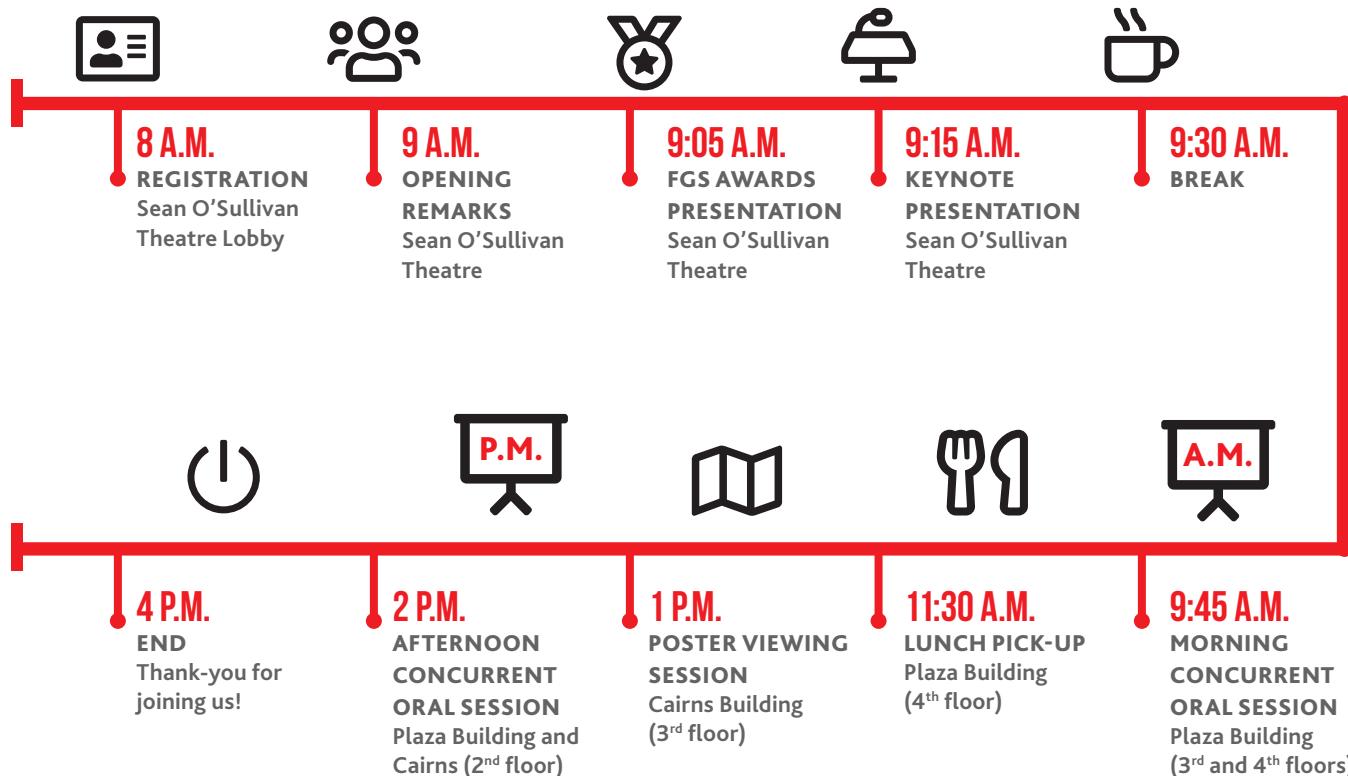


## Faculty of Graduate Studies



**Mapping the New Knowledges Graduate Student Conference Program 2022**

# CONFERENCE SCHEDULE



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# CONFERENCE SCHEDULE DETAILS

## 1 - Registration

### **Sean O' Sullivan Theatre Lobby | 8 a.m.**

Be sure to register before our opening remarks at 9 a.m.

## 2 - Opening Remarks

### **Sean O' Sullivan Theatre | 9 a.m.**

Vice-Provost and Dean of Graduate Studies, Suzanne Curtin, welcomes attendees and presenters to the 17<sup>th</sup> annual Mapping the New Knowledges Graduate Student Conference.

## 3 - FGS Awards Presentation

### **Sean O' Sullivan Theatre | 9:05 a.m.**

Join us in congratulating outstanding grad community members and students for the prestigious FGS awards.

## 4 - Keynote Presentation

### **Sean O' Sullivan Theatre | 9:15 a.m.**

Join Dr. Julia Baird as she presents the keynote for MNK 2022.

## 5 - Break

### **Sean O' Sullivan Theatre Lobby to Plaza | 9:30 a.m. to 9:45 a.m.**

Complimentary coffee will be available in lobby.

## 6 - Morning Concurrent Oral Session

### **Plaza Building 3<sup>rd</sup> and 4<sup>th</sup> floors | 9:45 a.m.**

The first set of morning oral concurrent sessions from over 30 students.

## 7 - Lunch Pick-up

### **Plaza Building 4<sup>th</sup> floor | 11:30 a.m.**

Complimentary lunch will be available.

## 8 - Poster Viewing Session

### **Cairns Building 3<sup>rd</sup> floor | 1 p.m.**

Leisurely view posters as our grad students take over the third floor of Cairns.

## 9 - Afternoon Concurrent Oral Session

### **Plaza Building 3<sup>rd</sup> and 4<sup>th</sup> floors,**

### **Cairns 2<sup>nd</sup> floor | 2 p.m.**

The final set of oral concurrent sessions from over 35 students.

## 10 - End

### **4 p.m.**

Wrapping up our 17<sup>th</sup> annual Mapping the New Knowledges graduate student conference. Thank you for joining us!



# **WELCOME.**

We are excited to welcome you to our 17<sup>th</sup> annual Mapping the New Knowledges Graduate Student Conference!

This year our students are back in-person to showcase their hard work and research excellence.

The Faculty of Graduate Studies supports the development of our graduate students' professional skills by providing programming and opportunities throughout the year.

Through MNK, students have an opportunity to showcase these skills, present their research and make connections with other students and faculty members in a professional and supportive environment.

Enjoy!

Sincerely,

**SUZANNE CURTIN**

Vice-Provost and Dean of  
Graduate Studies



**100+**  
**STUDENT**  
**PRESENTERS**



 WELCOMING  
**STUDENTS**  
FROM MORE THAN  
**25**  
PROGRAMS.



SHOWCASING GRADUATE RESEARCH  
**SINCE**  
**2005**



# KEYNOTE SPEAKER

## DR. JULIA BAIRD

Associate Professor, Geography and Tourism Studies  
and Environmental Sustainability Research Centre

Julia Baird is a Canada Research Chair in Human Dimensions of Water Resources and Water Resilience and an Associate Professor in the Environmental Sustainability Research Centre and the Department of Geography and Tourism Studies.

She also holds an Adjunct Senior Lecturer position at the University of the Sunshine Coast in Australia. Julia's research focuses on water governance and resilience at the collective and individual levels.

She leads the Water Resilience Lab at Brock, which supports master's students and post-doctoral fellows.

Julia is the 2020 recipient of the Canadian Water's Next Academic Leader award and the Brock University Faculty of Social Sciences Early Career Researcher Award.



# FACULTY OF GRADUATE STUDIES AWARDS



Each year, the Faculty of Graduate Studies (FGS) celebrates the accomplishments of graduate students, faculty and staff and the generosity of donors who invest in excellence at Brock. These awards are presented to winners at MNK to honour outstanding mentorship, leadership and research excellence within the graduate community at Brock.

## Michael Plyley Graduate Mentorship Awards

Established in 2011, the awards honour and recognize the essential role of faculty supervisors in the mentorship of graduate students. Nominations came exclusively from grad students. In 2017, the FGS renamed the awards in honour of past Dean, Dr. Michael Plyley, to recognize his leadership and contributions to graduate education at Brock. Two mentorship categories of master's students only and of master's and PhD students are presented.  
**Value: \$1,000 to assist faculty with ongoing graduate student mentorship.**

## Marilyn Rose Graduate Leadership Award

To recognize faculty, staff and students for their work, vision and leadership in developing and/or enhancing graduate studies and the graduate student experience for students at Brock University. The Marilyn Rose Graduate Leadership Award recognizes the kind of work that encourages a strong and vital graduate culture in support of students and the University's academic and research goals. **Value: \$500.**

## Jack M. Miller Excellence in Research Award

The Excellence in Research Award is awarded to graduate students who have displayed excellence in research. Each graduate program are allowed to nominate one master's and one doctoral graduate student from each of the Brock's faculties. **Value: \$1,000.**

# MORNING ORAL SESSION PRESENTER ABSTRACTS

9:45 A.M. - 11:30 A.M.

## SESSION 1 | ALIA WAZZAN

PLAZA 308

PRESENTER	PROGRAM TYPE
Emma D'Amico	English
Malcolm Cavanagh	History
Emma Bodner	Classics
Shivam Panwar	History
Linda Eronmhonsele	Studies in Comparative Arts and Literature

## EMMA D'AMICO

*The Right to Mourn and Be Mourned: Judith Butler's Intersection in The Overstory*

What leads any of us to seek to preserve the life of the other?" is a question that Judith Butler poses to us which considers the value that is afforded to living beings. Butler's text The Force of NonViolence details that committing acts of violence against others will inflict violence against ourselves as we should be considering ourselves as part of a living and breathing ecosystem. Nonviolence in discussion with Richard Powers' fictional novel The Overstory can thus become the tool for social and political change through non-harmful interdependence. Building on these concepts of interdependence, nonviolence, and safeguarding, I argue that The Overstory offers the challenge of giving non-humans and the non-living the right to its own being. Through a major plotline concerned with the legal battle for giving legal rights to trees, The Overstory demonstrates an entry point for thinking about Butler's concept of grievability and in understanding what is deemed "worthy" under the law. I am asking: Who and what is grievable? Who and what deserves to be safeguarded? What can mourn? And what is worthy of being mourned? What does it mean to give rights to non-human beings? And how might a shift in what and how we safeguard allow for an interconnected and healing relationship with the environment? My proposed presentation draws on recent critical efforts to bring environmental humanities into dialogue with trauma studies. I hope to further probe the discussions of intertwined relationships between human and environmental grievability.

## MALCOLM CAVANAGH

### *Publicly Pondering the Eastern Question: European News-Coverage of the 1897-98 Cretan Revolt and International Responses*

The Cretan revolt (1897-98) and the ensuing European Powers' establishment of a multinational peacekeeping force (MPF) provides a case study to examine fin-de-siècle trends of popular nationalist discourses in public opinion as constructed through news-media. This crisis also enables an evaluation of the effect which journalistic representations of public opinion exerted on collective crisis management efforts during the collapse of the nineteenth-century Concert of Europe international system. A microcosm of the Eastern Question posed by declining Ottoman sovereignty, the revolt illustrated the instability of inter-European relations toward the end of the long nineteenth century. Meanwhile, the continent struggled with rise of popular nationalisms which espoused assertive, uncompromising worldviews, reproduced and reinforced through rapidly proliferating news-media. This research sets out to examine how popular assessments of this crisis were formed through the lens of late-century nationalisms, and how such media paradigms influenced public perceptions of the revolt. Through a comparative tri-national news-media discourse analysis, this project evaluates how British, French, and German reading publics conceived of the revolt, and how such conceptions carried implicit and explicit endorsements of nationally-interested foreign policy stances. Couched in popular western Hellenism and orientalist perceptions of Islam, journalism on the crisis framed European responses within historical cultural conceptions and modern politically-interested paradigms of international alliances. This analysis suggests that popular discourse on the revolt fostered combative inter-European relations, resulting in Austro-German withdrawal from the MPF in April 1898 and a broader reduction of international consensus on European collective security.

## EMMA BODNER

### *The Language of Slavery in Greek Literature*

After translating and intimately studying a selection of Homer's *Odyssey* over the course of a semester, I was struck by the incompatibility of contemporary ideas and discussions of ancient slavery with how enslaved individuals are depicted and termed in ancient source texts. Taking a philological approach, I examine the transmission of meaning and status both in the original Greek and in English, using the *Odyssey* as a case-study. An exploration of varying definitions of slavery, from Orlando Patterson's more widely applicable contemporary one to Aristotle's elite perspective justifying the exploitative institution in which he thrives, brings to light the nuances of the terminology of slavery. These nuances are necessary to analyze the implications terminology carries in both languages. Considering that ancient Greek and English are markedly different languages, namely in usage and temporality, the process and function of translation must be considered. Translation is, above all, a means of making a text accessible to a wider audience. With accessibility in mind, I explore how the translation of the terminology of slavery both impacts the marginalized or 'othered' people it describes and how it affects a reader's understanding of the translated terms. With these philological analyses laid out, I use excerpts of Homer's *Odyssey* translated by a variety of scholars—the very first, George Chapman; a long-time staple of the classroom, Richmond Lattimore; and a challenger of the tradition and first woman to publish a translation, Emily Wilson—and posit my own, to showcase the analysis of terminology in practice.

## SHIVAM PANWAR

### *Rudyard Kipling's Masonry of Words*

Dissemination of factually inaccurate histories based on generalized assumptions, lack of historical thinking, lack of fact checking and tendencies of creating convenient procrustean sets of knowledge has been a huge problem which has been plaguing the global academia and societies. To provide an extrapolative understanding of that problem in the form of a case study, the research critically examines the literature of Rudyard Kipling which covers Kipling's books, stories, poems, speeches, letters and websites as primary sources. The research uses very important theoretical works of E.H. Carr, Michel Foucault, Noam Chomsky, Sam Wineburg and many other major historians and academicians. The research aims to highlight the problems of fake history, circulation of fake information and the disasters caused by the dissemination of inaccurate facts in the global academia and society in the 21st century's highly connected world.

## LINDA ERONMHONSEL

### *Black Youth Ordeal In North America: The Representation Of Black Youth In John Singleton's Boyz N The Hood & Dominique Morisseau's Pipeline.*

There are many factors that influence black theatre in the United States and in Canada. Black theatre is a dramatic movement that comprises plays written by, for, and about Africans. The black theatre has evolved from its early "Minstrel shows" of the nineteenth century to a more defiant representation of the culture and experiences of African Americans/ Canadians. For decades, Hollywood exploited black culture by creating stereotypes of black people through their films that were mostly written and produced by white men. But with the rising of black filmmakers like Spike Lee, Jordan Peele, the narratives, and themes surrounding black films began reflecting issues and experiences surrounding the racialized group. This project seeks to look at the representation of black youth in the diaspora through the lenses of the visceral drama *Boyz N in the Hood* by John Singleton, which depicts black youth in black communities with evident realism and compare it to the potent and riveting play *Pipeline* by Dominique Morisseau, which delves into the school to prison dilemma which affects students of colour. The study will focus on Black youth in Canada and USA.

## SESSION 2 | JESSICA BRAUN

### PLAZA 311

PRESENTER	PROGRAM TYPE
Kim Uyeno	Applied Health Sciences
Chris Vellucci	Applied Health Sciences
Adam Pappas	Applied Health Sciences
Vanessa Yuan	Applied Health Sciences
Chimerem Amiaka	Applied Health Sciences

### KIM UYENO

#### *Does concussion history affect softball pitch recognition, swing timing, and swing decision making in collegiate softball players?*

**Background:** Concussions can affect an athlete's cognitive and physical performance. The negative effects of concussion can linger beyond symptom resolution and can result in reduced sport performance and increased risk of injury upon return to play. The effect of concussion history, including time since concussion and number of concussions, on sport performance is not well understood.

**Purpose:** The purposes of this study were to examine the effects of concussion history on softball batting measures, such as pitch recognition, swing timing, and swing decision making, and to compare a computerized reaction time test to a sport-specific reaction time test.

**Methods:** A cross-sectional study design was used to evaluate softball batting measures among collegiate softball players. Eighteen collegiate softball players from across Ontario were recruited to participate. Participants were divided into two groups: those with previous concussion ( $n = 7$ ; mean age, 20.71 years; mean time since last concussion, 3.88 years) and those without ( $n = 11$ ; mean age, 20.45 years). Pitch recognition, swing timing, and swing decision making were based on participants responses to pre-recorded pitching videos.

**Results:** Pitch recognition, swing timing, swing decision making, and computerized reaction time results were similar between groups.

**Conclusion:** These preliminary results suggest that the participants with previous concussion had similar levels of cognitive and physical performance to the participants without previous concussion on softball-specific tasks.

### CHRIS VELLUCCI

#### *Differences In Neuromuscular Coordination Between Novice And Advanced Sprinters*

**Introduction:** The purpose of this project is to identify neuromuscular and kinematic coordinative strategies that underpin sprint performance using a data-driven approach. We hypothesize that distinct differences will occur in the neuromuscular activity between novice and advanced participants and that these will be related to primary modes of variation identified through principal component analysis (PCA).

