimation of the hazard function and covariate effects, along with easier to interpret results.

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## **Exploration of Interventions on Childhood obesity in Canada: An Interdisciplinary Perspective**

Haopu Ren<sup>1</sup>, Patricia Rodney<sup>1</sup>  
1, University British Columbia School of Nursing

**Introduction:** Childhood obesity in Canada grew rapidly and this trend is widely agreed being strongly associated with the expansion in business behaviours dealing with unhealthy foods. There are initiatives made by governments of developed countries and independent societies that aimed to constrain such commercial behaviors.

**Methods:** This paper 1) reviewed provincial and federal efforts to limit the marketing activities in the past two decades; 2) introduced and discussed similar policies in other developed countries and the intended and unintended impacts on the well-being of targeted consumers; 3) explored the feasibility of economic and financial policies in Canadian context to minimize the negative effect of irresponsible marketing on childhood obesity and improve the prevalence of childhood obesity from an interdisciplinary approach.

**Results:** Domestically, Quebec has a leading position in terms of constraining the marketing due to the introduction of legally binding regulations. Internationally, the experience of United Kingdom is considered remarkable and potentially transferrable to Canadian context. However, it is difficult to find government programs that thrive to improve the situation through macro- and microeconomic interventions or address social determinants of childhood obesity.

**Conclusion:** The local government is suggested to adopt comprehensive approach to develop policies for minor consumers and their families, and for business involved to develop sustainably. Also, a regular review on current policies is needed in response to the rapid growth of communication technologies. It is possible to achieve a “win-win” situation for stakeholders, with the government as a leader and other institutions making

### **The Influence of Playgrounds on Childhood Physical Activity: A Scoping Review**

Brenna Richard<sup>1</sup>, Dr. Joan Turner<sup>1</sup>  
1, Mount Saint Vincent University

**Introduction:** Affordance theory suggests that environmental features are perceived to allow or deny certain behaviours and actions (Gibson, 1986). Application of this theory to children's outdoor play behaviour demonstrates that elements such as surfaces, objects, and layouts invite certain types of play behaviour (Gibson, 1986). Recent attention to the need to increase physical activity (PA) in children encourages novel approaches to the study of children's play as it promotes PA. As playgrounds are common play spaces designed for children, a scoping review of research focused on playgrounds and PA was conducted. This poster presents the analysis of the research through the lens of affordance theory.

**Methods:** A scoping review of the research literature identified 13 research articles that examined playgrounds and PA. Results of the studies were examined for content that relates to the influence of specific characteristics of the environment on PA consistent with affordance theory, including playground markings, green space, loose parts and structural design.

**Results:** Results of the studies included in the review indicate limited attention to the specific characteristics of the playgrounds that invite children's PA. However, one feature that stands out from the review and influences the level of PA is the location (context) of the playground: natural or built.

**Conclusions:** The results of this analysis show that studies have focused more on the outcome variable of PA rather than the specific features or mechanisms of the playground that invite the PA. What are children seeing when they look at a play space that entices them to be active? Further investigation is proposed to identify specific play space elements to encourage children's PA on playgrounds.

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### **The effects of short-term cervical muscle exercise training on standing balance in young adults.**

Erik A. Richard<sup>1</sup>, Madison P. Campbell<sup>1</sup>, Dr. Janice Moreside<sup>1</sup>  
1, Dalhousie University

**Introduction:** The human neck is crucial in standing balance. Deep neck flexor muscles maintain neck stability and head posture but are typically suppressed in the general population. Neck extensor muscles also play a key role in posture control as they synergize with the neck flexors to stabilize the neck. While these muscles are extremely sensitive to fatigue, they are also dense with proprioceptive receptors that influence posture and spine stability by feeding positional information to the brain. The proposed study aims to explore the effects of cervical muscle exercise training on standing balance in young adults.

**Methods:** 16 participants, recruited from Dalhousie University, will be randomly assigned to control or test groups. The test group will do a 2-week specialized neck exercise program, 3 times per week. Standing balance will be measured before and after the training period with an AMTI force plate to assess center of pressure displacement (COP) and center of pressure velocity (COPV). Neck endurance of the deep flexors and extensors will be measured before and after the intervention.

**Anticipated Results:** It is anticipated that COP and COPV will positively change after 2 weeks of neck exercise. Potential changes may result from improved muscular coordination and neural control of the neck, positively affecting balance by improving proprioception. It is also anticipated that neck endurance will improve.

**Significance:** The role of the neck in balance and proprioception has not been deeply explored. Improved knowledge in this area may lead to research opportunities with older adults, athletes and those with balance



disorders.

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### **Evaluation of Mobile Applications for Parents of Infants in the NICU: A Systematic Review**

Brianna Richardson<sup>1,2</sup>, Justine Dol<sup>2,3</sup>, Kallen Rutledge<sup>2</sup>, Joelle Monaghan<sup>2</sup>, Adele Orovec<sup>2,4</sup>, Katie Howie<sup>2</sup>, Talia Baotes<sup>2</sup>, Dr. Mike Smit<sup>5</sup>, Dr. Marsha Campbell-Yeo<sup>1,2</sup>

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**Introduction:** Parents of preterm infants use their smartphone on average 20 hours per week to search for health information. However, websites targeted towards NICU parents were found to be of poor to moderate quality and there is little known about the quality of mobile applications (apps) for NICU parents. Thus, the aim of this review was to evaluate apps available to parents of infants in the NICU for quality of information, usability, and credibility.

**Methods:** We systematically searched Apple App Store and Google Play Store using 49 key terms (i.e. “preterm infant”). Three tools were used to evaluate app quality, usability, and credibility: Mobile Application Rating Scale (MARS); Patient Education Materials Assessment Tool for Audiovisual Materials (PEMAT-AV); and Trust it or Trash It.

**Results:** Initial search yielded 6579 apps, with 49 apps eligible. After full review, 27 apps were included for analysis. Using MARS, most apps (n= 13, 48%) received an acceptable score on overall quality (i.e. >3.0 out of 5.0), with six (22.2%) receiving greater than 4.0. Eleven apps (40.7%) received a PEMAT-AV score between 51-75% on understandability and eleven apps (40.7%) received 76%-100% on actionability. Trust It or Trash It deemed 18 apps (67%) as ‘trash’ for reasons including no identification of sources or lack of current information, with only 9 (33.3%) deemed trustworthy.

**Conclusions:** This evaluation revealed that out of the small number of available apps targeted towards NICU parents, less than half were considered as acceptable educational material, yet over two-thirds of the apps were found to have issues regarding credibility and less than one quarter were considered high quality. The apps currently available for NICU parents remains lacking and of concern.

