

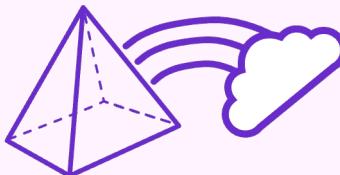


OUT LOUD



The Queer Voices in Research Symposium

Spring 2023



Tues. May 23rd

Downtown Campus
The Neuro
10:30-17:00

Wed. May 24th

Macdonald Campus
The Ceilidh
10:30-17:00

Interdisciplinary symposium amplifying contributions to research from members of the LGBTQIA2S+ community

Contact: outloudsymposium.mcgill@gmail.com

PRISM | Queer Grad Club | Mac Women+ in Science
sponsored by the Center for Structural Biology Research,
the Office of the Provost and Vice-Principal),
and the Faculty of Engineering's E-IDEA

About Us

Out Loud aims to bring together LGBTQIA2+ researchers and allies at McGill. By providing a shared space for this community, The goals of Out Loud are to

1. Support LGBTQIA2S+ undergraduate and graduate students and cater to their unique needs
2. Provide an opportunity to learn from our unique and shared experiences
3. Encourage networking with other queer scientists and scientists of marginalized groups beyond McGill
4. Highlight our individual research as queer scientists
5. Project our voices for a more equitable, diverse and inclusive community in science.

Out Loud is co-organized by PRISM, Queer Grad Club and Mac Women+ in Science.

We hope to highlight the exciting research happening on campus by the queer community. We will host two days of presentations and networking with keynote talks, student talks, and posters; one at the Downtown Campus, and one at Macdonald Campus. There will be prizes for the winners of the best talks and posters!

This event will take place on land which has long served as a site of meeting and exchange among Indigenous peoples, including the Haudenosaunee and Anishinabeg nations. We acknowledge and thank the diverse Indigenous peoples whose presence marks this land on which people of the world now gather.

Program

Tuesday 23rd May 2023 – Downtown Campus

10:30 – 10:45	Opening Remarks
10:45 – 11:45	Research Talk Session (10-minute presentation + 5-minute Q&A)
10:45 – 11:00	Avneet Sharma Sex and Politics in the Novels of Alan Hollinghurst
11:00 – 11:15	Michelle Jimenez Preoperative weight loss intervention in gastrointestinal cancer patients
11:15 – 11:30	Mickey Wu Polycystic ovary syndrome (PCOS) in transmen: Understanding prevalence and contributing factors
11:30 – 11:45	Vegas Hodgins The impact of neurotypical cognition on communication deficits attributed to pathologized people
11:45 – 12:00	Break
12:00 – 12:45	Keynote Talk – Naoufel Testaouni Challenges & barriers facing 2SLGBTQ+ Communities in the Workplace
12:45 – 13:45	Lunch
13:45 – 14:30	Poster Session
14:30 – 16:00	Research Talk Session (10-minute presentation + 5-minute Q&A)
14:30 – 14:45	Cameron McRae Accelerating the Sustainability Transition through Mainstream Marketing
14:45 – 15:00	Cris Delatado Barabas Urban queer immigrant youth's literate lives: Conceptual proposition for research
15:00 – 15:15	Emma Brion 2S/LGBTQIA+ youth and Polyamory: Analysis of the 'J'Prends ma place' survey

Program

Tuesday 23rd May 2023 – Downtown Campus

15:15 – 15:20	Short Break
15:20 – 15:35	Gabrielle Smith Femme pedagogy as liberatory praxis in the music teacher-education classroom
15:35 – 15:50	Jason da Silva Castanheira Healthy aging alters the contents of the brain-fingerprint but not its accuracy
15:50 – 16:05	Taylor Rubin Gender Diverse Student Identities and the Role of Substitute Teachers: An Autoethnographic Study of Educational Policies and Protocols for Safer Classrooms
16:05 – 16:15	Break

16:15 – 16:45 3MT Talk Session

Christian R. Moya García

Localized treatment for throat cancer: taking care of patients' voices

MD Faizul Hussain Khan

Melissa-Ann Pereira Ledo

80% of What You Teach is Who You Are: Queer Representation Matters

Kaylee O'Meara

Similarities between social policy and development policy: Proposals for increased innovation, partnership, and transparency in Canadian public administration