**Methods:** 17 health athletes were recruited to run three 60 m sprints. During these sprints, participants were outfitted with an IMU motion capture system (XSens MTw Awinda, Netherlands) and a wireless EMG system (Noraxon Ultrium, US). Nine EMG electrode pairs were placed on the right Gastrocnemius, right Biceps Femoris, right Gluteus Maximus, right Gluteus Medius, right Vastus Lateralis, right Rectus Femoris, left Latissimus Dorsi and left External Oblique. Data from three strides about peak sprint velocity were used to construct our PCA framework. PCs that displayed a weak-strong correlation with sprint velocity were used to explain 95% of the total variance in the data set. Single component reconstruction (SCR) was used to identify the biomechanical meaning of each PC.

**Results:** Three PCs that showed a weak-moderate correlation with sprint velocity were retained to explain >95% of the variance in the data set. Using SCR, we determined that PC1 represented a phase shift

feature for the muscles of the trunk and a magnitude feature for Bicep Femoris. This suggests that athletes with faster sprint velocities demonstrate differences in the timing of (co)activation of the trunk muscles along with higher activation in the Bicep Femoris.

## ADAM PAPPAS

### *Life After Sport: A Study of Athletic Identity and Retirement of Professional Hockey Players*

Retirement is one of the most important decisions an athlete can make. When an athlete retires, they may be faced with an identity crisis which can impact their life after sport (Coakley, 1983; Lotysz & Short, 2004; Worrell Jr., 2017). This identity crisis is known as Athlete Identity, influences the way they see themselves even outside of active sport (Webb et al., 1998). The purpose of this research is to better understand retirement of former professional athletes as well as how former athlete fandom is influenced by their retirement.

This study used an inductive research approach and participants were interviewed about their athletic retirement and how their personal views on the sport have changed over time. All participants played professional hockey in the National Hockey League, and have retired prior to 2018. Data are currently being collected and analysis will be done by spring 2022.

Early findings have shown (i) a sport fandom evolution, (ii) a desire to remain in the sport as long as possible, (iii) unpreparedness to embrace transition and (iv) the strength of their athletic identity as themes in athletic retirement. Of interest is how emic perspectives in the sport altered participants perceptions of the sport. This research may benefit both athletes and retirement transition scholars in understanding the elements that contribute to a successful post playing career life.

## VANESSA YUAN

### *The influence of occupational footwear on slip responses*

Introduction: A slip occurs when there is insufficient resistance to counteract the applied forces between the footwear and the ground. Once a slip occurs, an individual's slip recovery response can influence the resultant slip outcome. Since many workplace slips are due to unsuitable footwear, this study investigated how standardized occupational footwear (OF) influences balance recovery strategies and slip outcome in response to an unexpected slip.

Methods: Participants ( $n=25$ ) walked along a walkway while barefoot (BF) or wearing OF. Participants walked over a high-friction surface for the first five trials but on the sixth trial, and without the participant's knowledge, the walkway surface was changed to a low-friction surface to induce an unexpected slip. Ground reaction forces, lower limb surface electromyography and kinematics were recorded.

Results and Discussion: When a slip was encountered, participants in the OF group experienced a less severe slip outcome (e.g., shorter slip distance and slower slip velocity) than the BF group. This may have been due to the OF group applying 23% less shear force and having a 16% smaller co-efficient of friction utilized. Differences in slip severity may have also contributed to differences in the ensuing slip response. The OF group demonstrated 35-49% less muscle activity and 2° less plantar-flexion in the slip limb, as well as 66-78% less muscle activity in the non-slip limb. While these results provide insight into how OF influences slip outcome and slip recovery responses, further research is needed to investigate if this contributes to fewer slips in the workplace.

## CHIMEREM AMIAKA

### *The effects of vibration on postural responses to an unexpected loss of balance*

Introduction: Vibration applied to the foot sole has been shown to improve balance during quiet standing. However, since falls typically occur when an individual is unable to quickly recover from a loss to their balance, there is a need to examine whether the benefits of vibration extend to situations requiring reactive balance control.

Methods: Participants will stand barefoot, while blindfolded and wearing headphones, on top of a moveable platform. Three vibrating elements will be placed directly underneath each foot (i.e., two placed at ball of the foot and one placed at the heel) so that they gently vibrate the skin of the foot sole at specific times. From this standing position, participants will complete 24 trials, where the moveable platform will move in either the forward or backward direction. While the distance, velocity and acceleration of the surface translation will be pre-determined, participants will be unaware of the timing of each surface translation and which trials they are receiving the vibratory input. In response to each surface translation, participants will be instructed to recover their balance without stepping. The ability to recover balance will be quantified through the measurement of surface electromyography, body kinematics and center of pressure.

Expected results: It is hypothesized that vibratory input to the foot sole will result in improved balance recovery, as shown by earlier and smaller muscle activation responses, reduced center of pressure movement and reduced body movement (e.g., center of mass and joint angles displacements).

## SESSION 3 | ZACH RACZYWOLSKI

### PLAZA 408

PRESENTER	PROGRAM TYPE
Zachery Watts	Chemistry
Cameron Andress	Computer Science
Derek Hon	Computer Science
Andrew Pozzuoil	Computer Science
Liam McDevitt	Computer Science

## ZACKERY WATTS

### *Exploring Novel Phenalenol-Substituted Ligands with Rare Spin-Crossover and Conductive Properties*

Spin-crossover in 3d4-7 transition metal complexes is a redistribution of d-orbital electrons between low- and high-spin states. The spin-state change results in alterations to magnetic behaviour and structural properties and can lead to bistability, which is an essential feature between two different states. Multifunctional materials are molecular materials with two or more discrete properties not found together naturally. Our work has been focused on the development of multifunctional spin-crossover conducting materials. Reported spin-crossover conductors consist of ionic complexes where the cation contains the spin-crossover unit, and the anion is the conductor. We are exploring the development of new single-component species where all properties are retained in one single molecular unit to generate strong inter-property interactions. Herein, we will present a new rare case of a spin-crossover semi-conductor, further investigations into novel phenalenol systems as ligands, and explore the realm of diversity in homoleptic and heteroleptic transition metal complexes for the purpose of multifunctional materials.

## CAMERON ANDRESS

### **Machine Learning for Aptamer Drug Design (application: Covid-19)**

Typical drug development processes are costly, time consuming and often manual with regards to research. Aptamers are typically single-stranded oligonucleotides (RNA/DNA) that bind to, and inhibit, target proteins and other types of molecules similar to antibodies. Compared with small-molecule drugs (most pharmaceuticals), these aptamers can bind to their targets with high affinity (binding strength) and specificity (designed to uniquely interact with the target only). The typical development process for aptamers utilizes a manual process known as Systematic Evolution of Ligands by Exponential Enrichment (SELEX), which is costly, slow, and often produces mild results.

Machine learning is the process of teaching computers to learn patterns and associations, similar to that of the human brain, through exposure to past data and repetition. Deep learning is a subset of machine learning which increases the amount of data being provided, the complexity of the algorithm, and sometimes the number of repetitions. This, in turn, increases the computational demand and physical hardware requirements. However, the result is an algorithm which significantly improves the prediction/result accuracy.

The focus of this research is to create a deep learning approach for the generating and evolving of aptamer sequences to support aptamer-based drug development. Currently, the research is applied to Covid-19. However, careful consideration is being placed in the intentional design of a general solution for future viral applications.

## DEREK HON

### ***Distributed MAP-Elites and its Applications in Evolutionary Design***

Background: Concussions can affect an athlete's performance and health. This research investigates the combination of two diversity techniques used within Genetic Programming (GP), and its effectiveness within Evolutionary Design. The two techniques investigated are MAP-Elites and Distributed Island-Model Evolution. MAP-Elites is an illumination algorithm designed by Jean-Baptiste Mouret and Jeff Clune. Illumination algorithms find many well performing solutions in different areas of the search space. Distributed Island-Model Evolution is an old approach used to maintain diversity in a population of solutions through the use of subpopulations, also known as demes or islands. These islands emigrate and immigrate individuals between each other. The proposed system, Distributed MAP-Elites, aims to address the scaling problem within MAP-Elites. MAP-Elites measures K behaviours with m intervals in each behaviour. The scaling is equivalent to that of a K-dimensional hypercube which has adverse effects on the memory, real time necessary to run the GP, and possibly the quality of solutions. Distributed MAP-Elites will scale linearly because each island is a 2 behaviour map which will possibly increase the diversity as well as the quality of evolved solution. The system will be tested on a few evolutionary design problems, such as procedural textures and 3-D model synthesis.

## ANDREW POZZUOLI

### ***Using an Age Layered Population Structure to Increase Behaviours in the Multi-dimensional Archive of Phenotypic Elites Algorithm***

The Multi-dimensional Archive of Phenotypic Elites (MAP-Elites) algorithm is a quality diversity algorithm applied on top of traditional evolutionary algorithms with the aim of providing a collection of diverse

solutions, each being as high performing as possible. Having a diversity of solutions not only combats premature convergence but can also be useful for subjective domains in art, design, or computer game enemy AI. One issue with MAP-Elites is in its scalability. The number of solutions returned increases exponentially with respect to the number of user-defined dimensions of behaviour which limits the effectiveness of evolutionary computation in addition to being a heavy strain on resources. The purpose of this research is to increase the number of behaviour dimensions in a feasible way. This will be achieved by combining an Age Layered Population Structure (ALPS) with the MAP-Elites algorithm. Each age layer of ALPS will contain a two-dimensional MAP-Elites grid with different behaviours. This algorithm will be applied to intelligent agents in order to observe interesting and unexpected emergent behaviour. Since both ALPS and MAP-Elites are task-independent algorithms that can be applied generally on top of evolutionary algorithms, the results of this research will be widely applicable to a variety of task domains in evolutionary computation.

## LIAM MCDEVITT

### *Fitness Landscape Analysis and Machine Learning for Particle Swarm Optimization Parameter Performance Prediction*

The behaviour of an optimization algorithm when attempting to solve a problem depends on the values assigned to its control parameters. For an algorithm to obtain desirable performance, its control parameter values must be chosen based on the current problem. Selecting appropriate control parameter values is time-consuming, computationally expensive, challenging, and necessary for optimal performance. The time complexity associated with searching for effective control parameter values often overshadows addressing the problem at hand, limiting an algorithm's efficiency. The main objective of this thesis is to craft an intelligent strategy, leveraging machine learning classification and quantitative

characteristics about the current problem, to predict the performance of control parameter configurations in unseen environments. This thesis investigates the use of this proposed framework for the Particle Swarm Optimization (PSO) algorithm and will culminate in the proposal of a robust parameter-free PSO variant that effectively eliminates the computational cost of parameter tuning, yields competitive performance, and is highly accessible to researchers and practitioners.

## SESSION 4 | JULIANNE BURGESS

### PLAZA 409

PRESENTER	PROGRAM TYPE
Roselyn Gishen	Education
Rakha Zabin	Educational Studies
William Ankomah	Educational Studies
Jennier Pirosko	Educational Studies

## ROSELYN GISHEN

### *Writing Self-Efficacy of Elementary Students with Learning Disabilities*

Writing is an important academic skill that many students with learning disabilities find difficult to master. In order to acquire basic literacy skills, early intervention and appropriate accommodations are crucial. One way to support students in writing is by boosting their self-efficacy. In the context of writing achievement, self-efficacy refers to students' beliefs about their abilities to accomplish specific writing tasks. However, while research has explored writing self-efficacy in elementary students, little is known about the experiences of students with learning disabilities.

Using a mixed-methods approach, my research aims to explore the writing self-efficacy of students with learning disabilities in grades 3, 4, and 5. Using a multi-modal survey instrument (Zumbrunn et al., 2020) and one-on-one virtual interviews, I

will determine whether writing self-efficacy varies across grade levels and explore how students with learning disabilities perceive their writing abilities. Results will inform teachers' approaches to writing instruction and interventions for struggling writers.

Beyond outlining my proposed research, this presentation will explore considerations for collecting data from pre-adolescent children with learning disabilities.

## RAKHA ZABIN

### *The Tale of an International Doctoral Student Amid COVID-19 Pandemic*

The coronavirus (COVID-19) pandemic has required university students to adapt to an unprecedented challenge. It has drastically changed the educational landscape worldwide, and international students have their own set of unique challenges (Neuwirth et al., 2020; Okwuosa, 2021; Stavicka & Odiña, 2021). International students have always been in challenging situations, and this pandemic amplified it further. To smoothly transition to the educational platforms and integrate into the new country, especially after the heinous impact of the COVID-19 pandemic, international students need adequate support from the educational institutions and the government. Integration plays a dominant role in adaptation to life in a foreign country and academic success (Brown, 2019; Merola et al., 2019; Vazirani et al., 2018). Based on Tinto's (2011) integration model, this study explores the unique challenges based on the lived experiences of an international doctoral student from a lower-income country, Bangladesh, enrolled in an Ontario university regarding the impact of the COVID-19 pandemic. It focuses on account of the learning experience of one international doctoral student's integration to become a scholar within this changing time. Self-reflection on the hurdles experienced and the coping strategies during the evolution to becoming an international doctoral student in Ontario inform the analysis. Finally, the study concludes

by highlighting the role of adequate institutional and government support services for international students as some valuable recommendations.

## WILLIAM ANKOMAH

### *Identifying the positive dreams of international graduate students at a Southern Ontario University*

Background: Concussions can affect an athlete's Using the second phase (i.e., dream) of the Appreciative Inquiry's (AI) 4-D cycle, in this presentation, I will share the findings of one of my doctoral thesis research questions: "What would be your dream international master's student experience in your program?" In the study, I conducted 14 semi-structured individual interviews and 3 focus group discussions during the second wave of the COVID-19 pandemic. The second phase of the cycle gave participants the appreciative platform to dream about an international student experience they currently do not have but wished they could get to further improve their schooling experience. Consistent with the AI literature, participants were astonished at the thought of dreaming about a positive international master's student experience because students are not often taught to imagine what is possible in their studies. The study revealed that the number one dream of participants was tuition cuts and improved funding packages. Also, participants imagined the importance of enhanced career workshops to advance their professional development goals. Further, the data revealed the desire for readily available part-time employment opportunities to boost the finances of international students studying away from their home countries. Another dream of participants in the international student-only programs was to learn with their domestic counterparts to enrich classroom discussions and reduce the feeling of second-class student status. Further, participants imagined receiving more hands-on experience to balance theory and practice. The research contributes to the international student literature and informs policy and practice to improve the learning experience of international graduate students.

## JENNIFER PIROSKO

### *Community Connected Experiential Learning- Change in the K-12 Classroom*

The purpose of my study is to identify the best ways to integrate community connected experiential learning with traditional learning methods and curriculum to provide students with rich, authentic and engaging learning opportunities and pathway development. I want to create a framework that will guide teachers and administrators to continuously provide Kindergarten- Grade 12 (K-12) students with community connected experiences that will lead them to discover their career/ life/ pathways potential. The literature clearly proves the positive effects of authentic experiences, but the gap lies in the fact that educators must have a method of teaching that supports the integration of experiential learning. To achieve genuine understanding and realistic mobilization, we must show teachers how to consistently weave experiential practices into traditional curriculum.

The target audience for the study's findings is board/ school administration and K-12 classroom teachers. A mixed methods (quantitative and qualitative) explanatory sequential design is planned in order to understand and produce findings that inform practice with both groups in Ontario and beyond. This will likely take the form of a survey of 200-400 teachers followed by interviews of approximately 20 from two co-terminus school boards. Currently, this proposed mixed methods study has two research questions:

1. What are Ontario teachers currently doing to integrate community connected experiential education and pathways initiatives in the K-12 classroom?
2. How can teachers integrate community connected experiential learning with traditional methods/ curriculum to provide students with engaging learning opportunities and pathways development?