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### **Examining the influence of sex on auditory change detection as a biomarker in early-phase psychosis**

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1, Dalhousie University; 2, Mount Saint Vincent University

**Introduction:** Research has consistently shown a deficit in auditory change detection, known as mismatch negativity (MMN), in individuals diagnosed with chronic schizophrenia. Research has also shown this deficit at an earlier phase of the illness, called early-phase psychosis (EP), which has generated interest in whether this deficit may be a biomarker of schizophrenia. What remains unclear, however, is whether differences exist between males and females in auditory change detection. Some studies have examined this connection and have suggested a greater reduction in males than females, while other studies have found no difference. To clarify this inconsistency, further research is needed. Thus, the goal of this project is to examine auditory change detection in both males and females with EP.

**Methods:** Thirty-six participants (18 female, 18 male) aged 18-36 with diagnosed EP will be recruited through the Nova Scotia Early Psychosis Program and will be compared to 36 age and sex-matched healthy controls from the community. To measure MMN, two paradigms will be implemented and recorded with an electroencephalogram.

**Anticipated Results:** We anticipate that the MMN amplitude of female EP participants will be greater than

male EP participants within both paradigms, with both EP groups exhibiting reduced MMN amplitudes relative to their healthy control counterparts.

**Significance:** This research has the potential to solidify the use of MMN as a biomarker of schizophrenia as well as contributing to our understanding of how psychosis is the same and/or different across sexes. Furthermore, this research can provide us with information to best increase quality of life by providing efficient sex specific mental health care to individuals in need.

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### **Community Variation in Hospital Length of Stay: An Indicator of Community Care Integration**

Alysia Robinson<sup>1</sup>, George Kephart<sup>1</sup>, Leslie Anne Campbell<sup>1</sup>, Grace Warner<sup>1</sup>, Pantelis Andreou<sup>1</sup>  
1, Dalhousie University

**Introduction:** Unnecessarily long length of stay (LOS) in hospital is costly and potentially harmful to patients. Community differences in formal and informal supports available to patients at discharge may affect LOS, especially for unplanned hospitalizations where advanced arrangements are less feasible. Our aim is to estimate the extent that the community to which patients are discharged affects LOS for unplanned hospitalizations in Nova Scotia, and if certain communities stand out as having higher or lower LOS than expected.

**Methods:** This is a descriptive study employing hospital discharge abstract data. The target population is Nova Scotian residents, residing in 78 communities (defined by postal code Forward Sortation Areas), aged 30 years and older, with at least one unplanned inpatient hospitalization between 2010-2014. The unit of analysis will be unplanned inpatient hospitalizations. The outcome variable will be adjusted LOS (ALOS), calculated as the difference between observed LOS and expected LOS (ELOS) (based on patient medical complexity, procedures and demographics). Using a random intercept regression model, we will estimate the variation in ALOS explained by community of residence. If community variation in ALOS is significant, we will estimate and map which communities have a longer or shorter ELOS.

**Anticipated Results:** We anticipate that there will be variation across communities in ALOS.

**Significance:** This project will contribute to community based healthcare planning. It will assist policy makers and researchers to identify areas where hospital LOS is longer or shorter than expected.

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### **iHEAR: iPad point of care diagnostic audiometry in Halifax elementary schools.**

Ashley Robinson<sup>1</sup>, Laura Allen<sup>1</sup>, Yolanda<sup>2</sup>  
1, Dalhousie University; 2, Evong

**Introduction:** The purpose of the “iHear” study is to screen for hearing impairment in grades 1-2 children in Halifax. We aim to determine the incidence of hearing loss and improve rates of early intervention. In 2015, the Ottawa iHear team developed and tested a novel method of auditory testing. The project will be expanded to Halifax for the 2016/2017 school year. Interactive testing is performed through an iPad application called the “Shoebox Audiometer” which enables children to seek a sound stimulus through a game that assesses hearing sensitivity.

**Methods:** In schools, the Halifax team will test 250-500 grades 1-2 children. Those with positive screens will be referred to an audiologist for workup of the hearing loss.

**Results:** iHear has effective results. Since January 2015, Ottawa has screened over 251 children. Twelve screened positive and were offered appropriate intervention. The application fills a large void. There is currently no automated hearing test technology for children in Canada. Based on Ottawa’s results, we estimate that this study will improve our understanding of hearing loss in Halifax and allow for earlier

detection and treatment. iHear intends to set the stage for the integration of iPad audiometry as a universal screening tool for children Canada-wide.

**Conclusions:** Hearing plays a critical role in the development of communication skills. Undiagnosed hearing loss interferes with social, emotional, and cognitive development. Auditory testing is often expensive and labour intensive. Early childhood is a critical period for screening due to the lasting impact of hearing loss and the profound difference made by intervention.

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### **Healthcare Providers' Views Around Deprescribing in Nova Scotia: Preliminary results**

Ellie Salsbury<sup>1</sup>, Jennifer E. Isenor<sup>1</sup>, Natalie Kenni-Kaulbach<sup>2</sup>, Ruth Martin-Misener<sup>3</sup>, Fred Burge<sup>2</sup>, Sarah Burgess<sup>4</sup>, Heather MacLean<sup>3</sup>, Olga Kits<sup>5</sup>, Emily Reeve<sup>6</sup>, Anne Marie Whelan<sup>1</sup>  
College of Pharmacy<sup>1</sup>, Department of Family Medicine<sup>2</sup>, School of Nursing<sup>3</sup>, Geriatric Medicine Research Unit<sup>6</sup>, Dalhousie University; Nova Scotia Health Authority<sup>4</sup>, Faculty of Pharmacy, University of Toronto<sup>5</sup>

**Introduction:** Deprescribing, defined as the planned and supervised process of dose reduction or stopping the medication(s) that may be causing harm or are no longer causing benefit, can help to improve health outcomes and reduce medication related costs. The objective of this study is to describe the knowledge, attitudes, beliefs, and behaviours toward deprescribing of primary care providers (family physicians, nurse practitioners, and pharmacists) in Nova Scotia.

**Methods:** A qualitative study was designed utilizing interviews and focus groups. Nine one-on-one interviews (3 per profession) and three uniprofessional focus groups with 4 to 8 members of each profession have been held. One interprofessional focus group will also be completed. Each interview and focus group have been recorded and transcribed verbatim. For the preliminary analysis, four team members reviewed transcripts to identify preliminary codes using the domains of the Theoretical Domains Framework version 2 (TDF(v2)) as the coding framework. Coding was completed by the team and emergent themes were determined using a qualitative data analysis conducted through an iterative process using thematic analysis.

**Anticipated Results:** All interviews and all uniprofessional focus groups have been recorded and transcribed. Based on preliminary coding, four TDF(v2) themes have emerged: 1) Social Influences; 2) Beliefs about Capabilities; 3) Social/Professional Role and Identity; and 4) Environmental Context and Resources. It is expected that additional themes will emerge during the remaining coding and analysis process.