Michelle Pelletier

Water quality analysis in northern communities on the Ungava and Hudson Bays

Tobias Gurl

The Known Unknowns of Trans Male Sexual Healthcare

Program

Tuesday 23rd May 2023 – Downtown Campus

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|----------------------|--|
| 16:45 – 17:30 | Keynote Talk – Dr. Anna Marie LaChance
Nanocomposites: Bringing Queerness into STEM
Education |
| 17:30 – 18:00 | Closing Remarks and Break |
| 18:00 – 20:00 | Social at Thomson House (& Prize Presentation) |

Program

Wednesday 24th May 2023 – Macdonald Campus

10:30 – 11:00 Coffee and Mingling Session

11:00 – 11:15 Opening Remarks

**11:15 – 12:00 Research talk session
(10-minute presentation + 5-minute Q&A)**

10:45 – 11:00 **Allison Ford**

Seasonal and phenological knowledges, biocultural keystone species, and environmental change in Eeyou Istchee

11:00 – 11:15 **Haley Land-Miller**

Feeding niches of Arctic and northward-shifting sub-Arctic marine mammals in Greenland

11:15 – 11:30 **Hannah Silver**

Canadian Neoliberal Imaginaries During Covid-19: A Critique of Gender Based Analysis Plus (GBA+)

12:00 – 12:15 **Break**

12:15 – 12:45 3MT Talk session

Alice Gendron

Cindy Gao

Body size-sexual conflict trait relationships and disc trait interactions in male Graphoderus liberus diving beetles

Jessica Chadwick

Urban soil remediation – a meeting point for art, science and public engagement

Kate Marr-Laing

Non-profit advocacy and meaning-making for social change

Maria Stergiou

Marie Dry

Father, Mother, or Parent?

Program

Wednesday 24th May 2023 – Macdonald Campus

12:45 – 13:45 **Lunch**

14:30 – 15:15 Keynote Talk – Dr. Alexandra Ketchum
A History of LGBTQIA2S+ Student, Faculty, and Staff Activism at McGill and Why These Stories Matter

15:15 – 15:45 **Break**

13:45 – 14:30 Research talk session
(10-minute presentation + 5-minute Q&A)

13:45 – 14:00 **Anna Ma**
You Sound Depressed: A Case Study on Sonde Health's Diagnostic Use of Voice Analysis AI

14:00 – 14:15 **Nicolas Poulin**
A Systems Analysis of Developing Masculinity: An Autoethnographic look at Sexual and Gender Identity

14:15 – 14:30 **Zoey Davis**
Physiologically based pharmacokinetic modeling of poly-brominated diphenyl ethers in urban gulls

14:30 – 14:45 **Break**

14:45 – 15:30 Keynote Talk – Dr. Alexandra Ketchum
A History of LGBTQIA2S+ Student, Faculty, and Staff Activism at McGill and Why These Stories Matter
Presentation notes: <https://tinyurl.com/ketchumout2023>

15:30 – 15:45 **Break**

15:45 – 16:15 Research talk session
(10-minute presentation + 5-minute Q&A)

15:45 – 16:00 **Tim Mt Pleasant**
Situating Graduate Student Understanding of Systemic Supports in place that are meant to benefit their Research qua Education within Canadian Jurisdictions

16:00 – 16:15 **Sarah Mangle**
Wait - What Are We Measuring? Conceptualizing Sexual and Gender Identity

Program

Wednesday 24th May 2023 – Macdonald Campus

- | | |
|----------------------|---|
| 16:15 – 17:00 | Keynote Talk – Dr. Lee Penn
Working to support students and colleagues with marginalized identities |
| 17:00 – 17:30 | Closing Remarks and Break |
| 17:30 – 20:00 | Social at Pub Cousi
31 Sainte Anne St, Sainte-Anne-de-Bellevue H9X 1L2 |



Keynote Speakers

Naoufel Testaouni (He/Him)