## SESSION 5 | MATHIEU DAGENAIS

PRESENTER	PLAZA 410 PROGRAM TYPE
Madison Lepp	Sustainability Science
Simranjeet Kaur	Educational Studies
Emily Cauduro	Child and Youth Studies
Sandra Kroeker	Child and Youth Studies
Oussema El Ajel	Management

## MADISON LEPP

### *Building Climate Resilience and Climate Equity in Canadian Municipalities*

Climate impacts, such as sea-level rise, melting ice sheets, and flooding, have devastating effects on Canadian communities. In response, building climate resilience and equity have become global priorities. Towards this goal, seven principles for building resilience have been identified as essential for enhancing the resilience of social-ecological systems. Similarly, equity scholars have identified three domains of equity that are considered essential for advancing social equity. Yet, tools to incorporate climate resilience and equity into community climate adaptation planning are lacking, which limits practical implementation for Canadian communities. Using directed content analysis of 20 municipal adaptation plans from Canada, this research will examine the extent to which chosen cities focus on resilience and equity. Next, the findings from the first objective will inform the development of a "climate resilience and equity lens" for municipal climate adaptation planning. The climate resilience and equity lens offers communities a tool for better understanding, assessing, and incorporating resilience and equity into community-level climate change initiatives. The research aims to strengthen the resilience and equity of climate planning and action. It is my hope that the lens produced in this study will contribute to strengthened planning and implementation for climate resilience and climate equity in Canada.

## SIMRANJEET KAUR

### *"Are you here as a census taker?": Reflections and Strategies of collecting data with a marginalized community in New Delhi*

Context matters in qualitative research! What this emphasis is the imperative need for researchers to delve into their positionality, and acknowledge the multiple standpoints where they come from to avoid unconscious biases. It points out at the imperative need for researchers collecting qualitative data to employ strategies that are appropriate for the contexts in which they are used (Maxwell, 2018). This presentation is a reflection of my experiences of collecting ethnographic data for a project on Community Literacies. The participants of this two-year long study were families residing in an urban migrant slum in New Delhi whose social, religious and economic identities clashed with mine and thus placing me as an outsider to the context. I delve back on the tensions, anxieties and dilemmas that I faced as a novice researcher as I attempted to document the everyday lives of my participants and move away from the damage centred approach (Tuck, 2009). I refer to the strategies of rapport formation with the families as 'moments of invitation' which paved the way for ethnographic data collection. The presentation seeks to provide a glimpse into the challenges that novice researchers face and suggest some strategies through which one can navigate those.

## EMILY CAUDURO

### *Conceptualizing decolonization through the Defund the Police Movement*

Recent events have acted as a catalyst for a critical evaluation of policing and police practices on a global scale through the defund and anti-police movements. Decolonization, as referred to by Cindy Blackstock (2011), encompasses the disengagement from and dismantling of colonial power and Western

influences through the reclamation of sovereignty, land, governance, and culture of Indigenous peoples. The Truth and Reconciliation Commission (TRC) (2015) is both a symbolic and pragmatic address towards decolonization and reconciliation as it highlights the importance of building relationships based on respect by facilitating healing and reconciliation between Canadians and Indigenous communities. Previously, I presented at this conference on the preliminary findings of my research which examined how police policy, practice, and training in southern Ontario has been modified to include the justice calls for action set out by the TRC and to explore how police interactions with Indigenous peoples has been modified to reduce the overrepresentation of Indigenous adults and youth in the criminal justice system. This presentation aims to unpack the role of policing within the decolonization framework and reimagine what modern policing could look like. Policing is currently in a transition period wherein policies are evolving to improve interactions with minority groups by rebuilding trust and relationships and proposing strategies to reduce police powers through the reallocation of funding, decreasing over-policing, separating policing and mental health services, and decreasing militarization.

## SANDRA KROEKER

### *Young People's Voices on Climate Change*

Background: Concussions can affect an athlete's Scholarly discourse has established the links among psychological wellbeing, climate change, adverse weather events, and natural disasters and together these point to a range of negative mental health impacts including climate anxiety or eco-anxiety (Bradley et al., 2014; Carlton, 2017; Chalquist, 2009; Clayton, 2020; Clayton & Karazsia, 2020; Coffey et al., 2021; Cohen et al., 2009; Corral-Verdugo et al., 2011; Doherty, 2015; Isla, 2002; Kaplan & Guskin, 2019; Masten, 2014; Miles-Novelo & Anderson, 2019; Obradovich, 2018; Reser et al., 2012). Climate anxiety, also referred to as eco-anxiety is fear about the future environment (Coffey et al., 2021). Climate change

is predicted to have consequences for populations worldwide (Clayton, 2020; Coffey et al., 2021). The effects of climate anxiety include "increased levels of PTSD, depression, anxiety, substance abuse, and even domestic violence" and the groups most affected are Indigenous peoples, the elderly, and children (Clayton, 2020, p. 1). This research project will contribute new insights into the implications of climate/eco-anxiety on the mental health of young people. For example, the Toronto Star exclaims that the climate crisis has created "a generation that's supercharged with anxieties" (Chisholm, 2019, p. A1). The consequences of climate or eco-anxiety have been associated with the 35% increase in counselling appointments and increased wait times reported across 13 Universities and Colleges in Southern Ontario (Chisholm, 2019). The long wait times are an indication that these post secondary institutions have not caught up with the demand for student counselling.

## OUSSEMA EL AJEL

### *Do donors use Climate aid to protect their supply chain?*

The literature on climate aid allocation claims that recipient climate-related needs are a significant determinant of climate aid despite accounting for bilateral trade as a proxy for donors' interests. We posit that selection and allocation models in previous literature does not account for the role some donor countries play in the supply chain of companies incorporated in donor countries, and thus do not properly account for donors' needs. Using bilateral aid data from OECD stat and TiVA data base, we investigate the impact of supply chain dependence on the selection of climate aid recipient countries and the allocation of recipient countries.

SESSION 6   CHANDU TIRUMALARAJU PLAZA 411	
PRESENTER	PROGRAM TYPE
Marcelo Muniz Correa	Biotechnology
Katrina Carbonara	Applied Health Sciences
Anneliese von Eicken	Biotechnology
Rob Crozier	Applied Health Sciences
Jeremia Coish	Applied Health Sciences

## MARCELO MUNIZ CORREA

### *Phosphoinositide signalling: testing the friendship between lipid transporters and lipid kinases*

Despite only being present in small amounts, phosphatidylinositol (PI) is a crucial component of cell membranes. PI's headgroup is a site for chemical modifications, particularly phosphorylation. With the help of enzymes, a total of seven phosphorylated PI derivatives, called phosphoinositide phosphates (PIPs), can be made in our cells. PIPs serve as intracellular chemical signals recognized by protein effectors, which in turn initiate different processes like cell division, RNA virus replication, and intracellular calcium release. Moreover, PIPs rely on various players to regulate their pools across multiple cell membranes, namely proteins that transport their universal precursor (PI) and enzymes that phosphorylate the latter. Of particular importance to our work is the interplay between human and yeast Phosphatidylinositol Transfer Proteins (PITPs) and Phosphatidylinositol-4-kinase III (PI4KIII). These proteins are thought to work together to ensure an appropriate amount of one of the PIPs, phosphatidylinositol-4-phosphate (PI4P), in Golgi complex membranes. Some models have been proposed to explain the not yet fully understood crosstalk between said two classes of proteins. To test one of those models (the Nanoreactor Model), human PI4K-III and PITPs will be employed in a fluorescence-based assay. Originally offered in a single readout format, the assay has been modified

by our group to provide real-time data, thus offering valuable kinetic information. Our results will afford better insight into the intricacies of PI4P regulation, which can lay the groundwork for future explorations in lipid dynamics and the possible development of drugs that target proteins in these pathways.

## KATRINA CARBONARA

### *Sometimes faster can be better: improved front-end proteoform recovery and resolution for deep proteome analysis*

To understand molecular mechanisms, we must first understand the biologically active players: proteoforms (i.e., isoforms, splice variants, post-translational variants). The current gold standard to detect these species is two-dimensional gel electrophoresis (2DE; resolving proteoforms by charge (isoelectric focusing; IEF) and molecular weight (SDS-PAGE)). Over the last 10-15 years purportedly 'faster' methods have become popular although they do not support parallel technical replicates nor routine proteoform analysis. Here we report improved analytical times without sacrificing data quality. A typical mini-format 2DE experiment takes 4 days to complete (i.e., IEF to imaging). Additionally, older reports suggest a 20-66% protein loss during the 2DE rehydration process [1,2]. The aims here were to (1) determine if sample rehydration for IEF (16 hours to 4 hours) could be reduced; and (2) determine if an alternate face up method for rehydration would reduce proteoform losses. Increasing the surface area by microneedling the dehydrated immobilized pH gradient strip prior to rehydration reduced rehydration time from 16 to 4 hours. Additionally, face up rehydration reduced total proteoform loss to 0.04%; notably, in contrast to previous reports, our detailed assessments show that losses during face down rehydration amount to less than 0.3% of the total proteome.

## ANNELESE VON EICKEN

### *Characterization of Negeviruses and insect virome interactions during co-infection in cell culture and mosquitoes.*

Hematophagous arthropods foster a wide range of infectious agents, including bacteria, parasites, and viruses. Mosquitoes can have a variety of viruses that fall under two main categories: arthropod-borne viruses (arboviruses) and insect-specific viruses (ISV), the latter of which can only infect insect cells. *Aedes aegypti* and *Aedes albopictus* mosquitoes are known to transmit many dangerous arboviruses, like dengue, yellow fever, chikungunya and Zika viruses. These mosquito species are most often found in tropical and sub-tropical regions, but have been found in Canada in recent years, likely due to climate change. Negeviruses are a newly discovered taxon of ISVs that show promising results as a virus-based technology for pathogen control strategies through superinfection exclusion, which occurs when one viral infection inhibits a second infection from another virus. Since little is known about these viruses, further understanding of the biology of Negeviruses and their interactions with other mosquito ISVs would be beneficial to predict Negevirus maintenance in wild mosquito populations. Thus, we propose a series of co-infection experiments that aim to characterize more features of Negeviruses in major arbovirus vectors: Aag2 cells derived from *Ae. aegypti*, and C6/36 and U4.4 cells derived from *Ae. albopictus*. Aag2 and U4.4 cells have pre-existing chronic infections with other ISVs, while C6/36 cells are free of infection allowing us to assess the effects of simultaneous infections and superinfections with different virus combinations. Competition, enhancement, and inhibition of Negevirus infection will be monitored with these cell lines to describe virome interactions.

## ROB CROZIER

### *Identification of glycogen synthase kinase 3 (GSK3) as a candidate therapeutic target in allergic inflammation*

Mast cells are granulated immune sentinels and critical effector cells responsible for perpetuating allergic inflammatory pathologies. Fc<sub>ε</sub>RI cross-linkage as a result of multivalent allergen binding, leads to the activation of a number of downstream signaling cascades including MAPK, PI3K/Akt and the NF<sub>κ</sub>B pathway, culminating in rapid mast cell degranulation and prolonged cytokine/chemokine production and release. Glycogen synthase kinase 3 (GSK3) is a constitutively active serine/threonine kinase that serves as a major convergence point for several highly regulated signaling cascades, including the PI3K/Akt and the NF<sub>κ</sub>B pathway. Due to its central role regulating downstream production and release of pro-inflammatory mediators, GSK3 has become an intriguing therapeutic target in various inflammatory pathologies but has yet to be fully explored in IgE-mediated mast cell activation. Therefore, the objective of this study was to dissect the regulatory role GSK3 plays in allergen-activated mast cells. IgE-sensitized murine bone marrow-derived mast cells were incubated with the GSK3 inhibitor CHIR99021 (10 & 20 mM) and stimulated with allergen and stem cell factor. GSK3 inhibition was found to significantly reduce downstream phosphorylation of JNK ( $p<0.01$ ) and IKK ( $p<0.05$ ), while Akt, ERK and p38 levels remained unaffected. Protein modulation resulted in significant inhibition of mRNA expression and cytokine release of IL-6 ( $p <0.0001$ ), IL-13 ( $p<0.0001$ ) and TNF ( $p<0.0001$ ). Together, these results are the first to fully characterize GSK3 as a central regulator of Fc<sub>ε</sub>RI-mediated signaling and pro-inflammatory mediator release, making it an intriguing therapeutic target to help combat the current allergy epidemic.

## JEREMIA COISH

### *Augmented Zika virus infection by dengue virus antibodies in KU812 mast cells is coupled to CXCL10 and IL-1 $\beta$ secretion*

**Background and Aim:** Zika virus (ZIKV) and dengue virus (DENV) have antigenic similarities that lead to cross-reactive antibody binding, whereby antibodies generated from previous DENV immunity can augment ZIKV replication through Fc<sub>γ</sub> receptors in vitro by an immunological paradox called antibody-dependent enhancement (ADE). Mast cells (MCs) are abundant at tissue sites interfacing with the external environment and have emerged as key regulators in mosquito transmitted DENV infection. However, MC responses to ZIKV remain relatively unexplored.

**Methodology:** MCs were infected with ZIKV pre-incubated with DENV antibodies and collected 4-, 48-, 72-, and 96-hours post-infection (hpi). ZIKV infection was measured by plaque assay and qPCR while CXCL10 and IL-1 $\beta$  were quantified by ELISA.

**Results and Significance:** DENV antibodies significantly enhanced ZIKV infection (105-106 pfu.ml and 107 genome copies.ml) between 48 and 72 hpi while also stimulating CXCL10 and IL-1 $\beta$  release. We subsequently blocked Fc<sub>γ</sub> RII functionality which resulted in a reduction of ZIKV release along with CXCL10 and IL-1 $\beta$  secretion. These results suggest an antigen-specific antibody-mediated infection of ZIKV that is coupled to CXCL10 and IL-1 $\beta$  while being mechanistically driven by Fc<sub>γ</sub> RII mediated endocytosis. Therefore, MCs might be a contributor to ZIKV dissemination in the context of previous DENV humoral immunity.

# AFTERNOON ORAL SESSION PRESENTERS

2 P.M. - 4 P.M.

## SESSION 7 | NIGEL KURGAN

PLAZA 308

PRESENTER	PROGRAM TYPE
Ardalan Eyni	Management
Matheus Leite	Management
Pari Gholi Panah	Management
Maryam Vashahi	Business Economics
Shuai Gong	Management

## ARDALAN EYNI

### *The Logo “Visual Thickness Effect”: When and Why It Boosts Brand Evaluation.*

Logos are among the first elements of brands with which new consumers interact. Thus, the symbolic meanings that a logo implies by its visual characteristics, e.g., circularity vs angularity, symmetry vs asymmetry, can form consumers' early perception of personality of the associated brand. This research aims to contribute to the above body of literature by theorizing and testing the logo “Visual Thickness Effect” as an understudied but influential visual effect. Across 34 fictitious logos, two pre-studies and five main studies, we find support for the logo Visual Thickness Effect, in that thick logos boost perception of brand personality, as a result of increased perception of brand power. Also, the perception of brand power induced by logo thickness

is moderated by consumer's level of perceived power of the self, in that consumers with higher sense of power are less influenced by thickness of logo, as an extraneous sign of brand power, when evaluating a brand. Further, the perception of brand power induced by logo thickness is moderated by consumer's level of visuospatial capacity, meaning that people with higher visuospatial sketchpad are less influenced by thickness of logo, as an extraneous visual stimulus, while evaluating a brand. Also, results suggest that the logo Visual Thickness Effect is at play as long as consumers do not already possess complementary information about the associated brand. Findings imply that brands, especially new-to-market brands, may exploit thick logos. This research contributes to the literature for perception of visual elements, logo design, brand evaluation, and sensory marketing.

## MATHEUS LEITE

### *Beta and Credit Ratings: An Empirical Study of Risk-Measure Anomalies*

Credit Ratings and the CAPM Beta are probably the most widespread measures of credit and market risk in the finance industry. Although they concern different sources of financing (debt and equity, respectively), they both share a common source of risk: The issuer's (Company) performance. Thus, some convergence between the measures is expected, firms that are considered risky for debtholders should also be risky for equity holders. In other words, if lending money to a company is risky (because it's ability to service the debt might be compromised), so should be buying its shares. This intuitive relation implies that lower credit ratings should be positively related with higher Betas, however, this is not always the case. I study this puzzle and look for possible causes that could explain the apparent anomaly in the risk measures, while mapping a path from credit to market risk, which might be significantly relevant for practitioners given how much they adopt they use and rely on these measures.

## PARI GHOLI PANAH

### *COVID-19 related news announcements and the foreign exchange markets*

I investigate the effects of COVID-19 pandemic on exchange rate price diffusion components; return and volatility related to the major currency markets. I also study the response of these components to macroeconomic fundamentals during the pandemic period. Specifically, (1) I examine the importance of economic conditions during the pandemic, (2) quantify the pandemic indicators and analyze their effects on foreign exchange price diffusion components, (3) compare the effects of the pandemic factors as well as macroeconomic news and examine the context-specific shift in investor reactions.