**Significance:** The results of the completed project are expected to uncover common themes that will help inform the development and implementation of deprescribing strategies and evaluations.

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### **Developing a Neurofeedback Based Intervention to Reduce Tremor In Essential Tremor**

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**Introduction:** Essential Tremor (ET) has been classified as the most common adult movement disorder. Elusive to a cause, ET is typically treated through costly and invasive methods such as deep brain stimulation and pharmacotherapies, which have yet to be proven successful in all cases. Current research suggests that ET is centrally driven and may stem from an oscillating network spread throughout the physiological central motor system. This study aims to prove that ET patients are capable of both enhancing and suppressing the theta/beta ratio over the motor cortex, through the use of neurofeedback (NFB) techniques.

**Methods:** Participants (10-12) who have been previously diagnosed with ET, will be briefed on techniques proven to enhance/suppress the theta/beta ratio in healthy populations. Through electroencephalography, power in both the theta (4-8hz) and beta (13-30hz) rhythms will be recorded, during 8-5 minute trials.

Auditory feedback, played through over-the-ear headphones, will relay the real-time power of the theta/beta rhythms back to the participant. The impact of tremor severity (amplitude) will also be measured through the use of an accelerometer attached to the affected limb. Recordings will be done both pre and post NFB testing, and will be analyzed using a between-subject design

**Anticipated Results:** Using auditory NFB, patients will be able to mimic the healthy population and alter the theta/beta ratio (significantly) from baseline.

**Significance:** This ongoing study aims to provide proof of concept for future research initiatives.

Furthermore, if ET does in fact stem from an oscillating network of communication within the central motor system, targeting any part of this network through NFB techniques could positively alter the physical tremor.

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### **The importance of recognizing historical achievements in surgical education – Canadian highlights**

Yaesh Sardiwalla, Faculty of Medicine, Dalhousie University

**Introduction:** This project profiles pioneering surgeons and innovative breakthroughs by Canadian Surgeons in the period following WWII. Canadians have made prolific advancements in the fields of microsurgery and burn surgery. The first upper limb replant in North America was performed in Edmonton in 1974. Little is known about the details of this Canadian achievement and breakthrough in plastic surgery by Dr. Henry Shimizu and Dr. Gary Lobay.

**Method:** Fifty-six plastic surgeons from across Canada were interviewed by a single interviewer using an open, semi-structured format as part of the Canadian Society of Plastic Surgery history project. The interviews were conducted and a thematic analysis was conducted.

**Results:** A video trailer featuring some of the key achievements was compiled based on heavily weighted components of the thematic analysis. Elements featured include microsurgery and burn treatment. Descriptions of the first upper limb replant were obtained from both surgeons involved. Details of the traumatic incident, the serendipitous series of events that made the replant possible and follow-up to the surgery was obtained. This was the first case in North America to be reported.

**Conclusions:** There have been significant developments in burn treatment, auricular reconstruction and microsurgery that have unfolded in Canada. Surgeons contributions have surpassed expectations for a small group allowing for Canada to be recognized as a center for excellence in all domains of plastic surgery. Reflecting on and acknowledging historical milestones will help surgeons refine their knowledge base and understand the potential impact of contributions in the future.

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### **Identifying musculoskeletal injury risk for development of injury prevention tools for firefighters**

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1, Lakehead University; 2, McMaster University; 3, Western University

**Introduction:** Firefighters perform physically demanding work and experience high rates of musculoskeletal (MSK) injuries. Developing applied approaches to measure MSK risk in firefighting may inform development of evidence-based MSK prevention tools.

**Methods:** Firefighter (n=20) MSK risk during a hose drag task was measured using the Ovako Working Posture Analyzing System (OWAS). Median scores and interquartile range of OWAS scores were calculated for each phase (standing, pick-up, stabilize, and carry). TEAM-Feedback corresponding to OWAS scores using Dartfish software was provided. A sub-sample (n=5) completed a survey to determine TEAM-feedback utility scored on a 5-point Likert Scale (1= strongly disagree).

**Results:** Standing (median=1; IQR = 1,2.5) and carrying (median=1; IQR=1,3.8) were associated with low MSK risk. High MSK risk was identified during the pick-up (median=4; IQR=0) and stabilize (median=4; IQR = 1,3.8) phases. The composite OWAS score (median=2.6, IQR = 1,3.8) suggested the hose drag task placed firefighters at high MSK risk. When identifying the utility of corresponding TEAM-feedback, 60% of participants agreed they would apply TEAM-Feedback to their future work/health training; 40% agreed that TEAM-Feedback was helpful in teaching safe task performance strategies.

**Conclusions:** Firefighter MSK risk while performing a hose drag task is associated with high MSK risk although standing and carrying are associated with low MSK risk. TEAM-Feedback informed by MSK risk assessment appears to be a "user-friendly" approach. Future research is required to validate TEAM-Feedback with kinetic loading parameters. Upscaling this approach to include more firefighting tasks and additional contexts would improve applicability.

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### **Aircraft Cockpit Pilot Accommodation**

Andrew Schnare & Dr. John Kozey,  
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**Introduction:** Between 2008 and 2011, it was reported that up to 15% of trained air force pilots in the Royal Canadian Air Force (RCAF), are rejected from being suitable for flying aircraft due to anthropomorphic measures which make it more difficult to fit into a cockpit. Though the fit mapping procedure is rigorous, it is not free from error.

**Purpose:** To determine if there is a more accurate solution with which to predict pilot suitability, including, reach, visual fields, and physical accommodation, for each aircraft cockpit. A pilot's suitability is determined by passing all three tests.

**Methods:** Participants will have a host of anthropomorphic measures taken, and subsequently be asked to sit in a mock aircraft cockpit and complete several basic reaching and visual angle tasks. Reach will be determined using the Certus Optotrak to calculate the distance from seat to radial styloid process. Visual angles will be determined using a sight scope attached to an inclinometer in order to determine optimal visual angle, less than or equal to three degrees below the horizon. Distance from the top of the head to the canopy will be taken in order to determine physical accommodation.

**Anticipated Results:** By taking anthropomorphic measures, reach distances, and visual angles, it is hypothesized that through linear regression analysis, equations will be derived to predict the suitability of a pilot to a given cockpit in terms of reach, vision, and accommodation with an accuracy of greater than 85%.

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### **The Experiences of Women with High-Risk Pregnancy on Hospitalized Bed Rest: A Recreation Perspective**

Annie Laura Shannon-Dwyer, Dalhousie University

**Introduction:** Bed rest, a popularly prescribed treatment to reduce symptoms associated with complicated pregnancies, has been associated with adverse physical, emotional, and social health consequences for antepartum women and their families. Recreation therapy aims to improve a client's health, well-being, or overall quality of life through meaningful leisure experiences. The purpose of this project is to explore the experiences of high-risk pregnant women on hospitalized bed rest from a recreation perspective.