Co-Founder & CEO at QueerTech

Twitter: @NaoufeIT



Challenges & barriers facing 2SLGBTQ+ Communities in the Workplace

Abstract: Creating an open and inclusive work environment that attracts and retains diverse talent has never been more important to remain competitive in the market. 2SLGBTQ+ people working in North America still experience many challenges and barriers to entering and advancing their careers in the tech industry. Despite progress being made toward wholly inclusive and diverse workplace environments, there is more to be done regarding stigmatization, higher risk of harassment, intersectionality, and lack of visibility, especially for Transgender and Gender Non-Conforming people. The overall goal of this talk is to increase awareness and understanding of the challenges and barriers facing members of the 2SLGBTQ+ communities in the workplace and to provide practical steps for creating more inclusive and supportive work environments.

Keynote Speakers

Dr. Anna Marie LaChance (She/Her)

Lecturer at University of Massachusetts Amherst

Personal website: www.ThatAnnaMarie.com

TikTok, Instagram, & Twitter, Mastodon:
@ThatAnnaMarie

Newsletter: ThatAnnaMarie.substack.com



Bio: Dr. Anna Marie LaChance is a chemical engineer and STEM educator with numerous professional and creative projects. Through her teaching work, podcast (Rule 63), social media presence (Substack & TikTok), and local political organizing, she is an advocate for abolitionist engineering education and intersectional transfeminism.

Anna transitioned at the age of 22 while earning her PhD in Chemical & Biomolecular Engineering at the University of Connecticut. Throughout her academic career, she has mentored dozens of women and gender-diverse people in STEM, empowering them to bring their “full selves” into their engineering work. She has been widely recognized for her research, teaching, and mentorship.

Anna is a Lecturer for the Department of Chemical Engineering at the University of Massachusetts at Amherst, where she offers courses on chemical engineering process control, polymer processing, and sustainability.

Keynote Speakers

Dr. Alexandra Ketchum (She/Her)

Faculty Lecturer at the Institute for Gender, Sexuality, and Feminist Studies, McGill University

Personal website: <https://www.alexketchum.ca>

Twitter: @aketchum22

Instagram: @dr.alexketchum

Email: alexandraketchum@gmail.com



Bio: Since 2018, Dr. Alex Ketchum has been the Faculty Lecturer of the Institute for Gender, Sexuality, and Feminist Studies of McGill University. She is the Director of the Just Feminist Tech and Scholarship Lab and the organizer of Disrupting Disruptions: The Feminist and Accessible Publishing, Communications, and Tech Speaker and Workshop Series. Her work integrates food, environmental, technological, and gender history. Ketchum's first peer-reviewed book, *Engage in Public Scholarship!: A Guidebook on Feminist and Accessible Communication* (Concordia University Press, 2022), examines the power dynamics that impact who gets to create certain kinds of academic work and for whom these outputs are accessible. Coinciding with the fiftieth anniversary of the trailblazing restaurant Mother Courage of New York City, Ketchum's second book, *Ingredients for Revolution: A History of American Feminist Restaurants, Cafes, and Coffeehouses* (2022), is the first history of the more than 230 feminist and lesbian-feminist restaurants, cafes, and coffeehouses that existed in the United States from 1972 to the present. Ketchum's interest in past imaginings of utopia through business creation and the implementation of communications technologies has guided her new research and third book project on historically contextualizing the relationship between feminist ethics and AI. You can find out more about her other writings, podcasts, zines, exhibitions, and more at <https://www.alexketchum.ca>.

Presentation slides: <https://tinyurl.com/ketchumout2023>

Keynote Speakers

Dr. Lee Penn (They/Them)

Professor at University of Minnesota

Research Lab:

<https://sites.google.com/umn.edu/professor-r-lee-penn/home>



Working to support students and colleagues with marginalized identities

Abstract: Lee Penn is a Professor and the Director of Undergraduate Studies in the Department of Chemistry at the University of MN - Twin Cities and has taught general and upper level chemistry courses, seminars about bikes and nanotechnology, and more. Prof. Penn's research group works with nanoparticles, focusing on their synthesis and characterization, how they behave in environmental systems, and how to synthesize materials using the principles of green chemistry. In this lecture, Prof. Penn will discuss their path from undergrad to professor and their LGBTQIQ+ identities. They will incorporate some effective allyship and inclusive professional practices.