The reason to focus on FX market is profound impact of COVID-19 pandemic on global economy and various sectors of society such as foreign trade, manufacturing, tourism, aviation and health system. COVID-19 made financial markets more volatile as the pandemic increased uncertainty in foreign trade, foreign investment and intensified financial market risks. In this study, I focus on several questions. Can pandemic indicators explain price component diffusions in foreign exchange markets during the COVID-19 pandemic? Does unscheduled news related to vaccine process development have any effect on major currency return and volatility? Do government intervention policies have profound impact on FX market price return and volatility?

The novelty of my study stems from the fact that I analyze the impact of disease outbreak indicators and news which have valuable information about pandemic on exchange rate price movements empirically and with broad number of indicators, COVID-19 health news and currency pairs.

## MARYAM VASHAHI

### *Is there a gender gap in CEO compensation?*

Studying gender disparity in compensation regarding top management positions contributes to the existing discussion about gender income inequality. While common wisdom suggests that gender pay gap in the labor market favors men over women, gender pay gap in CEO compensation is still a controversial debate. Recent studies show results running counter to each other due to different methodologies as well as data sources; that is to say, it is still not clear if CEO gender pay gap does exist, and if yes, which gender benefits from this gap. Having broken the glass ceiling, do female top executives benefit from their minority status? Or they are just remunerated at similar levels to their male counterparts. What if the gender disparities and discrimination dominates in top level jobs, negatively affecting female CEOs' compensation? I expect to see results indicating women who rise through the "glass ceiling" to the level of CEO are remunerated at similar levels to their male counterparts.

## SHUAI GONG

### *Fair Value Accounting in Banking Sector*

Statement of financial accounting standards SFAS159 has allowed firms to apply fair value option (FVO). Banks have assets and liabilities that are directly exposed to market (marketable securities and related instruments to make a profit from short-term price variations), and they are significant participants in the adoption of FVO. Because fair value options are not mandatory, and because election applies to individual financial instruments selectively, the FVO has proven controversial. And the accounting standards setters have been discussing whether fair value measurement should be extended to a more complete set of financial instruments. Proponents of FVO think that it avoids some of the problems

associated with the current historical cost accounting. One of its main advantages would be to enhance the degree of transparency of financial statements. However, controversies exist as well. For instance, people think that FVA principles do not reflect properly the way in which banks manage their core business, namely the granting of loans. Doubts are also raised with regard to the application of FVO to the liability side of banks. Using US bank holding companies as the sample, I am going to discuss the following 2 main questions in this research: (1) What factors contribute to adoption of faire value accounting in banking sector? (2) How does the adoption of faire value accounting significantly affect the earnings quality of banks? I will use the Probit model for the first question and pooled OLS for the second question.

## SESSION 8 | PHIL WALLACE

### PLAZA 311

PRESENTER	PROGRAM TYPE
Sarah Galway	Applied Health Sciences
Taranjot Dhillon	Applied Health Sciences
Sara Madanat	Applied Health Sciences
Keetyn Maxwell	Applied Health Sciences
Victoria Dewar	Applied Health Sciences

## SARAH GALWAY

### *Focusing on the positives: A test of positive body image models in elite athletes.*

Although high performance athletes often report improved body image compared to non-athletes and non-exercisers, they are not exempt from negative experiences. Alarmingly, many young athletes experience negative body image and disordered eating which can lead to poor mental health and performance outcomes as well as sport dropout. Experiencing positive body image may buffer these negative experiences, making it important to understand ways to foster positive body image and

eating behaviours in elite athletes. The purpose of this study is to examine models of positive body image (the acceptance model of intuitive eating and the embodiment model of physical activity) in elite athletes using a cross-sectional design. We aim to recruit 100 Canada Summer Games Athletes, 100 recreational athletes, and 100 non-athlete controls ( $N = 300$ ). Participants will complete demographic information, physical activity and sport participation measures, and a battery of body image measures via an online survey. We will test models of positive body image using serial mediation and ANCOVA analyses. Results from this study will identify experiences of positive body image and eating behaviours in Canada's top summer athletes, as well as determine if participation in sport can lead to positive body image experiences in not only elite, but recreational athletes as well. Understanding these potential positive and protective roles of sport engagement will help to understand ways to promote sport as a lifelong physical activity, across various competition levels.

## TARANJOT DHILLON

### *Developing a positive body image program for young South Asian Canadian women*

Most body image interventions are designed to reduce or prevent negative body image or eating disorders and tend to be implicitly designed for white women; as such, these interventions do not address specific body image concerns for South Asian women. Therefore, a targeted intervention reflecting the needs of young South Asian women (e.g., strategies to overcome cultural conflicts) will promote positive body image and enhance wellbeing in a typically ignored population. Approximately 6-9 South Asian Canadian women aged 16-28 years will be recruited as stakeholders for the development of the positive body image program. Stakeholders will be recruited via social media (e.g., Twitter, Instagram), educational institutions (i.e., high schools, universities), religious institutions (e.g., Gurdwaras, Mandirs, Mosques), and

South Asian organizations (e.g., Laadliyan). Potential stakeholders will participate in a brief online screening interview to ensure eligibility, interest in body image and intervention design, and allow for a diverse selection of stakeholders. Selected stakeholders will participate in a series of online stakeholder meetings (focus groups), each of which will address specific topics such as concepts of body image, body image in the South Asian culture and its influences, Western vs South Asian cultural differences, the program's structure and delivery, and stakeholder feedback. Stakeholder meetings will be audio-recorded, transcribed verbatim, and analyzed via thematic analysis. This data will guide the design of the program, including its structure, themes/topics, and activities. Furthermore, this developed positive body image program will be tested in a second study.

## SARA MADANAT

### *Effects of Cardiac Rehabilitation on Depression and Body Image Across the Lifespan*

Most research examining the effectiveness of cardiac rehabilitation has focused on early phases; none looked at phase 3 maintenance programs, nor examined prevention-based programs. This study looked at characteristics of those attending a cardiac rehabilitation maintenance and prevention exercise program, differences between those that finished 6-months of the program and those who did not, and effects of the program on body image and depression. Members ( $n = 111$  males,  $n = 101$  females,  $M_{age} = 63.3$  years,  $SD = 10.1$ ) of a community-based cardiac rehabilitation program completed anthropometric tests and self-reported measures of body satisfaction and depression at baseline and after 6 months. On average at baseline, individuals were identified as at risk for clinical depression and slightly dissatisfied with their body function and appearance and men reported lower satisfaction with their body function than women. Three two-way ANCOVAs showed that responders (i.e., those who completed questionnaires at 6 months) reported more favorable psychological

profiles than non-responders at baseline, with significantly higher levels of satisfaction with body appearance [ $F(1, 204) = 5.95, p < .05$ ] and function [ $F(1, 203) = 8.58, p < .05$ ]. A two-way mixed MANCOVA showed no significant changes in depression or body satisfaction across the 6-month program [ $F(1, 67) = 1.48, p > .05$ ]. It may be possible to identify individuals likely to drop out of cardiac rehabilitation maintenance and prevention exercise program through assessment of body image and develop programming to improve body image upon entry to increase adherence.

## KEETYN MAXWELL

### *Exploring Parental Experiences and Meaning of Involvement within Youth Sport: An Interpretative Phenomenological Analysis*

By applying an interpretative phenomenological analysis approach, the purpose of the study was to explore the lived experience of parental involvement in youth sport and the meaning the involvement holds. Specifically, I wanted to examine how role identity theory can provide deeper understanding to how parents experience and provide meaning to their involvement in their children's sport. A key aspect to the study is that as the researcher, I was attempting to understand the experiences of the participant's meaning-making. I utilized qualitative methods such as artifact elicitation to further assist in exploring and understanding my participants' identities. Master themes that capture the overall phenomenon were constructed that were present across the majority of participants while still allowing for each participant's unique experience to be understood. The overarching themes interpreted from the data include: Desiring Involvement, Onus on Parental Roles within Involvement, Commitment, and Constructing Meaning-making of the Experience. These findings highlight the ways in which role identity salience defines the experience and the meaning involvement holds to a parent. This study provided deeper theoretical understanding of the experience of being a parent involved in youth sport, as well as highlighted

the usefulness of conducting research in this field with an interpretative phenomenological analysis approach to explore a complex and diverse topic.

## VICTORIA DEWAR

### *How to Engage Social Media Users in Women's University Sport: An Analysis of a Canadian University Women's Hockey Team's Social Media Content*

As sport organizations continue to realize the benefits of social media that enable organizations to engage with their stakeholders. Thus, there is a growing need to understand the best practices of social media usage, which may allow sport organizations to increase the engagement of their followers and monetize their social media platforms more effectively. Organizations cater their marketing and communications strategies on social media to fit the needs and wants of their followers (Pegoraro & Jinnah, 2012). Without the understanding of what engages fans of university-level sport, managers do not have the resources to develop a content plan that is engaging thus falling short of reaching the organization's social media goals.

The purpose of this study was to conduct a content analysis of a Canadian university women's hockey team's social media content over the course of two seasons. The objective of this study was to uncover what type(s) of content led to increased engagement and online interest. The study focused on the team's Twitter and Instagram content and analyzed the differences between the engagement levels of posts based on their brand attribute, content form, gratification, live-tweeting purpose, and objective.

Results of this study may help provide a new perspective on effective social media utilization at the university level and within women's sport. Sport marketers of university athletics departments and individual teams may be able to utilize these results to make more effective decisions surrounding what type of social media content will engage users.

## SESSION 9 | MARVEL MEGALY

### PLAZA 408

PRESENTER	PROGRAM TYPE
Penghan Yan	Computer Science
Mohaimin Ehsan	Computer Science
K M Nafiul Hassan	Computer Science
Mubashir Murshed	Computer Science

## PENGHAN YAN

### *Fog Connectivity Clustering and MDP Modeling for Software-defined Vehicular Networks*

Vehicle Fog computing combines smart and connected vehicles to form a mobile cloud. In light of solving the issues originating from unstable vehicle connectivity, several works have modelled link stability for data delivery. However, works have shown that certain mobility patterns potentially misinform the uncertainty-based estimation process. We thus propose a region-based connectivity ranking strategy. Dynamic clusters of vehicles are defined and mapped over an urban centre and across time through a stochastic process/MDP-based model. This mapping allows better connections, service delivery, and Cloud systems that rely on the underlying communication. Our model admits four parameters to describe vehicular connectivity: short futures distance between vehicles and cellular media; received signal strength indication on exchanged messages; time a vehicle is under communication range; and connection degree between a vehicle and its neighbours. In addition, we merged these parameters into an evaluation of vehicles' potential communication to perform dynamic clustering based on their connectivity. The change of such clusters over time is then modelled stochastically to identify dynamic patterns. This model expects to classify urban regions and better understand communication opportunities in a large-scale scenario. The classification occurs according to a more precise connectivity modelling in a simulated environment.

composed of 5G and WAVE networks. The simulated analysis has vehicles following real mobility patterns, and a Software-defined Vehicular Network allows for faster resource allocation/processing under a Fog area.

## MOHAIMIN EHSAN

### **Priority Based Resource Allocation in Vehicular Fog Computing**

**Background:** Concussions can affect an athlete's Vehicular Fog Computing (VFC) has been promoted to boost the computational capabilities of individual vehicles without relying on servers, supporting services and applications for intelligent transportation. VFC conveniently and suitably serves delay-sensitive tasks because of its low-latency vehicle-to-vehicle transmission. However, due to limited computing capacity and the high cost of updating, vehicles' onboard computers face significant problems matching the demanding, high-quality services to perform these tasks efficiently. Several related studies have proposed techniques for pooling idle computer resources among vehicle nodes, but a few have explored prioritization strategies. In an environment where resources are scarce, prioritizing them and respective services maximizes overall gain and efficiency. We thus focus our work on a priority-based hierarchical resource allocation method, where the network is controlled by three entities: fog, controller, and vehicles. Each vehicle's resource request is then prioritized depending on specific characteristics of the vehicle, such as the request deadline, the distance between the roadside unit and the vehicle, vehicle direction, and location. Prioritization is organized following a three-tier queue (high, medium, and low) to identify and allocate managed resources depending on request and availability priority. A prioritizing algorithm is implemented to determine this priority for this queue-oriented system. The algorithm aims to meet QoS requirements by reducing the time a service request spends in the system queue and attaining high throughput by effective resource provisioning. We expect to observe reduced overall response time

and total cost for serving requests in simulation analyses through large urban computing scenarios.

## K M NAFIUL HASSAN

### ***Multi-layered caching and data distribution using vehicular mobility in 5G vehicular fog computing networks***

Research and advancements in technology have revolutionized modern transportation systems. Vehicular ad-hoc networks (VANET) allow vehicles to communicate and share data. Cloud computing is implemented in VANETs to deal with the mobility of vehicles by providing support to data availability and larger storage opportunities. Vehicular edge and fog computing became essential to instantaneous data sharing and computing for nearby ever-growing demands. Therefore, caching data plays a vital role in enabling data access, bringing faster responses, making data more available. This work investigates a multi-layer efficient caching strategy and data distribution. The layers hierarchically support data centers, Fogs, and Edge nodes for higher data availability and prompt responses. Following a distributed structure, the cache promptly updates based on recent demands. This hierarchical design relieves upper layers of the architecture and provides a faster data fetching mechanism. We are also encouraged to distribute data using vehicular mobility by placing limited but significant data into the cache of the vehicle. These communication and data exchanges are standardized through our methodology policies. The proposed approach aims to achieve a higher cache hit ratio from requesters in small and large-scale urban distribution scenarios. Also, the design introduces a layered caching policy to maintain simultaneous communication between the scopes and reduce data exchange latency. We observe the performance of our cache management approach through large-scale simulated analyses, where frameworks are implemented over large scenarios composed of high mobility connected vehicles. Our design is also intended to explore data caching with 5G for vehicular Fog computing.

## MUBASHIR MURSHED

### *Adaptive RL-based Decision for Efficient User-centric Virtual Cell Management and Handover in 5G Vehicular Networks*

The advancement of 5G technologies and Vehicle-to-Everything communication opens a new paradigm for Intelligent Transportation Systems in safety and infotainment services in urban and highway scenarios. Connected vehicles are vital for enabling massive data sharing and supporting such services. Consequently, a stable connection is compulsory to transmit across the network successfully. The new 5G technology introduces more bandwidth and reliability, but it faces a low communication range, suffering from more frequent handovers. The shift from a base station-centric view to a user-centric view helps cope with the smaller communication range and ultra density of 5G networks. We develop a Reinforcement Learning (RL) decision algorithm based on the user-centric approach through Virtual Cells (VC) to efficiently handle handovers and cell management. Our VC can help maintain stable connections by remaining connected to multiple base stations and creating a virtual cell with several stations for each vehicle. Moreover, the random direction of traffic flow, high mobility, uncertain road traffic situation, and signal strength from transmission points vary from time to time and cannot always be predicted beforehand. The RL algorithm learns in real-time for more accurate handover decisions according to the current status of vehicles and respective transmission towers. Our proposed method is expected to reduce the number of handovers by selecting the appropriate size of Virtual Cells through adaptively learning the environment. We will observe our expectations by implementing our proposed approach in large-scale, realistic, dynamic simulated urban scenarios composed of high-mobility vehicles connected with 5G networks.

## SESSION 10 | KAY WABOSO

PRESENTER	PLAZA 409 PROGRAM TYPE
Jiayi Li	Child and Youth Studies
Melissa Blackburn	Child and Youth Studies
Matthieu Dagenais	Applied Health Sciences
Kirina Angrish	Applied Health Sciences
Sarah Davis	Child and Youth Studies

## JIAYI LI

### *Social goal orientations and social outcomes in early adolescence: The moderating role of friends' characteristics*

Social goal orientations (SGOs) guide youth to react to peer interactions and strive for different types of social interaction, further influencing their social outcomes (SOs, Ojanen et al., 2005). Three SGOs guiding youth's pursuit of social competence are social development goals (SD, develop high-quality peer relationships), social demonstration-avoid goals (SDV, avoid negative judgement), and social demonstration-approach goals (SDP, pursue social superiority) (Ryan & Shim, 2008). Friendships also play a crucial role in both SGO and SOs. Not only can friendship selection and socialization shape one's SGO (Ojanen et al., 2013), but friends also provide immediate reactions to one's social behaviors (which are partially based on their SGOs) thus influencing future social status. Using a dyadic perspective considering both members of a friendship dyad, the current study aimed to investigate if friends' SOs can moderate the association between one's SGOs (i.e., SD, SDV, and SDP) and SOs (i.e., social preference, leadership, power, and popularity). Participants were 359 US sixth graders ( $M_{age} = 11.44$ ,  $SD = 0.57$ ; 49.3% female) and their nominated friends. Participants self-reported their SGOs on scales, and peer nominations were used to assess SOs. Results indicated that friends' social preference significantly moderated the relationship between

one's SGO-particularly SDP and SDV-and social preference. The dyadic approach provided insights into the role of friendship in youth's social experience. Broadly, the findings can inform educators and intervention efforts aimed at developing youth's social competence by targeting specific friendship dyads.