**Methods:** This project will be conducted using an explorative case study design. Qualitative data collection will include one-on-one interviews and journaling by participants (n=3).

**Results:** This approach will provide insight on the recreation experiences of hospitalized high-risk pregnant

women on bed rest. Results will capture the experiences of these women and will highlight the opportunities for change to make bed rest a more enjoyable treatment. Recreation may be perceived as a necessity in perinatal care.

**Significance:** Exploring experiences with a case study design will expose opportunities for perinatal care. This approach will engage patients in critically assessing recreation opportunities and engagement on hospitalized bed rest. This study has the potential to spark change in the way women with high-risk pregnancy on bed rest value their recreation.

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### **Feasibility of an EMG-Controlled, FES assisted grasping instrument on stroke survivors**

Matthew Short, Department of Kinesiology, Dalhousie University

**Introduction:** Twelve million people suffer strokes annually, and only 12-15% of them regain full use of their arm. One successful type of therapy to help regain limb function is functional electrical stimulation (FES). There is evidence pointing to the possibility of controlling the magnitude of stimulation by the EMG output of the same muscle being stimulated. The proposed study will test the feasibility of an EMG-controlled FES instrument on stroke survivors, by testing how closely the patient can match a target force by reading EMG of their finger flexors.

**Methods:** Five stroke survivors will have maximal voluntary contraction (MVC) of their finger flexors taken using a hand grip dynamometer, with and without FES. To test the feasibility of the instrument, a sine wave will be generated with an amplitude of 10% MVC. Participants will aim to match their EMG output to this wave using a hand grip dynamometer; this task will be performed with and without FES assistance. The root mean squared will be taken from the EMG output and the sine wave, and a repeated measures T-test will measure the difference between the sine wave and EMG output (percent MVC), and between the percent MVC of the FES assisted and non-assisted conditions.

**Anticipated results:** It is anticipated that there will be no significant difference ( $p$  value  $< 0.05$ ) between the amplitudes of the generated sine wave and the percent MVC for both conditions respectively, or between the two conditions. Should no significant difference be found, the instrument will be deemed feasible.

**Significance:** It is important to advance recovery methods. This instrument could provide a quicker, and more beneficial form of recovery for stroke survivors, as it best mimics the brain's control of movement.

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### **Developing a Student-led Research Trainee Competency Framework in Population Health**

L.E. Weeks, S. Brushett, K. Furlotte, M. MacQuarrie, H. Mathias, M. MacKay, L. Miller, L. Moritz, C.L. Silversides

Health Populations Institute

**Introduction:** Dalhousie University's Healthy Population Institute (HPI) sought to build a competency framework to enhance graduate students' education through acquisition of key skills within existing educational and experiential learning opportunities. HPI Student Research Scholars (SRS) played a lead role in developing and carrying out the protocol to create this framework.

**Methods:** Guided by senior and associate research scholars, HPI SRS performed a scoping review of existing frameworks and mapped regional resources/opportunities to establish a competency framework draft. The SRS then conducted focus group consultations with multidisciplinary stakeholders (including public health professionals, researchers, faculty, and students) using semi-structured guiding questions based on the draft framework and funding grant. Stakeholders identified gaps (e.g. other skills needed) and provided solutions and further ideas for learning opportunities.

**Results:** Based on findings from the scoping review, resource mapping, and consultations, the HPI

competency framework was developed. This framework includes four guiding principles (capacity building, community, cultural competence, and critical reflection) and six main competencies (communication, leadership, knowledge, programming, support and enable change, and research, policy, and practice).

**Significance:** It was established that no single existing framework met the needs of future population health professionals; however, this collaborative development process provided SRS with relevant group research experience resulting in the creation of a novel competency framework. This research and development process is adaptable to students and trainees across disciplines as a guide to create their own frameworks.

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### **Searching for Services that Support Older Women who Experience Intimate Partner Violence**

C.L. Silversides, L.E. Weeks

School of Health and Human Performance, Dalhousie University

**Introduction:** There is a lack of knowledge on the types of services available to women midlife and older who experience intimate partner violence (IPV). A majority of current IPV services are based on research looking at the needs of women of childbearing age, which does not account for the unique needs of older women. Further, services may not recognize or address the needs of older women who are racialized or language minorities. The purpose of this presentation is to discuss how older women, especially those of minority populations, are represented in IPV services online.

**Methods:** As part of a larger project, a systematic online search was performed to find examples of national and international services, supports, and resources for women in midlife and older who experience IPV. The search was conducted using keywords like “partner violence,” “older OR senior women,” and “[location]” to find relevant services. Snowball sampling was used to locate additional information.

**Results:** Although there is a significant amount of services that aim to support women who experience IPV, very few claim to specifically address the needs of older women, nor offer programs for this age demographic. Most websites associated with these services rarely depict older women explicitly, rather the sites use broad wording like “women of all ages,” “women over the age of 18,” or “women with or without children” and fewer still offer multi-lingual services or supports for visible minorities.

**Conclusion:** Wording and imagery used on online resources for women’s IPV programs often lack representation of older and racialized women. Not seeing oneself reflected or not being able to communicate in one’s preferred language may make women hesitant to access existing services or seek supports.

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### **Embedded in the local health system: Experiences from CIHR Health System Impact Fellows**

Meaghan Sim<sup>1</sup>, Katie Aubrecht<sup>2</sup>

1, Dalhousie University; 2, Mount Saint Vincent University

In 2017-18, the Canadian Institutes of Health Research launched the inaugural cohort of Health System Impact (HSI) Fellows. As part of the Canadian Health Services and Policy Research Alliance’s Training Modernization Strategy, the HSI fellowship is designed to provide a high-quality, post-doctoral training environment to address critical challenges within the health system and related organizations. The HSI Fellowship training program has been designed to be responsive to the challenges health services and policy research PhD graduates face in securing non-academic employment. HSI fellows across Canada are situated within organizations outside of the scholarly setting, as a means to develop professional and leadership experience, enhance skills and build professional networks. Currently, there are two HSI fellows in Nova Scotia with the Nova Scotia Health Authority. The purpose of this presentation will be to present two different cases of experiential learning under the supervision of a health system leader. Each case will

describe the experience of the HSI fellow as an embedded trainee crossing health system and academic policy programs, and as part of a cohort of 45 fellows from across Canada. Cases will outline the impact projects and/or programs of research, and lessons learned from the early months of the fellowship. Trainees will share their perceptions of the implications of training modernization on how interdisciplinary health research graduate education is defined and practiced. This presentation will be of interest to individuals, faculty, and organizational sponsors interested the HSI 2018-19 funding competition, and health services and policy research program coordinators.