Bio: Lee has been working with nanoparticles since the early 90s, and the Penn group's research foci include understanding the fundamental formation and growth mechanisms of nanoparticles, how nanoparticles are involved in chemical transformations in the environment, and elucidating the link between magnetism and the physical and chemical properties of nanoparticles. Lee is a professor and also the Director of Undergraduate Studies for the Chemistry Department at the University of Minnesota - Twin Cities. They have served as a chemistry advisor, faculty advisor to several student groups, direct mentor to undergraduates through research projects and mentoring programs and developed innovative teaching techniques. Lee Penn has taught honors general chemistry; general chemistry; freshman seminars focusing on garbage, bikes, and nanotechnology; Nanoparticle Science and Engineering (co-taught with faculty from several departments); Green Chemistry; and Materials Characterization. Lee oversees a research group of eleven graduate students and several undergraduates - all working on various topics involving nano and/or sustainability and/or the environment.

Research Talks

Tuesday 23rd May 2023 – Downtown Campus

Avneet Sharma (He/Him)

Sex and Politics in the Novels of Alan Hollinghurst

Department of English

In a pivotal passage in Alan Hollinghurst's novel *The Line of Beauty*, protagonist Nick Guest attends a Conservative MP's wedding anniversary. He turns to fellow party-guest, Margaret Thatcher, and asks her to dance. Shortly afterwards, Nick is upstairs watching his lover Wani have sex with another man, noting how the man's "cock stirred, and thickened, twitched its way languorously up his thigh" (339). Hollinghurst interrupts this exposition with a reminder of Thatcher's proximity: "Downstairs the Prime Minister was leaving" (339). Thatcher's proximity imposes a political intervention in a novel about sex and sexual desire. How does this explicit representation of sex contribute to Hollinghurst's political commentary and qualify the author's anti-Thatcherite politics? This thesis analyzes how sexuality informs the politics of the novels of Alan Hollinghurst: *The Swimming Pool Library* (1988), *The Folding Star* (1994), and *The Line of Beauty* (2004). These novels contain explicit representations of sex which contribute to, rather than distract from, their politics which are deeply rooted in anti-Thatcherism, the AIDS crisis, legalization of gay sex acts, and the historical persecution of gay men in the United Kingdom. My thesis aims to answer the following questions: how does the sex support the politics? How do the politics support the sex?

Michelle Jimenez (She/Her)

Preoperative weight loss intervention in gastrointestinal cancer patients

School of Human Nutrition



Weight loss interventions are sometimes recommended to overweight and obese cancer patients before surgical resection. The research on the effectiveness of these interventions however is very scarce. We conducted a scoping review to identify available evidence on this topic. Relevant studies were identified using four different databases and three independent reviewers. Articles selected for full text review included those with primary research on weight loss interventions in adults undergoing gastrointestinal cancer resection. A total of 12,117 articles were identified and 65 were eligible for full text review. Only 7 articles met the inclusion criteria, including 4 case-control, 1 case report, 1 case series and 1 mixed-methods. Interventions based only on exercise or with an exercise component showed slight improvements in postoperative mild complications. These studies had several limitations, and the interventions and methodologies were heterogeneous, limiting the certainty of the evidence. Our results suggest it is not possible to make a well-founded weight loss recommendation for surgical oncology patients at this time.