## MELISSA BLACKBURN

### ***Assessing changes to adolescent health-promoting behaviors following the onset of the COVID-19 pandemic: A multi-methods exploration of the role of within-person combinations of trait perfectionism***

This presentation will review a recently published paper that provides a multi-methods exploration of how within-person subtypes of self-oriented perfectionism (SOP) and socially prescribed perfectionism (SPP) were related to shifts in health-promoting behaviors among adolescents following the onset of the COVID-19 pandemic. Study One tested the  $2 \times 2$  and tripartite models of perfectionism through a quantitative test of how such subtypes predicted changes in health behaviors pre-pandemic to intra-pandemic among 202 adolescents ( $M = 17.86$ ,  $SD = 1.421$ ). Results indicated that the combination of high SOP/high SPP was linked to the most maladaptive changes to health-promoting behaviors, supporting the tripartite model. Study Two aimed to contextualize these findings by analyzing semi-structured interviews with 31 adolescent self-identified perfectionists ( $M = 15.97$ ,  $SD = 1.991$ ) during the initial lock-down mandate. Results indicated that participants experienced a welcome break and found more time to engage in health-promoting behaviors. However, those high in SOP – regardless of their level of SPP – had more difficulty relaxing due to a resistance to relenting their perfectionistic standards. Altogether, these findings support the exacerbating role of SOP when combined with SPP posited by the tripartite model of perfectionism with respect to adolescents' health-promoting behaviors during the COVID-19 pandemic.

## MATTHIEU DAGENAIS

### ***A pilot feasibility study investigating the effects of a yoga intervention on positive body image among various social identities***

**Introduction:** Yoga has been shown to promote positive body image (PBI) intervention, although the majority of literature on yoga and PBI has focused predominantly on young women.

**Purpose:** To evaluate the feasibility and acceptability of a PBI yoga intervention in a sample of men and women across the lifespan, and to examine the preliminary effectiveness of the yoga intervention on body image.

**Methods.** Approximately 50 adults ( $\geq 18$  years of age) who are currently not engaging in yoga will be recruited from community-based organizations in Niagara. Participants will be randomly assigned to a yoga or waitlist control group. The yoga intervention will be comprised of two weekly 60-minute classes for 10 weeks; each class will focus on a different dimension of PBI. The waitlist control group will engage in twice weekly education seminars on a variety of health-related topics. Participants will self-report demographic information and body image measures, which will be administered at baseline, 5 weeks, and at program end. Study adherence, retention, and dropout rates will be measured at program end to assess feasibility and acceptability.

**Implications:** This proposed study will help to gain insight into conducting a full randomized controlled trial. This study will offer insight about the effectiveness of a yoga intervention on PBI across age, gender, and weight status, as well as mechanisms of change.

## KIRINA ANGRISH

### *A qualitative investigation of motivators and barriers to online prenatal yoga among Canadian pregnant women.*

Prenatal yoga is a low-intensity physical activity recommended for pregnant populations, given its links to improved mental and physical health. Despite this, participation rates in prenatal yoga are as low as 13%. Styles (2019) identified scheduling and accessibility as two barriers to prenatal yoga. Online yoga programs can address these barriers by increasing convenience, as it can be done at home. However, in non-pregnant populations, online yoga has presented unique difficulties (e.g., distractions). Similarly, Sharama et al. (2022) reported technical difficulties in their sample of yoga instructors as a disadvantage of online teaching. Whether these issues are true for pregnant women or prenatal yoga instructors has not been explored. Therefore, this study aims to (1) understand the motivators and barriers of online prenatal yoga, (2) identify the desired characteristics of an online prenatal yoga program, and (3) explore prenatal yoga instructors' perceptions of a safe online prenatal yoga program. Fifteen Canadian pregnant women and 12 prenatal yoga instructors will be interviewed via video conferencing. Participants will be recruited through yoga studios and pregnancy-specific organizations. The inclusion criteria include pregnant women or prenatal yoga instructors who: (1) are at least 18 years old, (2) understand English, and (c) live in Canada. Semi-structured interviews will be audio-recorded and transcribed verbatim. Reflexive thematic analysis, using inductive and deductive approaches, will identify critical themes. This study will inform researchers and practitioners on designing safe online prenatal yoga programs.

## SARAH DAVIS

### *An Evaluation of a Virtual Training for Dance Instructors to Implement a Behavioural Coaching Package*

Most dance instructors are not provided with formal training to teach dance skills and it has been reported that they often employ an authoritarian teaching style with a focus on corrective feedback, which can adversely impact dancers' experiences. A behavior analytic approach to dance education may provide dance instructors with positive strategies that increase the accuracy of dance movements and the satisfaction of dancers. Using a concurrent multiple-baseline design across five participants, we evaluated the outcomes of a virtual training informed by the behavioral skills training framework (i.e., instructions, modeling, rehearsal, and feedback) on dance instructors' implementation of a behaviour analytic coaching package consisting of four elements (i.e., task analyzing dance skills, emphasizing correct performance with focus points, assessing performance through data collection, and providing optimal feedback). The dance instructors' performance was scored as a percentage of correctly implemented behavioural coaching elements. While data collection is on-going, the virtual training shows promising results. To date, three participants have met mastery criteria (i.e., implemented the elements of the behavioural coaching package with 100% accuracy, across two consecutive sessions). Dance instructors' perceived acceptability of the virtual training and the utility of the behavioural coaching strategies will also be obtained through social validity questionnaires.

## SESSION 11 | ANA-LUCINA GALINDO

PLAZA 410

PRESENTER	PROGRAM TYPE
Lulu Larcenciel	Child and Youth Studies
Renata Roma	Child and Youth Studies
Kelly McCowell	Child and Youth Studies
Amanpreet Randhawa	Applied Disability Studies
Kingston Wong	Psychology
Niruba Rasuratnam	Applied Disability Studies

### LULU LARCENCIEL

#### *Accessible Methods for Young Autistic Research Participants*

As Autism/ASD prevalence rates rise, so too does the global autism research community - yet many researchers have not adapted their methods to accommodate for differences in language use, processing, sensory profile, or lived experiences of Autistic people. Both qualitative and quantitative autism studies often employ methods that have only been validated in typically-developing populations or have never been validated; nonspeaking Autistic young people are rarely consulted at all due to the assumption that children without verbal speech have no potential for competent communication. The intersectional nature of barriers Autistic populations face and the colonial nature of many behavioural measurements are also rarely accounted for. Changes made to measures and measurements, communication options, language, and historically-rooted assumptions in this field can all be profoundly beneficial to produce accurate, equitable data.

This presentation summarizes historical and current trends in methods approaches in the study of Autistic young people, types of practical and interpretive problems that arise from using standard/non-validated measures in Autistic populations, and examples of methods made accessible in a mixed-methods design.

Larcenciel is an Autistic researcher invested in improving the quality of data collection in childhood autism research. Details of how her upcoming mixed-methods investigation of anxiety and social camouflage in Autistic youth will incorporate accommodations and adaptations to ensure an accessible and affirming experience for participants will illustrate how various stages of research design can (and should be) examined through a "Critical Autism Lens".

### RENATA ROMA

#### *Exploring associations among personality characteristics, attachment to dogs, and well-being among young people during the COVID-19 pandemic*

An increasing number of young people with different personality characteristics have opened their homes to a dog during the COVID-19 pandemic. Research is needed that explores if and how personality characteristics and attachment to dogs might be associated with well-being among young people. In an online survey, 441 participants (390 females; 47 males; 4 nonbinaries, Mage=20.7, SD 2.13 range=17-25) completed measures of well-being (social-connectedness, global self-worth), as well as measures of personality characteristics (The Five-Factor Inventory), and pet attachment (the Pet Attachment Questionnaire). Regression analyses were then conducted. Not surprisingly, higher scores in extraversion, openness, and agreeableness were each associated with higher self-reported levels of global self-worth and social connectedness among young people. Interestingly, however, higher levels of neuroticism and anxious attachment towards one's dog were both associated with lower levels of self-reported global self-worth and social-connectedness among young people. Additionally, we found a correlation between anxious attachment towards one's dog and neuroticism. These results support a connection between aspects of personality and well-being among young people.

during the Covid-19 pandemic. Interestingly, these results support a connection between the quality of attachment that young people share with their dogs and young people's well-being. The implications of these results are discussed within the context of programs designed to support the well-being of young people and the role of attachment to dogs.

## KELLY MCCOWELL

### *Confronting our precarious existence: Disrupting linear temporality through encounters with alternative temporal logics*

The purpose of this qualitative study is to understand how some relate to time atypically in order to offer society alternative ways of being in the world more generally. Both the COVID-19 pandemic as well as increasing threats of climate change have engendered an appreciation of the precariousness of our existence; in short, these crises have illuminated the inevitability of an uncertain future. Despite the loom, the ways in which we live our lives in Western society reflects a linear, future oriented temporality where able-bodied citizens often strive for progress and advancement, transformation, and ultimately mastery of the environment. Other temporalities exist, however, such as those shared by people whose bodily experiences construct their social realities unconventionally. Often it is their diagnosis that puts them out of line with developmental time and fundamentally the American ethos of a productive life. This study strives to disrupt the domination of linear time and instead argues that these alternative relationships with time may be more well suited to the precarious nature of our lives. Guided by Rosemarie Garland-Thomson's (2012) bioethical assertion that we might want to conserve rather than eliminate disability, I seek to uncover alternative temporalities in the hopes of disclosing their generative potential. Four memoirs will be used as qualitative data to convey the experience of disability, temporalities and alternative ways of being in the world. It is my hope that the

findings highlight opportunities for rethinking about the ways in which we perceive and interact with time.

## AMANPREET RANDHAWA

### *Go to Sleep Already! Evaluation of a Telehealth Parent Training Program for Parents of Children with Autism Spectrum Disorder*

Background: Concussions can affect an athlete's Many children with autism spectrum disorder (ASD) have sleep problems, ranging from inappropriate sleep dependencies to difficulties falling and staying asleep. Research supports parent-implemented, behaviour-analytic sleep interventions to address sleep problems in children with ASD. Further, some research exists to support distance models of parent education and sleep intervention. Although some studies may report on general measures, they do not collect direct data on the accuracy of parent implementation of the sleep intervention (i.e., treatment fidelity). As parents are typically the primary mediators of behavioural sleep interventions—and intervention success depends on the accurate implementation of the procedures and the consistency with which those procedures are implemented in the natural environment—this is a significant gap in the literature. The current study used a single-case research design, specifically a concurrent multiple baseline across participants design, to evaluate whether parents could be trained to accurately implement their child's behaviour-analytic sleep intervention. Four parent-child dyads were recruited. A training package consisting of behavioral skills training (i.e., instructions, models, role-play, and feedback) and nighttime coaching support was provided to parents using a telehealth approach. Nighttime coaching support was systematically faded. Results demonstrate that treatment fidelity increased for all participants.

## KINGSTON WONG

***Vulnerability vs. resilience: The role of inflammation and gut structure/function and microbiota composition on the prenatal alcohol-induced mental health problems***

According to the Public Health Agency, approximately 9 out of 1,000 babies born are diagnosed with Fetal Alcohol Spectrum Disorder (FASD). As a result of prenatal alcohol exposure (PAE), children can exhibit cognitive, physiological, and behavioural problems. Importantly, up to 90% of individuals with FASD will develop mental health problems such as depression and anxiety.

A possible mechanism underlying the increased vulnerability to mental health problems in the context of FASD are alterations in immune function induced by increased gut permeability and/or altered gut microbiome. In both animals and humans, we know that gut microbes, through the gut-brain axis, can impact brain development and behaviour and that dysregulation of the gut microbial composition can lead to emotional dysfunction.

So far, there is evidence of a pro-inflammatory bias in PAE rats and a recent study has also shown that PAE induced long lasting shifts in gut microbiota composition. Furthermore, PAE could also affect gut epithelial layer and increase permeability. However, little is known on how these PAE induced changes in the gut could be directly affecting immune function as well as how changes in immune function could lead to depressive and anxiety-like behaviours.

Using a well-established rat model of PAE, we will elucidate patterns of vulnerability and resiliency within markers of immune function as well as gut microbial composition, structure, and function that may mediate emotional regulation in the context of PAE.

## NIRUBA RASURATNAM

***Evaluating Video Prompting with Embedded Safety Checks to Teach Prospective Parents and Caregivers Correct Installation of Child Passenger Safety Restraints***

In Canada, motor vehicle collisions are the leading cause of unintended injury-related deaths among children under the age of 14 (Yanchar et al., 2012). The primary cause of these deaths is the improper use of child passenger safety restraints (CPSR; Tessier, 2010). Correctly installed CPSRs can decrease the risk of death by 71–82% (Arbogast et al., 2004). To date, X studies have included video prompting within a multicomponent package intervention to teach correct CPSR installation and harnessing; however, the independent effect of video prompting on correct CPSR installation and harnessing has never been evaluated. Therefore, we will use a single-subject research design called a concurrent multiple baseline across participants design to evaluate the effectiveness of video prompting with embedded safety checks to teach prospective parents and caregivers to correctly install CPSRs and correctly harness an infant-sized doll with minimal researcher involvement. These data can help parents and caregivers correctly install CPSRs and correctly harness their child in a CPSR, which can subsequently decrease the risk of serious motor vehicle injuries or death. Further, if found to be effective, it is possible that car seat manufacturing companies could create similar videos to help their consumers correctly install CPSRs and correctly harness children in CPSRs.

## SESSION 12 | VICTORIA DYKSTRA

### PLAZA 411

#### PRESENTER

#### PROGRAM TYPE

Jessica Braun	Applied Health Sciences
Quinten Carfagnini	Applied Health Sciences
Shawna Hopper	Applied Health Sciences
Bruna Fernandes	Applied Health Sciences
Taylor Baillie	Applied Health Sciences

### JESSICA BRAUN

***Tideglusib lowered oxidative stress in diaphragm muscles from DBA/2J mdx mice, but could not restore SERCA function***

Duchenne's Muscular Dystrophy (DMD) is a severe muscle wasting disorder with no cure and individuals unfortunately succumb to the disease due to cardiorespiratory failure. The mdx mouse model for DMD is most widely used on a C57BL/10 background and previous work has shown that the sarco(endo) plasmic reticulum Ca<sup>2+</sup> ATPase (SERCA) pump is a viable therapeutic target. Recently, mdx mice on a DBA/2J background have emerged as a more clinically relevant model, better recapitulating human DMD and demonstrating increased severity. Importantly, SERCA function in the diaphragm muscles of this model have yet to be examined. Furthermore, unpublished work from our lab shows that inhibiting an enzyme called glycogen synthase kinase 3 (GSK3) with tideglusib improved skeletal and cardiac muscle form and function. Thus, this study sought first to characterize SERCA in diaphragm muscles from C57 and D2 mdx mice as well as determine whether tideglusib treatment could rescue SERCA function. Results from the first part of this study show the most prominent impairment in SERCA function is found in the D2 mdx diaphragm compared to the C57 strain. Treating D2 mdx mice with tideglusib for 4 weeks did not rescue SERCA function, however

total protein reactive oxygen/nitrogen species (RONS) was reduced compared to vehicle treated mice. Since SERCA is highly susceptible to RONS damage, it is possible that longer term treatment of tideglusib is required. Alternatively, to maximize the benefit of tideglusib, combination therapy with pharmacological SERCA activation may be necessary and should be examined in future work.

### QUINTEN CARFAGNINI

***What Factors Increase Odds of Long-Stay Delayed Discharge in Alternate Level of Care Patients?***

**Background:** Patients no longer requiring the current level of care they are receiving, but continue to be delayed from discharging, are designated as Alternate Level of Care (ALC) patients. These patients add to the continued challenge surrounding hospital overcrowding. We assessed risk factors surrounding long-stay ALC patients or those who have been delayed more than 30 days.

**Objective:** The primary objective of this study was to determine what factors increase the odds of long-stay delayed discharge in ALC patients.

**Methods:** We conducted a retrospective cohort study utilizing data from Niagara Health's WTIS database between September 2014 and September 2019. We compared hospital location, demographic and needs/barriers factors pertaining to regular vs. long-stay ALC patients using logistical regression analysis.