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### **Factors Predicting Length of Stay After Elective Lumbar Spine Surgery**

Madison Stevens, Department of Kinesiology, Dalhousie University

**Introduction:** Elective lumbar spine surgeries are common and costly procedures. Length of stay (LOS) in-hospital following these procedures is an important measure of resource consumption and can be impacted by many factors. The purpose of this study is to identify the modifiable and non-modifiable factors (including patient, surgical, and post-surgical) associated with increased or decreased LOS following elective lumbar spine surgery (LSS).

**Methods:** A retrospective chart review will be conducted on initial surgical spine patients who have undergone elective LSS (including fusion, laminectomy, discectomy, vertebrectomy, osteotomy) between September 2015 to November 2015 (approximately 100 patients) at a single institution by two spine surgeons. LOS will be calculated from the date of surgery to the date of discharge. Factors to be collected include age, American Society of Anesthesiologists (ASA) physical class, BMI, opioid use, hemoglobin levels, medical comorbidities, surgery group, length of surgery, intraoperative complications, transfusion, and intraoperative medications. Data will be analyzed with multivariate stepwise regression to determine the factors predictive of LOS in the local patient population.

**Anticipated results:** It is expected that LOS will be associated with the factors listed above.

**Significance:** Accurately predicting a patients' LOS may lead to improved costs and patient outcomes. This evidence will lead to the development of a model to predict a patients LOS after elective LSS, and subsequently to the development of personalized clinical care pathways.

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### **Perceived Benefits and Barriers to Cycling by Children**

Kathryn Stone, Dalhousie University

**Introduction:** Children globally and across Canada are not meeting physical activity guidelines. Active transportation can help children meet physical activity guidelines. Cycling as a particular form of active transportation has significant health and environmental benefits, and its barriers and benefits from the perceptions of children are understudied.

**Methods:** This qualitative descriptive study will use approximately 3 open-ended interviews to explore and understand the perceived benefits and barriers to cycling from children aged approximately 5-11. Participants will be drawn from Halifax Cycling coalition families.

**Anticipated Results:** This research will, in the context of families, explore the experiences of children who cycle. The barriers and benefits of cycling perceived by children will also be presented.

**Conclusions/Significance:** The benefits and barriers perceived by children toward everyday cycling in the family context will add to the literature on cycling and active transportation in general. By exploring why children within the family context cycle, this study will help create evidence to inform evidence-based policies, initiatives, programs, or interventions aimed at promoting everyday cycling.



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## **Children with Complex Health Conditions: Navigating the System in New Brunswick**

Kate Victoria Stymiest, Dalhousie Medicine New Brunswick

**Introduction:** “Navigating the system” refers to activities taken on by patients, families and care providers to access services available in multiple systems of care to maximize their health outcomes. A patient population that must routinely navigate systems of care is children with complex health conditions (CCHC). These are children with chronic physical, emotional, developmental or behavioural conditions and often require healthcare and other services from multiple care providers in multiple locations.

We developed NaviCare/SoinsNavi, a bilingual patient navigator-based centre for CCHC in New Brunswick. To create this centre, we conducted a needs assessment with stakeholders in the care of CCHC. This study outlines their overall experiences, gaps in services and the facilitators and barriers faced while navigating systems of care in the context of CCHC.

**Methods:** 34 healthcare providers of various designations, who care for CCHC across NB, participated in qualitative interviews and focus groups. Data is being analyzed using inductive thematic analysis.

**Anticipated Results:** Preliminary themes suggest that participants view financial support, coordination of care, education and support during transition into the adult care as the most outstanding needs of CCHC and their families from a navigation perspective. To date, participants have defined themselves as being navigators, coordinators, emotional supports and advocates for CCHC and their families.

**Conclusions:** The results of this study will characterize healthcare provider perspectives on the specific needs of CCHC and their families, as well as various barriers to care and gaps in services and navigation of systems of care. In addition, it will inform the continued success of NaviCare/SoinsNavi.

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## **Does Physical Literacy Mediate the Relationship between Children’s Age and Sedentary Behaviour?**

Beth Taylor, Department of Kinesiology Dalhousie University

**Introduction:** Sedentary behaviour (SB) is a consistent trend around the world. Independent to physical activity (PA), high levels of SB can have many deleterious effects on an individual’s health. When people participate in high levels of SB, they are at risk of developing obesity, cancers, cardio metabolic problems, among other diseases. In research, age has been seen to be a casual factor in determining SB. Physical literacy (PL), may also play a role in SB levels. Researchers state that children with low PL will actually go out of their way to avoid PA. PL research is still in its infancy, and so therefore it is important to improve understanding of the influence it has on SB. Purpose: The aim of this study is to determine if the relationship between children’s age and sedentary behaviour levels, is mediated by physical literacy score.

**Methods:** A secondary data analysis will be conducted using data from the Canadian Assessment of Physical Literacy (CAPL) in Halifax. This is the first comprehensive measure of PL in children aged 8-12 years. Mediation analysis will be used to determine if relationships exist between children’s age, SB, and PL data.

**Expected Results:** Like previous research, it is expected that there will a significant relationship between children’s age and SB. Additionally, though the mediation analysis is exploratory in nature, it is expected that PL will mediate this relationship.

**Significance:** A better understanding of the factors that influence children’s SB may result in better PA promotion, and help to reverse the current trend of inactivity. Additionally, it is hoped that this study will have a positive contribution to the growing field of PL research.

## **Development and Validation of a Novel Food Environment Measure in a University Activity Space**

Nathan Taylor<sup>1</sup>, Dr. Catherine Mah<sup>1,2</sup>

1, Dalhousie University; 2, University of Toronto

**Introduction:** Diet plays a crucial role in the development of obesity, type II diabetes, cardiovascular disease (CVD) and related sequelae. Several populations are at risk for obesity, and university students, staff and faculty populations are of interest given their demographics and shared activity space. Activity spaces have become important to food environment research because they define dynamic geographic areas reflecting individual behaviour in time and space, presenting the opportunity to correlate diet and health status with food environment measures more tailored to place-based experiences.

**Methods:** Working with universities in the Halifax Regional Municipality we will assess availability, variety, quality, and price of an indicator list of healthy and unhealthy food items in all stores on campuses. Data will be coded to the Canadian Nutrient File and classified within an existing tier structure reflecting Canada's Food Guide (CFG). Furthermore, purchase behaviours will be quantified through on-campus intercept surveys and in-depth semi-structured key informant interviews will be performed to assess attitudes towards and experiences in campus food retail outlets.