**Results:** Of the 16,436 patients, 1,679 (10.2%) were considered to be long-stay ALC patients. Long-stay ALC patients were more likely to be male (OR = 1.22), be directly admitted as opposed to through the ED (OR = 1.30), currently occupy a convalescent care bed (OR = 5.52) or mental health bed (OR = 9.75) and have a discharge destination of an LTC bed (OR = 66.39). Each present barrier increased the odds of becoming long-stay ALC by 44%. Odds were also increased by the presence of a bariatric (OR = 6.13), feeding (OR

= 6.48) or infection (isolation) (OR = 2.03) barrier.

Conclusions: Long-stay ALC patients were more likely to be directly admitted males with discharge destinations to LTC and assisted living facilities with the presence of bariatric, feeding and/or isolation requirements.

## SHAWNA HOPPER

### ***Subjective cognitive decline and related worry: Examining biopsychosocial correlates in mid-age and older Canadians***

Introduction: Subjective cognitive decline (SCD), a self-reported decline in cognition in otherwise cognitively healthy people, has been acknowledged as a risk factor for Alzheimer's disease. Using data from the Canadian Longitudinal Study on Aging (CLSA), a large national study with participants ages 45-85 at baseline, we sought to identify correlates of SCD and SCD-related worry.

Methods: In our primary analysis using a Poisson regression model, associations between biopsychosocial variables and SCD were identified (analytic sample: n=21,920). In a second analysis using an ordinal regression model, associations between biopsychosocial variables and SCD-related worry were identified (analytic sample: n=12,694).

Results: Multiple risk and protective factors of cognitive decline were not associated with SCD within our sample (i.e., physical activity, hypertension, vision problems), as well as minority stress variables such as sexual orientation and race. Rather, psychosocial variables (i.e., depression, perceived social status, and personality traits) showed a more consistent association with SCD within the sample. Greater SCD-related worry, which is believed to increase the risk of future dementia, was associated with specific personality traits, depression, age, gender, and sexuality.

Conclusion: The results from this study confirm the association between multiple health variables and SCD but also emphasize the importance of considering psychological and social factors when conceptualizing SCD and its risk factors.

## BRUNA FERNANDES

### ***Settlement Worker Supporting Older Immigrant Women in a Smaller Urban Setting***

To support economic, population and cultural growth, Canada relies on immigration. Immigrants face unique challenges related to language, housing, cultural acclimatization, transportation, and social isolation. Community-based settlement services are an effective way to mitigate these challenges and settlement workers are an integral part of those services. Settlement services can offer opportunities to enhance the experiences of immigration for older immigrant women. However, there is scarcity of literature exploring the experiences' of settlement workers and the needs of older immigrant women. This study proposes to address gaps in the literature by answering the following question: How do settlement counsellor support older immigrant women in a smaller urban region setting? A constructivist lens coupled with a qualitative description approach will be used, Inclusion criteria for participants: (1) work as a settlement counsellor in the Niagara Region; (2) employed as settlement counsellor for at least six months; (3) provide direct support to older immigrant women. Six semi-structured interviews will be conducted, digitally recorded and transcribed verbatim. Participants will be asked about ethnic background, length of experience as a settlement worker, resources available to them, gaps in the services they provide, utilization of services, barriers to access and needs of older immigrant women. Data will be uploaded to NVivo and thematically analyzed. The results of this study will improve understanding of challenges encountered by settlement workers while working with older adult immigrant women in small urban region areas.

## TAYLOR BAILLIE

### ***Failure to Engage: Factors Contributing to Delayed Treatment Initiation for Combat-Related Post-Traumatic Stress Disorder within the Canadian Armed Forces***

Although there is an abundance of mental health services and resources available for members and veterans of the Canadian Armed Forces to access after returning from active military combat, concerns regarding post-deployment mental health constitutes a significant public health concern. Specifically, failure to initiate treatment in a timely manner for post-traumatic stress disorder (PTSD) and comorbid mental health conditions, such as major depressive disorder and generalized anxiety disorder, continues to be problematic for the military population.

The vast majority of research in relation to PTSD and the military has focused on the effectiveness of various treatments of PTSD or examined the prevalence of PTSD within the military population. In comparison, limited research has studied the specific factors that are responsible for causing delays in treatment initiation for combat-related PTSD, and the detrimental effects that military personnel are subjected to as a result of delayed or untreated combat-related mental health conditions, thus creating a research gap that needs to be further addressed.

Through the use of semi-structured interviews and document analysis, my qualitative research study will seek to gain insight about the factors contributing to delayed treatment initiation for combat-related PTSD within the Canadian Armed Forces. As a result, this research will aim to address the existing research gap and provide knowledge that can assist in informing strategies to promote help-seeking behaviours and creating effective interventions that reduce delays in treatment initiation for combat-related mental health conditions.

## SESSION 13 | STACEY WOODS

### CAIRNS 207

PRESENTER(S)	PROGRAM TYPE
Ahmad Mohammad	Applied Health Sciences
Julia Lavalle	Applied Health Sciences
Jeanisa Haneiph	Applied Health Sciences

## AHMAD MOHAMMAD

### ***The Effects of Exercise on Alzheimer's disease Neurophysiology in Ovariectomized Mice***

Background: In the brain, cleavage of the amyloid precursor protein (APP) produces amyloid-beta ( $\text{A}_\beta$ ) peptides which can form plaques. The rate-limiting enzyme in  $\text{A}_\beta$  production is beta-site amyloid precursor protein cleaving enzyme 1 (BACE1). In females, estrogen loss is associated with increases in  $\text{A}_\beta$  and BACE1 content and activity. Estrogen is known to reduce  $\text{A}_\beta$  peptide content and BACE1 activity and content. Exercise also has beneficial anti-amyloidogenic effects introducing the idea that exercise may compensate in cases of estrogen depletion.

Methods: 24-week-old female C57BL/6 mice underwent bilateral ovariectomy (OVX; n=20) or SHAM surgery (SHAM; n=20). Mice were assigned to one of four groups (n=10/group) for 8 weeks: (1) sham control (SHAM), (2) sham with a wheel in the cage (VWR), (3) ovariectomized (OVX), (4) ovariectomized with a wheel in the cage (OVX+VWR). Promethion behavioral phenotyping and novel object recognition testing (NORT) were performed the week prior to collection of the right and left hippocampus and prefrontal cortex.

Results: Over 8 weeks, the ovariectomized mice ran less than the sham group ( $65 \pm 9.2 \text{ km}$  vs  $529 \pm 37.2 \text{ km}$ ,  $p < 0.05$ ). In the NORT, OVX mice had a lower percentage of investigation time compared to SHAM, this was maintained at control levels in the OVX VWR

group. OVX mice also had higher prefrontal cortex BACE1 activity compared to SHAM ( $p<0.0001$ ) while the OVX+VWR were not different from SHAM.

Conclusions: Voluntary wheel running in an ovariectomized model prevented increases in BACE1 activity, maintained memory recall and may provide a mechanism to reduce the progression of Alzheimer's disease.

## JULIA LAVALLE

### *Ignorance Is Bliss: Calories on Menus and Body Image*

The Healthy Menu Choices Act requires that all restaurants in Ontario with 20 or more locations post calories on their menus as a strategy to decrease obesity rates. However, the effect of calorie labelling on caloric intake is minimal. Research examining body image and calories on menus has focused on the young females and is quantitative in nature. This study aimed to qualitatively examine the relationship between body image and calories on menus in males across the lifespan. Twelve participants (ages 22-76) completed a demographic survey and participated in a one-on-one semi structured interview. Participants spoke about their experiences dining at restaurants with calories presented on the menu and how the caloric information impacted their decisions. Questions also prompted the individuals to reflect on how they perceived themselves through their body image, and what influence calories had on these feelings. The data was analyzed using reflective thematic analysis. Initial analyses have led to the generation of three themes, including: perceptions versus actual calorie use, use of calories dependant on contextual factors such as lifestyle, and throwing calories to the wind: choosing when calories count. Overall, many participants had positive thoughts and experiences with calorie labeling, however many did not find them relevant for their personal use. Individual differences were present and future research can examine how to promote healthy eating amongst a broad population, which will help inform public policy and body image research.

## JEANISA HANEIPH

### *Identifying gaps in the body image literature about South Asian women living in western settings: a scoping review*

South Asian women are an underrepresented demographic within the body image literature, particularly those living in Western countries. his group may be especially susceptible to negative body image given the social pressures from both cultures regarding the appearance ideal. In accordance with PRISMA-ScR guidelines, this scoping review will map and identify gaps in the current literature on body image in South Asian women living in Western countries (e.g., Canada, US, England). Inclusion criteria were peer reviewed original research articles investigating body image in South Asian women living in Western countries across all ages. A database search of articles published until February 2022 in OVID Medline, PsychInfo, CINAHL, Web of Science, and Google Scholar was conducted and yielded 2435 articles. After removing duplicates ( $n = 86$ ), titles and abstracts were screened for eligibility by the first two authors, resulting in 155 potential articles. Full text review is currently underway. Eligible studies will be charted via Covidence and then imported to MS Excel where study characteristics, participant demographics, study design, body image measures, and relevant outcomes will be compiled. In the last step of this scoping review, the current literature will be summarized to ultimately identify gaps in research to inform future investigations and guide research questions.

# POSTER PRESENTER ABSTRACTS

1 P.M. - 2 P.M. |

CAIRNS BUILDING 3<sup>RD</sup> FLOOR

POSTER PRESENTATIONS	
PRESENTER	PROGRAM TYPE
Fiona Teague	Child and Youth Studies
Michelle Hannett	Child and Youth Studies
Olivia Parker	Applied Health Sciences
Georgina Gardner	Biological Sciences
Ricardo Alva	Biological Sciences
Farzad Mehrpour	Management
Ehsan Khaksar	Management
Mateo Paez Beltran	Management
Alex Popescu	Biological Sciences
Aleeza Malik	Applied Health Sciences
Sunil Anged	Business Economics
Pierre Simiganoschi and Nima Vaez-zadeh Asadi	Earth Sciences
Nicole Garcia	Applied Health Sciences
Albert Wu	Biological Sciences
Andrew McKiel	Applied Health Sciences
Cameron Lang	Applied Health Sciences
Daniela Gatti	Management

Eric Kruger	History
Dana Kalil	Applied Disability Studies
Vanessa Zarb	Social Sciences
Oya Pakkal	Psychology
Brandon Hao	Business Economics
Dario Smagata-Bryan	History
Jenna Osborne	Applied Health Sciences
Jake Maiuri	Child and Youth Studies
Nazurah Khokar	Applied Disability Studies
Sarah Ciotti	Child and Youth Studies
Liam Doyle	Psychology
Natalie Jung	Business Economics
Tanner Geddes	Business Economics
Adam Foster	Business Economics
Andrew Brown	Business Economics

## FIONA TEAGUE

*Transitioning to Post-Secondary During COVID-19:  
An Evaluation of Archway's Success*

First-year students face complex challenges transitioning into a post-secondary institution, which has further become compounded by the challenges of coping with COVID-19. The pandemic has caused the unprecedented requirement for remote delivery of schooling, forcing both students and institutions to quickly adjust to novel circumstances. One way that this has been combated is the launch of the Archway initiative at McMaster University. The Archway program was created in the spring of 2020 to help incoming first-year students navigate the challenging transition to post-secondary and integrate as members of the McMaster community. Offering a mix of student mentorship and staff-led community meetings, Archway has become one part of a broader initiative aimed at supporting student success by focusing on mental health and wellbeing.

The current research explores the experience of first-year students, by measuring how their degree of involvement with Archway has assisted them through transitioning to post-secondary in a COVID-19 context. Specifically, qualitative interviews with students reveal the experience, strengths, and limitations of the Archway program. Students' insight and reasons for varied engagement can inform future program delivery and how to best serve this demographic with an evidence-informed approach. Further, it uncovers this cohort's experience of navigating the diverse educational and personal challenges the pandemic has created.

## MICHELLE HANNETT

### *The Queer Ghost: An Intersectional Analysis of Queerness and Death in Youth*

This poster presentation focus' on the concept of "meaning making" by thanatologist (one who studies death) Dr. Robert Neimeyer (2001) and his piece, "Grief therapy as a process of meaning reconstruction." With his model of meaning making, where individuals who are grieving mentally go back in time to make sense of the loss, I connect this concept to queer theories discussed by Dr. Hannah Dyer and Dr. Kathryn Stockton. Both authors discuss how children who are queer (whether defined as being strictly within LGBTQ+ identity or more loosely as non-normative) are often experiencing losses that may also show Neimeyer's aspects of meaning making.

While queerness and death are often discussed in isolation, a major focus of this presentation is on the intersectionality between queerness and death. If queerness is seen with a looser definition as being "non-normative," can we see queerness within the loss of a child? Likewise, if death has a looser definition, such as a significant loss that is not human life, can we see death in how a queer young person navigates the world? And lastly, how is loss different when it is a LGBTQ+ young person

going through the grief of a literal death? This poster elaborates on some answers and insight between these questions while also discussing similarities and differences between queer studies and thanatology through Neimeyer's concept of meaning making.

## OLIVIA PARKER

### *Effects of a 4-week online stability ball exercise program on balance perceptions and body image in older adults*

Balance training is an important part of physical activity for older adults to maintain/improve balance-related perceptions, which have been linked to the risk of falling or injury. In addition, there are physical changes associated with aging that can be maintained through physical activity to promote functionality and positive perceptions on physical appearance. The purpose of this study was to investigate the effects of a 4-week online pre-recorded stability ball exercise class on balance perceptions and body image in older adults 60 years of age and older. Thirty-seven participants completed online questionnaires assessing balance confidence, falls efficacy, satisfaction with body functionality and appearance, and physical self-efficacy before and after the training program. Enjoyment and intentions to continue the program were assessed post-program only. The training program consisted of a new pre-recorded stability ball class each week for 4-weeks, and participants were asked to complete each video at least 3 times per week. Participants self-recorded the number of classes completed and rating of perceived exertion weekly. Wilcoxon signed-ranked tests indicated no significant differences on balance confidence or falls efficacy (all p's > .05). For satisfaction with functionality and physical self-efficacy, paired-samples t-tests revealed no significant differences. Satisfaction with appearance was significantly higher following the exercise program ( $p < .001$ ). Overall, participants enjoyed the classes and adhered well (93%). Qualitative findings also indicated online pre-recorded stability ball classes are safe and feasible in an at-home setting. In addition,

balance training with a stability ball may promote positive body perceptions related to appearance.

## GEORGINA GARDNER

### *Rapid medium nutrient depletion to below the physiological range by cancer cells cultured in Plasmax*

Mammalian cell culture is a fundamental tool used to study living cells. Presently, the standard protocol for performing cell culture involves the use of commercial media that contain an excess of many nutrients, such as glucose and amino acids, in order to prevent depletion during experiments. While this reduces the likelihood of cell starvation, it creates non-physiological culture conditions have been shown to 're-wire' cellular metabolism, causing phenotypes to diverge significantly from *in vivo* states. Recently, researchers have developed new media like Plasmax formulated to approximate the nutrient composition of human blood plasma. Although this represents an improvement in cell culture practice, physiologic media may be vulnerable to nutrient depletion over the course of a typical experiment, particularly those that extend over several days. In this study we directly addressed this concern by measuring the rates of glucose and amino acid depletion from Plasmax in several cancer cell lines (PC3, LNCaP, MCF-7 and SH-SY5Y) over 48 hours. In all cell lines, depletion of glucose from Plasmax was rapid such that, by 48h, cells were hypoglycemic (<2mM glucose). Most amino acids were similarly rapidly depleted to sub-physiological levels by 48h. In contrast, glucose and most amino acids remained within the physiological range at 24h. Notably, when the experiments were performed at physiological oxygen levels (5%) versus standard (18%) oxygen with LNCaP cells, no appreciable effect of oxygen on the rates of glucose or amino acid consumption were observed. Thus, cell culture in Plasmax requires daily media exchange.

## RICARDO ALVA

### *Differential gene expression induced by oxygen concentration in distinct cancer cell lines*

Standard cell culture does not involve regulation of headspace oxygen levels inside incubators. Since its atmospheric concentration is ~21%, headspace oxygen equilibrates at 18%. However, physiological oxygen concentration (physioxia) in tissues ranges from 1-6%. Oxygen concentrations higher than physiological conditions, or hyperoxia, has been shown to influence a variety of oxygen-dependent processes, such as the production of reactive oxygen species (ROS). Our group has found that cells grown at 18% oxygen have a greater production of ROS, altered energy metabolism and mitochondrial networks, and show differences in response to hormones, compared to cells grown at 5% oxygen (physioxia). More recently, we have observed differential gene expression in MCF-7 cells cultured at these two oxygen concentrations. Therefore, the aim of this project was to study the differential gene expression caused by oxygen levels in four cell lines; LNCaP, Huh-7, PC-3, and SH-SY5Y. Using RNAseq and transcriptomic analysys, we found little overlap of differentially expressed genes among these cell lines, indicating that oxygen differentially affects gene expression in distinct cell types. We found that oxygen mainly affected ribosome processing, nitrogen metabolism, cell development, and ECM organization processes in Huh-7 cells, while affecting cytokine signalling pathways and ion transport processes in LNCaP cells. No processes or pathways were significantly affected in the other cell lines. Further proteomic and metabolomic studies are needed to deepen our understanding of the effects of oxygen in cell physiology. Our work emphasizes the importance of maintaining physioxia in cell culture, as to avoid artificial outcomes in basic research.

## FARZAD MEHRPOUR

### *Drivers in Credit Default Risk of Corporates and Predicting Probability of Default among Various Industries*

In this research, the various factors and drivers affecting the probability of default of companies among different industries are going to be defined and studied. There are plenty of studies conducted to estimate the probability of default and in turn credit risk of corporates and yet there are few studies that considered differences among industries. For example, according to the literature, size of a company or Financial ratios such as liquidity ratios and leverage ratios are assumed to be important in predictive models of default probability but most likely the importance of the independent variables are different between food and transportation industries. In this study, the predictive model for various industries will be developed using different regression methods such as logistic regression.

## EHSAN KHAKSAR

### *Determinants of capital structure*

This paper examines the relative importance of many factors in the capital structure decisions of some of the S&P500 companies. In other words, the main purpose here is to analyze the influence of company-specific independent variables (such as company size, the tangibility of assets, current liquidity, growth opportunity, financial return, effective tax rate, and ...) as well as that of governance and macroeconomic variables (including market size, interest rate, inflation rate, and gross domestic product per capita) on our dependent variable that is the total debt ratio. As many of our variables will be strongly correlated with each other, we probably need to separate them into two or three different models. Then

we will study the influence factors based on the multiple regression model, using the method of least squares, where data is structured as panel type.

## MATEO PAEZ BELTRAN

### *Influence of macroeconomic news on cryptocurrencies during the Covid-19 Pandemic*

Cryptocurrencies have gained substantial attention and investor demand, but there is still much debate on whether cryptocurrencies are to be adopted as a financial security. Previous studies have looked at the behavior of traditional financial securities showing evidence that equities, currencies, commodities and bonds significantly react to macroeconomic news. Accordingly, in line with this research, time-series models are applied to Bitcoin, Ethereum and Binance Coin high-frequency return data to estimate the effects of macroeconomic news on the returns and volatility, during the Covid-19 Pandemic.

## ALEX POPESCU

### *Urbanization and social antipredator behaviour in American crows*

American crows are the black-clad rulers of a city's skies and can be spotted in most North-American cities. Over the years, the abundance of these city-dwelling birds has increased, suggesting they benefit from living near humans. Recent literature shows that these urbanized species can behaviourally adapt to exploit anthropogenic resources and maximize their benefits and fitness in urban areas. Typical adaptations to living in urban areas include changes in foraging behaviour, increased intraspecific aggression, and tameness toward humans. While individual-level behavioural adaptations are an active area of research, adaptations of social behaviours are underexplored. By lowering the risk of predation from natural predators, increasing access to anthropogenic food sources, or providing novel sources of stress (e.g. noise/light pollution, feral/free-roaming pets), urbanization might

shift the balance between foraging efficiency and vigilance against predators. In response, individuals that usually exhibit social foraging behaviour could choose to forage in a more individualistic manner.

This spring and summer, we will perform experimental trials in popular crow foraging areas selected from a Brock community science initiative (<https://crowkemon.weebly.com/>). The trials will consist of multiple supplemental feedings of varying quantity and quality of food. Sentinel behaviour in American crows will be quantified and compared between urban and rural populations in the Niagara region. Thus, we ask if social adaptations might be one of the reasons why American crows, *Corvus brachyrhynchos*, a social urbanized bird, seem to thrive in cities. The expected findings of our experiment could help us predict how other urbanized species might respond to urbanization.

## ALEEZA MALIK

### *Selection of High-Risk Individuals for Lung Cancer Screening using a Supervised Machine Learning Approach: Random Forest*

Lung cancer (LC) is the leading cause of cancer-related deaths among men, and the second most common cause of cancer deaths among women, worldwide. Symptoms of LC usually appear at an advanced stage when treatment is less effective, leading to poor prognosis. To reduce the burden associated with LC, screening has shown to be effective for early detection to reduce LC mortality.

Three major LC screening trials include the Prostate, Lung, Colorectal, and Ovarian (PLCO) cancer screening trial, the National Lung Cancer Screening Trial (NLST), and the Dutch-Belgian NELSON screening trial. The NLST found a 20% LC mortality reduction by screening high-risk individuals using LDCT. However, the NLST criteria for selection of high-risk individuals is shown to be less effective for LC screenee selection compared to LC risk prediction models such as the PLCOM2012. Recent advances in modern statistical

and machine learning (ML) techniques are becoming increasingly prevalent. One such ML approach is called Random Forest (RF) which is proven to be a highly accurate predictive method that is capable of handling non-linear and more complex relationships in large datasets compared to traditional regression methods.

The goal of this retrospective study is to develop a superior LC risk prediction model through evaluation of follow-up data from the PLCO trial which encompasses potential LC predictors including extensive nutritional data. Selection of high-risk individuals for LC screening should increase detection of LC and minimize false-positive results which lead to unnecessary invasive follow-up procedures. Statistical analysis will be conducted using the R software.

## SUNIL ANGED

### *Why have Canadian consumers been so slow to adopt electronic vehicles?*

The transportation sector was responsible for 25% of Canada's total greenhouse gasses emissions in 2019. In the midst of the present climate crisis, an increasing number of countries have committed to phasing out the sale of internal combustion engine (ICE) vehicles in order to curb their emission of greenhouse gasses (GHGs). While ICE vehicles have unanimously been the norm for many decades, the significant amount of harm that they pose to the environment is simply not sustainable. In response to this concern, automotive manufacturers have begun shifting towards producing more zero-emission electric vehicles (EVs), and consumer demand for these vehicles has risen slowly. The question remains, why have Canadian consumers been so slow to adopt electric vehicles? A considerable problem exists wherein potential EV customers fail to participate in the market due to a lack of accessible charging stations. In turn, these stations are not built, due to low EV market share. This problem is otherwise known as the critical-mass problem. This research seeks to determine whether the increase in the number of electric vehicle

charging stations across Canada is positively related to the number of electric vehicles registered. The number of publicly available EV charging stations as well as the EVs registered in Canada annually will be collected from Statistics Canada using data from 2017 to 2020. An Ordinary Least Squares regression model will then be used to determine whether there is a significant relationship between the growth of EV chargers and registered EVs in Canada.

## PIERRE AND NIMA

### *Climate change and its impact on the air, water, and groundwater systems of the Niagara region*

The Niagara region is home to many creeks and streams which carry water to Lake Ontario. One popular waterbody in the area is the Twelve-Mile Creek (TMC). The TMC makes up both the upper and lower Twelve-Mile Creek watersheds. This study will focus on the upper part of the watershed, the upper Twelve-Mile Creek (uTMC). The uTMC is the only cold-water creek in the region and is unique for its ability to host the Brook Trout (*Salvelinus fontinalis*). These fish require specific water conditions to be able to thrive and survive in the creek.

Ongoing research has been occurring over the past two decades on the anthropogenic effect on the conditions of the uTMC and how these could affect the unique Brook Trout population. Two branches of the uTMC are being studied, the St. Johns and the Effingham. With anthropological development and activities occurring in the area, the creek must be monitored to ensure the activities do not have any detrimental affects on the water as it puts at risk not only Brook Trout populations but other species as well. Factors which affect Brook Trout viability were monitored such as temperature, pH, turbidity, total dissolved solids (TDS). Increasing local water and air temperatures over the past 20 years do not chronically exceed Brook Trout lethal limits. Further research is ongoing as to the water turbidity and TDS as to how they are affecting the Brook Trout health. pH has not shown change over the 20 years.

## NICOLE GARCIA

### *Do You Think You're Taller And Thinner Than You Actually Are? How Personality Traits And Social Factors Contribute To Distortions In Physical Characteristics*

The purpose of this study was to investigate to what extent certain personality traits (i.e., narcissism, self-esteem) and social factors (i.e., gender roles, social desirability) contribute to distortions between self-reported height and weight and objective height and weight. This question was investigated using the Sexuality and Physical Development Data set, which contains participants responses to a variety of demographic questions, personality scales, and physical development markers such as height and weight. After controlling for various demographic variables, objective height/weight measurements, results demonstrated that the predictor variables accounted for a moderate amount of the variability in the weight and height distortion variables. As expected, people tended to inflate their height and underreport their weight. It was also evident that two of the predictor variables, namely narcissism and occupational preference, were significant predictors of the height and weight distortion variables, respectively. These findings suggest that individuals with many narcissistic traits have a greater tendency to overreport their height than individuals with fewer narcissistic traits. Additionally, these results also indicate that women, who ascribe to traditional feminine gender roles tend to underestimate their weight to a greater extent in comparison to traditionally less feminine women. The study findings suggest that self-report measures are not always a hundred percent accurate and there are several personality and social factors which contribute to these distortions. The other personality and social characteristics were not significant predictors of either the height/weight distortion variables. Therefore, future research should investigate these factors to identify their potential effect on self-report distortions.

## ALBERT WU

### *The domestication and feralization of the Trinidadian Guppy - are we breeding better invaders?*

Domestication is the process by which humans exert an artificial selection pressure for specific traits (e.g., morphology or behaviour) in plants and animals, enhancing desirable traits through breeding. While much attention is paid to the economic and agricultural yield brought about by efforts in domestication, little work has been done to explore the human-caused effects of domestication on the invasiveness of escaped domesticated species. For example, Trinidadian guppies (*Poecilia reticulata*), is a globally dispersed invasive species, and has been introduced into a broad array of ecosystems both intentionally (as biological control for mosquitos), and accidentally (as escaped domestic pets). Thus, *P. reticulata* is invasive both in its domesticated and wild forms.

In a paired study design, we will compare lab reared-domesticated and wild-type guppies in measures of behaviors associated with invasiveness: specifically, problem solving, learning ability, and innovation. We will also assess boldness metrics such as willingness to leave refuge, propensity to explore, and attraction to novel objects. We aim to measure the performance of randomly selected individual wild or domestic guppies of both sexes, in order to examine the impacts of domestication on potential invasiveness. These results will help inform conservation and biological control policies, and contribute to the growing body of literature regarding the traits which contribute to a species becoming invasive.

## ANDREW MCKIEL

### *Child-Adult Differences in Post-Activation Potentiation and Motor Unit Activation in the Potentiated Knee Extensors*

Rationale: Post-Activation Potentiation (PAP) describes the enhancement of twitch force following a conditioning contraction in skeletal muscle. In adults, PAP is greater in muscles with a higher type-II fibre percentage. Further, the PAP-related augmented contractility is accompanied by a decrease in motor-unit (MU) discharge rates.

Children may have lower type-II muscle fibre composition and have been suggested to have a lower ability to volitionally activate their higher-threshold (type-II) MUs compared to adults. PAP in children has been examined to a limited extent and results have been inconsistent. Changes in potentiated MU activation have not been examined in children.

Purpose/Hypothesis: The purpose of the proposed study is to determine if there are child-adult differences in PAP and MU activation of the potentiated knee extensors. We hypothesize that children will have lower PAP and a smaller reduction in MU discharge rates during potentiated contractions.

Experimental Design: A cross-sectional design, comparing prepubescent children to adults.

Methodological Approach: Maximal voluntary contraction (MVC) force of the knee extensors (Biomed System 3) will be determined at the beginning of the session. Isometric twitch torque (Digitimer stimulator model DS7AH) and MU activation during submaximal sustained contractions (at 20% and 70% MVC) will be recorded before and after a conditioning contraction (5s MVC). PAP will be calculated as the difference in evoked twitch torque before and after the conditioning contractions. MU activation will

be examined during the submaximal contractions using Galileo surface electrodes (Delsys Inc) and EMG decomposition (Neuromap algorithm) and will be compared before and after potentiation.

## CAMERON LANG

### ***Effects of Space Restrictions on Upper Extremity Posture and Muscular Activation in Work From Home Environments***

With increases in corporate flexibility and online connectivity, more corporate office environments are adopting work from home scenarios. While business offices often had workstations that considered ergonomic guidelines, these home offices may not meet similar standards, leading to increased postural variability and musculoskeletal injury risk. The work here is designed to quantify posture and muscular activation in work from home settings and will incorporate workspace orientations and space restrictions. 40 university-aged individuals will perform a series of mouse tracking trials designed to mimic typical office computer mousing work. Surface electromyography will be used to measure the activation of 16 muscles from the trunk and upper extremity while a 10-camera Vicon motion capture system will quantify posture during the assessment. Mousing performance will be measured using AimLab. Issues relating to home office workspaces typically include small space envelopes and substandard locations when operating peripherals. Smaller desk spaces allow very little room to have both a mouse and a keyboard, limiting the area required to fully operate a standard mouse. Our environments will be arranged to replicate these types of setups. It is hypothesized that working within a confined space will cause excessive posture alterations, leading to increased muscle activation, and decreased task performance. The goal of this study is to provide results for ergonomists and work task designers, giving them enough information that they may need to extend corporate office guidelines to fit those using a home office workstation.

## DANIELA GATTI

### ***The straw that broke the camel's back: Factors that contribute to the COVID-19 Resignation Boom***

The COVID-19 pandemic significantly impacted people's daily lives, including many organizations being required to shut down or work remotely due to the restrictions of the pandemic. Economists first began estimating in early 2021 that a shift in employment levels would occur due to the stabilization of the economy, especially in North America, due to the reopening of industries that had been closed due to COVID-19 restrictions. Resignation rates were lower during times of economic uncertainty and instability since people need income stability. As predicted, in the summer of 2021, many industries experienced increases in resignations which became known as the "resignation boom" or "the great resignation". Currently, there is limited research regarding the empirical concrete factors of the resignation boom due to the COVID-19 pandemic, since the development and research are still forthcoming. Though there are initial indicators of the economic reasons for the COVID-19 resignation boom, there is a gap in academic literature regarding what factors contributed to the great resignation, how this impacts the nature of work in a variety of industries that rely on in-person interaction. By creating a theoretical framework to support the social phenomenon occurring in the subsequent waves of the COVID-19 pandemic, researchers will be able to better identify the events that may contribute to future labour market changes and ultimately provide professionals with support to better design new workplace cultures in the future for a post-resignation boom workplace.

## ERIC KRUGER

### *Mennonites, German Identity and National Socialism in 1930s North America: A Case Study of The Mennonite*

During the interwar period, strident Germanist sentiments were expressed by some North American Mennonites in a variety of communal print sources. This was further exacerbated with the National Socialists' rise to power, as some Mennonite periodicals openly conveyed support for the dictatorship and enthusiastically entered into an ethnic and cultural myth of a Germanic Volk. Evidence of this is provided in Frank Epp's analysis of pro-Germanism in *Der Bote* and Benjamin Redekop's examination of *Mennonitische Rundschau* for favourable coverage of National Socialism. However, few if any studies have been conducted that examine these same topics within the English-language Mennonite press. My research will analyse an English-language North American Mennonite publication in the 1930s in order to test the conclusions of existing historiography and locate dominant political themes and discourses popular at the time.

My poster will outline research objectives, existing historiography that is central to my study, and methodology. Images of the main primary source material will also be included.

## DANA KALIL

### *Children with Neurodevelopmental and Behavioural Challenges: A Descriptive Case Study Examining the Integration of Dance and Behaviour Therapy Within Day Treatment*

Dance is a form of physical activity that may improve motor skills and coordination while simultaneously providing opportunities for social interaction and

promote development of socio-emotional skills. A manualized program, *Dance with a B-E-A-T!* (behaviour analysis and therapy), combines recreational dance with components of behaviour analysis and therapy to help facilitate improvements in motor skills, social skills, emotional regulation, and self-coping. Building on a pilot study completed by Davis et al. (in progress), the present study evaluated a similar program incorporating behavioural components such as antecedent strategies, positive reinforcement, a token economy, relaxation strategies and positive self-talk. In collaboration with day treatment staff of a mental health centre, the dance program was integrated within children's day treatment. The intensive dance program was offered for five consecutive days to five participants with behavioural challenges (7-9 years) from the same day treatment cohort. The aim of this project was to use a blended behaviour therapy and dance program to teach three dance combinations and examine collateral benefits. Observational probes at pre and post-test measured percent of dance skills completed correctly, and in-person semi-structured interviews with the counsellor and elementary school teacher evaluated satisfaction of the program within day treatment. Results suggested a positive impact on the physical and social skills of participants; increased physical activity and bidirectional use of socio-emotional skills.