**Anticipated Results:** We will calculate price indices of food items according to the CFG and search for convergent validity with an existing food environment measure, correlate food item purchases with consumer exposures and test hypotheses regarding differences in consumer environments and purchase behaviours, and differences in community environments and university populations.

**Significance:** This will be a valuable methodological and theoretical contribution to the growing field of food environment research with the potential to inform food policies that reshape obesogenic environments.

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## **Design of a high-throughput screening system to identify and evaluate immunotherapy agents**

Alyne Grasiela Teixeira, Dalhousie University

**Introduction:** Immunotherapy agents are molecules that modulate the immune system, thereby amplifying or suppressing immune responses. This important category of drugs, which includes vaccines, and therapeutic antibodies, has been critical for prevention and treatment of many diseases. However, conventional assays for evaluating immunotherapies require considerable amounts of biomolecules, cells and reagents, do not retain cell viability for further manipulation, and demand complex and expensive procedures. To address this drawback, I propose to develop an assay system designed to identify and evaluate novel immunotherapy agents, using specific polymers to confine immune cells and reagents together in tiny droplet reactors.

**Methods:** Selection of polymers: An initial library of polymers with potential to phase separate from each other, known as Aqueous Two-Phase Systems (ATPS), is used to pre-select the polymers. Then, the selected polymers are incubated with immune cells for 7 days. The immune cells to be evaluated include: i. K-562 (human lymphoblast from chronic myelogenous leukemia), ii. RPMI 8226 (human B lymphocyte from myeloma), iii. Jurkat (human T lymphocyte from acute leukemia), and iv. murine splenocytes (lymphocytes). The effect of individual polymer solutions on immune cells is assessed.

**Preliminary Results:** Based on qualitative data from the experiment performed with polymers and K-562 cells, five ATPS polymers were selected to develop a novel multiplex immunoscreening: BSA, Dex, PEG, 2-e-2-o, and Ficoll.

**Conclusion:** The results suggest that ATPS polymers selected are promising candidates for the development of a new immunoscreening system, since they do not affect cell viability and do not stimulate immune responses.

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### **Brain measures for detecting hearing difficulties in humans**

Patricia Van Roon<sup>1</sup>, Dr. Steve Aiken<sup>2</sup>

1, Carleton University; 2, Dalhousie University

**Introduction:** Some adults have difficulty understanding speech in noisy environments even though their hearing thresholds are normal. Difficulty understanding speech-in-noise may be due to temporal or spectral processing issues. Noise exposure (e.g., concert, sports stadium) can cause temporary hearing loss in humans. Animal research shows moderate noise exposures, resulting in temporary hearing loss, can result in permanent damage to connections (i.e., synapses) between cochlear sensory cells and the auditory nerve. The extent of this damage in humans is unknown, as there are no methods available to differentiate the subtle peripheral synaptopathic damage from central auditory processing dysfunctions. The main goal is to devise an early detection method for noise-induced synaptopathy by measuring a brain signal called the envelope following response (EFR) and ensure measured differences provide evidence of synaptopathy in individuals exposed to various noise levels.

**Methods:** Comparing groups of NH-threshold noise-exposed and non-noise-exposed young adults should establish EFR-measure differences. Once established in groups, we will test noise-exposed individuals engaged in industrial. We will measure indicators of synaptopathy using electric brain responses time-locked to sinusoidal amplitude modulated (SAM) tones.

**Anticipated Results:** Participants' brain wave responses to various SAM tones should activate specific auditory nerve fibres. The tones differentially affect the EFR and provide information about synaptopathy. In-the-ear electrodes will measure near- and far-fields to distinguish between central and peripheral processing.

**Significance:** Clarifying EFR contributions to peripheral and central processing will aid in detecting synaptopathy.

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### **Exploring Promising Practices of Person-Centered Care for Older Adults: A Scoping Review**

Deanna Vervaecke<sup>1</sup>, Dalhousie University

**Introduction:** The world's population is ageing. Older adults access health care frequently and are heterogeneous in their health status, care needs, and care preferences. Person-centered care (PCC) has been proposed as an appropriate model of care to replace the biomedical model because PCC is suited to address the varying health care needs and circumstances of older adults. PCC is associated with high quality care and potentially improved health care spending. Despite its emerging prominence, proliferation of PCC strategies, and positive findings, knowledge of promising practices of this care model with older adults is limited. The purpose of this review is to synthesize the current promising practices regarding PCC for older adults.

**Methods:** A scoping review will be conducted of the promising practices of PCC for older adults. Following Arksey and O'Malley's methods, a framework developed through a reflective relationship with the literature will be used to uniformly select applicable information from the research. The relevant information will then be compared and analyzed thematically.

**Anticipated Results:** It is expected that the research will demonstrate the benefits of a PCC approach. Results are also anticipated to illustrate the barriers, facilitators, and recommendations for implementing PCC with older adults and produce insight into areas for further research.

**Significance:** Using PCC in the health care system addresses the variations in the ageing experience and the personalization of care that is appropriate when working with older adults. A scoping review of promising practices of PCC might provide a better understanding for health care professionals interested in

implementing PCC with older adults and benefit older adults accessing care.

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### **The link between a laboratory based dual-task and driving simulator performance in young adults**

Brontë Vollebregt, Dr. Eryk Przysucha, Lakehead University

**Introduction:** Voluntary movements are structured during the motor programming stage of the information processing continuum, and in line with attentional theories of motor control (e.g., Capacity Sharing Theory) it has been shown that the ability to structure an action may be jeopardized in a dual-tasking situation. Hence, the ability to carry out the primary (motor) task can be adversely affected when attention has to be allocated to another motor or cognitive task. This is known as attentional interference, and it has been investigated via dual-tasking methodology. However, little is known if, or to what extent, such interference occurs in activities of daily living, such as driving for example. Thus, the purpose of this research project is to examine if the interference emerging in the laboratory dual-tasking protocol would be demonstrated in the driving simulator.

**Method:** Typically functioning young adults will be recruited and complete a driving simulator test, involved different dual-tasking situations, as well as laboratory based dual-task paradigm. The degree of association between the dependent variables (e.g., Reaction Time) will allow inferring if the two approaches are measuring the same construct of interest.

**Anticipated Results:** It is anticipated that the interference seen in the laboratory task would be similar to that evident in the driving simulator. Thus, those with lower driving ability will also exhibit lower scores on the laboratory dual-task assessment.

**Significance:** This investigation would provide insight into the cognitive constraints involved during driving, for typically and atypically functioning individuals, such as elderly individuals with dementia.

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### **Barriers to questioning about intimate partner violence in an Emergency department.**

Janeske Vonkeman<sup>1</sup>, Paul Atkinson<sup>1,2</sup>, Jacqueline Fraser<sup>2</sup>, Rose McCloskey<sup>2,3</sup>

1, Dalhousie Medicine New Brunswick; 2, Department of Emergency Medicine, Dalhousie University, Saint John Regional Hospital, Saint John, New Brunswick; 3, Faculty of Nursing, University of New Brunswick

**Introduction:** Domestic violence (DV) rates in smaller cities have been reported to be some of the highest in Canada. It is highly likely that emergency department staff will come across victims of intimate partner violence (IPV) in their daily practice. Elsewhere we have found a lack of knowledge of current tools as well as lack of training in ED staff which may be reflected in low rates of IPV documentation as well as underutilization of current tools. In order to implement a successful education program, it is vital to identify other reasons why ED staff might not question patients about IPV. Therefore, the purpose of this study is to describe current barriers to questioning about IPV in patients presenting to the emergency department.

**Methods:** A cross-sectional online survey was distributed to ED staff with a response rate of 45.9% (n = 55). The survey included a checklist of barriers identified in the literature as well as an open ended response. The primary outcome was to identify most common barriers faced in the ED.

**Results:** Partner presence was the most common reason for not asking about IPV (23.0%). This was followed by lack of access to domestic violence management information or strategies for victim to change situation (18%), lack of knowledge, training, preparedness, self-confidence (17.2%), and time constraints (14.8%), respectively.

**Conclusion:** This study identifies some of the barriers faced by ED staff when questioning patients about IPV. In order to increase the identification of this high risk condition, appropriate training and education

about IPV/DV are required to increase staff comfort as well as increased awareness of available community resources for management and strategies for victims.

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### **LGBTQ+ Health in Undergraduate Medical Curriculum**

Fiona Warde, Dr. Jacqueline Gahagan, Dalhousie University

**Introduction:** Competencies-based approaches are now the standard for undergraduate medical education. The CanMEDS Framework, adopted in 1996, established core competencies required for physicians and underpins Canadian medical school curricula. In 1996 and 2017 respectively, ‘sexual orientation’ and ‘gender identity and expression’ were added to the Canadian Human Rights Act. Integration of LGBTQ+ health content into undergraduate medical curricula is integral to ensuring Canada’s next generation of doctors are equipped to provide care for LGBTQ+ patients. As such, this scoping review aims to examine existing literature on whether and how LGBTQ+ health content is integrated into undergraduate medical curricula, and offer recommendations for further improvements in this content area.

**Methods:** A scoping review was undertaken with assistance from a medical librarian, who approved all search strategies and the eight inclusion/exclusion criteria. Key inclusion criteria were: undergraduate medical education intervention relating specifically to LGBTQ+ health content, medical school in an OECD country, and publication date from 1996-2017.

**Results:** From the five databases utilized, 5,143 papers were identified after removing duplications. Of those identified, 51 met inclusion criteria. Of those, only four related directly to the Canadian context.

**Conclusions:** Additional leadership is needed in Canada to promote inclusion of LGBTQ+ health content in undergraduate medical school curricula to ensure physicians are equipped to provide comprehensive and competent care to LGBTQ+ patients.

## **Parent attitudes towards risky play and preschool children's physical activity and physical literacy**

Natasha Webber, Dr. Michelle Stone, Dalhousie University

**Introduction:** Risky outdoor play is beneficial for healthy childhood development. However, risky play opportunities have diminished over time. Some studies indicate a link between parent's attitudes towards risky play and children's physical activity, yet there is no evidence of whether these attitudes are associated with children's physical literacy.

**Purpose:** To explore whether parent attitudes towards risky play are associated with children's physical activity and physical literacy levels. Participants: Preschool aged children (ages 3-5) in Nova Scotia early learning centres and their parents.

**Methods:** Secondary data analysis of information gathered through the Physical Literacy in the Early Years (PLEY) project REB (2016-3924) will be explored. These data include: questions from parent surveys relating to perceptions of risky play; children's height, weight and BMI, children's physical activity (ActiGraph wGT3X+ accelerometers) and physical literacy (Test for Gross Motor Development). Descriptive statistics will describe parent and child demographic data, child body composition data, and child physical activity and physical literacy data. Pearson correlations will examine associations of parent attitudes about risky play with children's physical activity and physical literacy. Linear regression models will assess associations of parent attitudes towards risky play with children's physical activity and physical literacy, controlling for specific covariates ( $p < 0.05$ ).

**Expected Results:** It is expected that positive parental attitudes towards risky play will be associated with higher levels of physical activity and physical literacy.

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## **Sleep in children and youth at familial risk for severe mental illness**

Delainey Wescott, Dalhousie University

**Introduction:** Sleep problems in childhood have been shown to be an early predictor for developing mood disorders in genetically predisposed individuals. However, the majority of research has focused on sleep disturbances in individuals already diagnosed with a mental illness. This study conducts sleep research on high-risk offspring who have a parent with a mood disorder in order to determine if early sleep disturbances are symptoms of developing mood disorders.

**Methods:** Participants were recruited from the Families Overcoming Risks and Building Opportunities for Well-being (FORBOW) cohort, which works towards prevention and early intervention of mental illness by comparing offspring of parents with severe mental illness with matched controls. Objective and subjective sleep measures were used to determine overall sleep quality. For a two-week period, participants wore accelerometer-based devices called actigraphs, and completed a sleep diary and age-appropriate questionnaires.

**Anticipated Results:** We hypothesize that children and youth at risk of developing a mood disorder would have worse overall sleep quality compared with controls. We also hypothesize that offspring of parents with bipolar disorder will have more disturbed sleep than offspring of parents with major depressive disorder. Disturbed sleep will be characterized by prolonged sleep onset latency, increased nighttime awakenings, and changes in sleep duration.

**Conclusions/Significance:** If there is an association of early sleep problems and family history of mood disorders with later mood disorder development, this would establish sleep problems as a potential target for early interventions and could potentially reduce the risk of developing a mood disorder.

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## **The effect of mitochondrial DAMPs and natural killer cells on ischemia reperfusion injury**

Lauren Westhaver<sup>1</sup>, Qianni Hu<sup>1</sup>, Ian P. Alwayn<sup>1,2,3</sup>, Jeanette E. Boudreau<sup>1,3</sup>

Department of Pathology<sup>1</sup>, Department of Surgery<sup>2</sup>, Department of Microbiology & Immunology<sup>3</sup>, Dalhousie University

**Background:** Ischemia-reperfusion injury (IRI) is an unavoidable ramification of the liver transplantation process, and is a major contributor to graft health and consequent patient morbidity and mortality. IRI following the interruption and restoration of blood supply during allograft transplant is associated with local and systemic inflammation. Natural killer cells are known to be involved in IRI-mediated inflammation, but whether their contributions are beneficial or protective is controversial. Our laboratory recently demonstrated that damage-associated molecular pattern molecules (DAMPs) of mitochondrial origin (mitoDAMPs) are released following IRI and contribute to pathogenesis of IRI-related injury. Innate immune involvement in this process has been established, and we expect that NK cells may also respond to mitoDAMPs.