## VANESSA ZARB

### *School Delivery and Subjective Well-Being during the COVID-19 Pandemic among Secondary Students: An Examination of the Role of Social Disconnection*

Research has shown that mental health among young people has declined following the onset of the COVID-19 pandemic. Recent studies indicate that school delivery method may be one key contributing factor to this decline, given that online school delivery mode tends to be associated with poorer outcomes. As such, the aim of the current work was to test whether school delivery was associated with adolescent subjective well-being in the context of the

COVID-19 pandemic and whether social disconnection represented an explanatory pathway within this association. Survey data was collected from 362 community adolescents between the ages of 13 and 19 part of a larger longitudinal study. Analyses for the current work are in progress. However, I expect that online school delivery would be associated with poorer subjective well-being compared to in person school delivery. Further, I expect that social disconnection would function as an indirect pathway linking school delivery to subjective well-being such that online school delivery would be linked to greater social disconnection, which, in turn, would be related to poorer subjective well-being. The implications of these findings for youth will be discussed.

## OYA PAKKAL

### *Emotion Regulation: Is it more taxing for adolescents than for adults?*

Even for those with fully mature self-regulation, strong emotions can disrupt cognitive processes, including decision-making, memory, problem solving, and learning. The down-regulation of strong emotions taxes the same cognitive resources used to engage in these other cognitive tasks. Adolescence is thought to be a period of both heightened emotional intensity and developing self-regulatory capacity. Thus, when it comes to performing cognitive tasks while experiencing strong emotions, adolescents may be at a double disadvantage relative to adults: they have both more intense emotions and weaker capacity to down-regulate these emotions. The present study tested this proposition by comparing performance on a demanding cognitive task before and after emotion induction in a sample of adolescents and adults. Self-ratings of emotional arousal were collected at multiple points during the study session. We predicted, based on the developmental model described above, that adolescents would experience a greater decrement in performance on the cognitive task following the emotion induction compared to adults. Moreover, we predicted that this greater decrement would

be attributable both to more intense emotional responses (as indicated by higher levels of self-rated emotional response) and weaker ability to down-regulate the emotional response (as indicated by longer duration of self-rated emotional arousal).

## BRANDON HAO

### *Working from Home vs Commuting to Work*

As the pandemic continues to grow and be a problem for modern society, individuals from around the world may find it harder to find opportunities to work. Furthermore, many jobs may be moved to remote working at home rather than requiring the need to commute. Working at home vs. commuting to work will have numerous differences on factors such as the well being and health of an individual, wages, income, flexibilities in scheduling, and more. Working at home can be very different than working at a workplace as the environment around you changes. At a workplace, there will be the presence of fellow coworkers, boss, staff, and others such as customers which are dependent on the type of job. Working from home, on the other hand, will have no such physical contact. Instead, there may be virtual contact through applications such as Microsoft Teams or Zoom. Working from home seems to be advantageous in many different aspects such as more flexibilities, savings in costs, and better time management capabilities whereas some disadvantages include being isolated from workers, absence of assistance, and the monitoring of employees.

## DARIO SMAGATA-BRYAN

### *Selling a Conflict to Both Sides: The 1812 Victory Debate and Its Role in Canadian and American Nationalism(s)*

The question of 'who won the War of 1812' is the subject of an ongoing debate. Members of the public, public historians, politicians, and even academics engage in this debate even if they do not recognize

their answer as being debatable. A likely reason for the existence of this debate is that both Canada and the United States have employed this conflict for nationalistic purposes ever since it took place, and each nation does so in a way that requires them to claim victory in some form. This unique situation has allowed the debate to continue for over 200 years.

For both Canadians and Americans, the War of 1812 represents key aspects of our created nations. Canadians may view the war as representing our country's rugged nature, our national unity, and our independence. Americans may view it as representing their people's desire for freedom and their militaristic background. People from these nations may imagine that these particular aspects are what helped their nation win the war. My research focuses on ideas such as these and how they connect to nationalism in both the past and the present.

## JENNA OSBORNE

### *Are Exercise-related Cognitive Errors stronger predictors of self-managed MVPA adherence compared to self-regulatory efficacy?*

**Background:** Exercise-related cognitive errors (ECEs) represent a negative bias that causes individuals to exaggerate the struggle associated with their perceived physical activity barriers. The ECE concept is relatively new and associations with physical activity have only been examined cross-sectionally. The purpose of this study was to understand whether ECEs predicted attendance in regular fitness classes over a 12-week period and whether ECEs changed over time. Additionally, we examined if pre-class ECEs predicted self-managed moderate-to-vigorous physical activity (MVPA) outside of their weekly classes and beyond the contribution of self-regulatory efficacy, a putative predictor of MVPA engagement.

**Methods:** Participants ( $N=83$ , Mean= $54\pm13$ , 88% Female), registered in 12-week municipal fitness classes, completed online questionnaires (ECEs,

self-regulatory efficacy, MVPA) at 3 time points: pre-class, week 6, and week 12. Participants also self-reported the number of missed fitness classes.

**Results:** ECEs did not change from pre ( $M=3.67$ ) to 6 weeks ( $M=3.73$ ) or 12 weeks ( $M=3.58$ ). Those who reported missing at least 1 fitness class reported significantly higher ECE scores ( $t=2.35$ ,  $p<.05$ ,  $M=4.58$ ,  $SD=1.50$ ) compared to those who did not miss any classes ( $M=3.55$ ,  $SD=1.50$ ). Pre-ECEs, but not pre-SRE significantly predicted 12-week MVPA outside of the class ( $R^2$  adj.=.175,  $p=.001$ , ECE =-.471,  $p=.001$  SRE =-.124,  $p=.342$ ).

**Conclusion:** ECEs differentiated those who missed and did not miss any classes during their 12-week program and predicted MVPA outside of participants' fitness classes. ECEs may be a useful concept for understanding class non-adherence and self-managed MVPA engagement. Future studies should ECE change over time for individuals who have limited exercise experience.

## JAKE MAIURI

### *Thinking Ahead: How We Can Work With Children Exposed to Maternal Heroin Use*

Prior research indicates that comprehensive, accessible, and immediate services tailored to a child's needs can contribute to more stable development. This study attempts to describe the importance of early intervention-based strategies for children exposed to maternal heroin use. The study describes a ten-year developmental period of one male child exposed to maternal heroin use prenatally. This description includes examination and assessment of medical documents, interviews, and field observations. There is currently a gap in services and intervention tailored to children exposed to maternal heroin use, which this research attempts to describe the importance of and strives for immediate attention. The results of this study point to the adoptive

mother as an integral protective factor against biological vulnerabilities. The data is especially informative for future adoptive and foster parents caring for children exposed to maternal drug use.

## NAZURAH KHOKHAR

### ***On the Rigour of Applied Behavioral Pharmacology: A Literature Review***

At times individuals with intellectual and developmental disabilities (IDD) may engage in problem behavior that is unlikely to subside without intervention. Psychotropic medications are often prescribed to treat problem behaviors in this population. Applied behavioural pharmacology explores how drugs (i.e., psychotropic medications) may influence problem behavior. However, research on this topic is scarce. This dearth may be in part why the use of psychotropic medications to treat problem behaviour remains controversial. To our knowledge, the last systematic review on this topic was published by Matson and colleagues in (2000). Hence, a comprehensive review featuring single case experimental designs, that also comments on study quality is long overdue. Studies included in the current review featured participants with a diagnosis of IDD, with an identified problem behaviour that was an intervention target, and who were receiving psychotropic medications to address problem behaviour. Fifty-five articles met criteria and were scored using a literature-informed Quality Indicator Checklist. Total checklist scores ranged between 32% and 81%, with a mean of 52%. This suggests room for improvement regarding the methodological rigour in applied behavioural pharmacology research. Barriers and possible solutions to improving study quality (rigour), as well as recommendations for accessing and evaluating research in this domain will be discussed.

## SARAH CIOTTI

### ***I Get It, I'm Sick Too: An Autoethnographic Study of One Researcher/Practitioner/Patient***

This qualitative research study utilizes autoethnography methodology and reflexivity as a method to explore how to conduct research while maintaining co-occurring identities as a 'patient' and a 'health professional' (psychotherapist). Reflexivity is a key instrument in the clinical practice of psychotherapy and in qualitative research. Awareness of 'self', is central in psychotherapy, necessitating practitioners attend to 'how' they show up in their work and the impact the therapist's 'self' has on clients. The purpose of this study is to understand the experiences of an 'insider' patient/clinician/researcher (Canadian) with symptom persistent Lyme disease, whilst conducting qualitative research with patients with symptom persistent Lyme disease in Canada. This research study is guided by the central research question: "How does my dual role as health practitioner-researcher and patient 'insider' living with Lyme disease influence my research investigating patients with symptom persistent Lyme disease?". This research contributes to the current academic literature by offering a representation of a reflexive experiences of a researcher who is also a clinician and a patient. Representation is critical in advancing health research and ensuring equitable care for patients.

## LIAM DOYLE

### ***Dimensional Analysis of the Relationship Between Psychopathy and Empathy***

Psychopathy is a personality disorder with extensive consequences in social, corporate, and forensic contexts. One longstanding ambiguity in the empirical literature is whether psychopathy is associated with general or specific empathic deficits. In part, this ambiguity may be due to a lack of research

examining the distinct empathic correlates of each dimension of psychopathy and a failure to consider the unique relationship between cognitive/affective empathy and psychopathy. Participants ( $N = 400$ ) were recruited to complete self-report measures of psychopathy and empathy. Consistent with theory and the empirical literature, each dimension of psychopathy was negatively associated with affective empathy. To a lesser extent, each dimension of psychopathy was negatively associated with cognitive empathy. After partialling out affective empathy, however, the association between each dimension of psychopathy and cognitive empathy was non-significant. Conversely, the associations between each dimension of psychopathy and affective empathy were largely unaffected by partialling out cognitive empathy. It is notable that (a) each dimension of psychopathy possesses relatively distinct empathic correlates and (b) the negative associations between the dimension of psychopathy and cognitive empathy appear to be driven by the common variance shared by affective and cognitive empathy. More research is needed to determine whether this common variance is theoretically meaningful.

## NATALIE JUNG

### *Determinants of Vaccine Hesitancy*

Vaccine hesitancy is a global issue known as the reluctance or refusal of vaccines despite the accessibility of vaccination services. The objective of this research paper is to understand what determinants contribute towards an individual's decision to refuse vaccines despite clinical research results confirming their effectiveness. A deeper understanding of willingness among individuals can assist in public health messaging and decision-making regarding vaccines and concerns about the risks and side effects. To assist my findings, I will be relying on various surveys surrounding vaccination gathered by Statistics Canada. The Covid-19 Vaccination Coverage Survey (CVCS) survey examines vaccination coverage levels by age, gender, education, income,

marital status, country of birth, and immigrant status among various socio demographic categories. The Canadian Perspective Survey Series (CPSS) will help to develop a better understanding of the impact of Covid-19 on specific groups. Additionally, I plan to draw theoretical background from existing literature surrounding the scope and determinants of vaccination hesitancy, behavioural economics, and rational choice models. Previous studies indicate the mandatory nature of vaccinations, their coincidental linkage to bad health consequences, unfamiliarity with vaccine-preventable illnesses, and lack of confidence in companies and public health authorities are all factors that contribute to vaccine reluctance. Given the potential for reluctance to reduce vaccination coverage, it is critical that all countries make efforts to assess the scope and attributes of vaccine hesitancy. As a result, we should devise a vaccination acceptance and demand strategy adjusted for the determinants of willingness among individuals.

## TANNER GEDDES

### *The Impact of Free Trade Agreements on Energy Trade*

Background: Concussions can affect an athlete's Canada is a world leader in the production and use of energy from renewable resources. Renewable energy sources currently provide about 18.9 per cent of Canada's total primary energy supply. In this paper I hope to give light to the impact of free trade on the energy sector. I believe this to be very important as climate change is a pressing issue in modern society, and I hope to show that the openness of trade will facilitate the use of clean energy resources via trade. To do this I analyze whether CETA has encouraged the trade of clean energy resources between Canada and Europe. Additionally, I hope to give insight into the different sectors of energy trade which benefited most from the agreement in 2017. The resources I hope to draw from to make these conclusions come from Statistics Canada, as well as Eurostat to give data that compares both total trade increases (for all of Europe,

and country level), as well as individual sector data to draw conclusions on the effect on the energy sector. I plan to draw theoretical background from existing literature about trade policies (FTAs) and the effect on the energy sector, and tailor it to this specific industry.

## ADAM FOSTER

### *Determining Efficiency in Canadian Household Electricity Consumption*

With global energy consumption on the rise and only expected to grow in the near future, countries around the world are looking for ways to try and reduce their consumption in order to reduce the growing amount of greenhouse gas emissions. In 2015 Canada's Households used over 1 billion gigajoules of energy. Something policy makers should keep in mind is finding new ways to help create efficiency where possible to reduce electricity usage in the residential sector. It is not enough to assume that this efficiency exists but trying to identify causes or indicators of inefficiency must be brought forward for policy makers to target these problem areas in order to help limit energy consumption. The goal of this study is to measure the relative level of Canada's electricity use as well as identify areas to target using socioeconomic indicators for policy makers. Hence this study provides an in-depth assessment of residential electricity and possible efficiency solutions may arise with these findings. The framework of the model follows Stochastic Frontier Analysis to model the inefficiency. Data is collected from tables on Statistics Canada from the 2015 Survey of Household Energy Use (SHEU-2015) Data Tables. These reconstructed data sets will be used in the frontier analysis to determine which characteristics and socioeconomic indicators are greater causes for inefficiency.

## ANDREW BROWN

### *The effects of Covid-19 on Canadian Trade Patterns*

I want to understand the lengths of the Impact the COVID-19 pandemic had on Canadian Trade. With the pandemic becoming more understood and the data being more readily available, it is important to establish the patterns that trade went through. This is important when trying to create new models that could be more accurate with predicting outcomes if another wave sweeps over Canada. · This current piece of literature expands upon Jan 2019 to September 2020. Creating a replication on this with data from March 2020- most recent data, will allow for a fuller picture of the pandemic's effects; this includes being able to identify more trends associated with waves of the pandemic. · It also allows me work with Prof Cardoso to create a new piece of literature that can serve as a benchmark for further research. · It is noted in the paper that more research is needed to come to more conclusive results, this begs more work to be done; this replication serves to fill that void. Another important consideration is preparing to use this type of research to prevent economic collapses that we have witnessed due to a pandemic type situation.

# ORAL SESSION FLOORPLAN

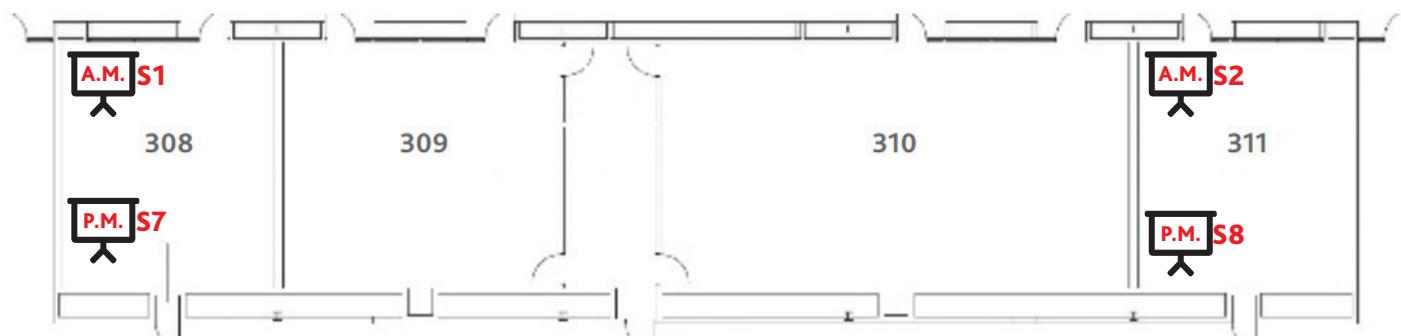


A.M. Morning Oral Session



P.M. Afternoon Oral Session

Plaza Level 300 Floorplan



Plaza Level 400 Floorplan