**Methods:** In vitro study of primary NK-mitoDAMP interaction, assessed via ELISA and FACS analysis of NK cell and splenic cell populations.

**Results:** Direct activation of NK cells via mitoDAMPs has not been found, and unexpectedly, preliminary results suggest that mitoDAMPs may contribute to suppression of NK cell activation in a dose-dependent manner, as demonstrated by the dampening of inflammatory cytokine production, independent of significant cellular death.

**Conclusion:** Further study will assess the contribution of additional innate cellular participants to address the possibility of indirect activation of NK cells following interaction with mitoDAMPs, and will assess the suppression of NK cell effector functioning. Therefore, NK cells may be involved in multiple pathways of inflammation following IRI; understanding the contributions of NK cells may assist in strategies to ameliorate inflammation and support liver allograft acceptance.

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## **Influence of Nutrition, Activity, and Sleep on Skeletal Health and Quality of Life in the Elderly**

Joscelyn Wiseman & Mojtaba Kaviani

Acadia University

**Introduction:** Chronic disease rates are four times higher in the elderly than in the general population. Osteoporosis is a major form of chronic disease, especially prevalent in the elderly population, which contributes to a significant economic burden on Canadian health care and a substantial negative impact on quality of life among the elderly population. Increased physical activity, proper nutrition, and adequate sleeping habits can prevent and treat at-risk individuals, effectively improving treatment outcomes.

**Methods:** Elderly individuals,  $\geq 55$  years of age, were asked to participate in an observatory study consisting of a self-reported 3-day food recall, a 3-day sleep quantity and quality questionnaire, and a general health questionnaire including questions regarding quality of life and skeletal health. **Anticipated Results:** Taken from the current literature, it can be assumed that elderly individuals who participate in 150-minutes of exercise weekly, including both vigorous activity and resistance activity; consume a diet sufficient in vitamin D, calcium, phosphorus, magnesium and protein; and generally receive between 6-8 hours of restful undisturbed sleep; will be at the lowest risk of developing osteoporosis in the cohort, and will have the highest quality of life.

**Significance:** Current preventative measures, diagnostic methods, and treatments for osteoporosis tend to be timely, expensive, and centered around pharmaceuticals. It is important that efforts are made to develop easily-implementable preventive measures and treatments for individuals at risk of developing chronic

diseases such as osteoporosis, in efforts to improve the quality of life among high-risk populations.

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### **Examining Preventive Programs that Address Problematic Gambling for Adults 60 Years and Older**

Ellen Withers, Dalhousie University

**Background:** The Nova Scotian Report on gambling showed that \$1.4 billion was wagered on gambling in various forms. It also found that 5,200 Nova Scotians are classified as problem gamblers while 9,600 more are at risk. Literature shows that already existing prevention strategies cater to reducing problem gambling in youth and comprehensive programs based on the social ecological model have been applied to young populations. A scoping review showed a lack of targeted prevention strategies that address the complex social factors impacting older adults and problem gambling.

**Purpose:** The purpose is to explore the perceptions of key stakeholders as they relate to gambling harm reduction programs and practices for older adults using a social-ecological approach.

**Methods:** Qualitative methods were used. Nine key stakeholders who work in the field of gambling prevention and harm reduction were recruited and participated. They were interviewed face-to-face and the interviews were then transcribed, analyzed and coded.

**Results:** From the data five main themes were constructed: dangers and “benefits”, contributing factors, stigma associated with the hidden problem, industry motivation/conflict of interest and recommended actions.

**Conclusions:** Preliminary data from this study suggests that older adults in Nova Scotia have unique contributing factors making them vulnerable to problem gambling and there is a lack of targeted prevention strategies for this population. The study also suggests there are significant barriers to implementing and monitoring prevention strategies due to the conflict of interest and dual mandate of the Nova Scotia government to regulate and also generate revenue.

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### **Cervical Cancer Prevention and Treatment among Inuit Communities: A Systematic Review**

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**Introduction:** The burden of HPV for Inuit in northern communities is much higher than the national average. HPV rates coupled with limited services, fear and refusal of PAP screening put Inuit women at considerable risk for cervical cancer. As such, it is important to integrate Indigenous culture into healthcare services.

**Methods:** This project aims to undertake a systematic, scoping literature review (using the Joanna Briggs method) of current northern and traditional Indigenous cervical cancer research within Canada and internationally, including grey literature and unpublished works. This project will support a future operation grant submission that aims to build evidence through an Inuit Qaujimajatuqangit (IQ) framework to better understand factors related to Inuit wellness as it pertains to cervical cancer prevention and treatment while utilizing novel ideas that promote wellness among Inuit communities in the Canadian North.

**Anticipated Results:** The proposed review will provide an environmental scan on current cervical cancer research and resources. It will be used to develop a future research proposal that will ultimately contribute to a greater understanding of cervical cancer in the context of Inuit wellness in northern Canada. Furthermore, the larger project will encourage collaboration among the identified stakeholders engaged in this issue.

**Significance:** This review will map existing resources and determine areas for future research that will increase understanding of Indigenous wellness as it pertains to cervical cancer. Findings will inform a broader interdisciplinary IQ research program guiding the development of education and prevention tools and



treatment modalities that are culturally safe and competent for Inuit.

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### **Understanding the role of public health-oriented physical education in middle schools**

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**Introduction:** Public health-oriented physical education (PE) programmes can contribute to population health by promoting the benefits of lifetime physical activity (PA) and physical literacy to school-aged children and youth. This is of particular importance for youth entering middle school, as decreases in PA and increases in sedentary behaviour have been reported for this age group. This presentation will provide an overview of a scoping review aimed at understanding the role of public health-oriented PE programmes targeting middle school students.

**Methods:** This scoping review examined peer-reviewed, published academic literature to determine (a) the purpose of public health-oriented PE, and (b) recommendations for developing, implementing and evaluating a public health-oriented PE programme.

**Results:** In total, 28 articles were reviewed, and characteristics were summarized quantitatively and qualitatively. Five major themes were identified: (1) varying views of the purpose of PE exist within the profession and amongst students, (2) PE professionals often lack proper training and support to effectively implement public health-oriented PE programmes, (3) confusion concerning student evaluation and appropriate health outcome measures persists (4) a number of barriers to implementing public health-oriented PE exist, and (5) students benefit from supportive approaches to PE.

**Conclusion:** Findings from this review suggest that there is no accepted best practice model of public health-oriented PE, nor is it likely to be beneficial to establish a “one-size fits all” model/approach.