Research Talks

Tuesday 23rd May 2023 – Downtown Campus

Mickey Wu (He/Him/His)

Polycystic ovary syndrome (PCOS) in transmen: Understanding prevalence and contributing factors

Department of Kinesiology and Physical Education

Polycystic ovary syndrome (PCOS) affects people with ovaries and is associated with elevated circulating testosterone. The prevalence of PCOS in cisgender women is typically ~10%, while there may be a higher prevalence of PCOS in transmen (i.e. female-to-male transgender individuals). The purpose of this review was to investigate the prevalence and potential contributing factors of PCOS in transmen. The prevalence of PCOS in transmen varied widely among studies, with most supporting an increased prevalence of PCOS in transmen (up to 88.9%). The prevalence of PCOS in transmen not receiving hormone therapy remained elevated relative to cisgender women, suggesting that the increased prevalence of PCOS is not secondary to the administration of exogenous testosterone. We noted several gaps in this literature, including limitations in the methods used to diagnose PCOS in transmen. Further research is required to understand PCOS in transmen to support healthcare providers aiming to provide healthcare to transmen.

Vegas Hodgins (He/Him)

The impact of neurotypical cognition on communication deficits attributed to pathologized people

Department of Psychology



Social communication deficits have been robustly documented in schizophrenia spectrum disorders. Historically, attempts to lessen this dysfunction have focused almost exclusively on modifying the person with schizophrenia's own behaviors and cognition. However, social communication is inherently dyadic, and this approach leaves unaddressed the role of the neurotypical interlocutor in communication breakdown. In this position piece, we review psycholinguistic theories and research in order to propose a more comprehensive and equitable understanding of the social dysfunction that people with schizophrenia experience. We do so by drawing attention to the manner in which neurotypical individuals may drive communication failure in schizophrenia. Stigma is proposed to be a major component of this phenomenon. In addition to an overview of our theoretical framework, we provide a research agenda to test the hypotheses this framework has produced. We hope this piece can inform future research directions within psycholinguistics.

Research Talks

Tuesday 23rd May 2023 – Downtown Campus

Cameron McRae (He/Him)



Accelerating the Sustainability Transition through Mainstream Marketing

Desautels Faculty of Management

Many challenges facing society today are tied to unsustainable patterns of production and consumption that fuel climate change, biodiversity loss, and pollution. Global challenges of such magnitude exert pressures that require multidisciplinary approaches where marketing can play a central role. In this article, we zoom on the agri-food sector to look at how marketing practices can foster the transition of dietary protein sources from animals to plants, which have a smaller environmental footprint. Across four studies, we used big data from grocery loyalty card programs in Finland and Canada to investigate the intersections of consumer socioeconomic status (SES), product prices, and product variety, as well as their combined impact on the demand for protein foods. Theoretical and practical implications for marketing and food policy will be discussed.

Cris Delatado Barabas (He/Him/His)



Urban queer immigrant youth's literate lives: Conceptual proposition for research

Department of Integrated Studies in Education

The presentation, which is a research proposal in nature, will highlight the affective turn in literacy studies and will elucidate on how 'affect theory' and post-humanism can be utilised as frames in order to further interrogate the out-of-school literate lives of urban queer immigrant youth. I will discuss how youth participatory action research approaches can best serve the interests of the mentioned population. The presentation will also propose mechanisms on how to engage urban queer immigrant youth in research, particularly through writing their organic or living literacies. I will propose the concept of "transnational peripheral feelings", building on queer affect theories, transnationalism and identity. With recent calls to bridge out-of-school literate lives and formal schooling practices, I will finally propose some mechanisms on how to engage pre-service teachers in this research.

Research Talks

Tuesday 23rd May 2023 – Downtown Campus

Emma Brion (They/Them)

2S/LGBTQIA+ youth and Polyamory: Analysis of the 'J'Prends ma place' survey

Department of Sociology



Who among 2SLGBTQIA+ youth practices polyamory? What demographic factors may favor disclosure of polyamorous relationship? Using recent data from the "J'prends ma place" survey, collected by the Young Queer Researchers from Qollab on a sample of 3,668 2SLGBTQIA+ Canadian residents aged 15-24, I investigate the relationships between demographic factors and polyamorous practice. I estimate a logistic regression to predict engagement in polyamory using seven demographic predictor variables. Some findings concord with previous literature: polyamorous practitioners are predominantly white, more educated than the general sample, and identifying as pansexual was found to significantly predict polyamorous practice. Two main findings deviate from previous research: low rather than high SES was found to predict polyamorous practice, and identifying as transgender was also found to predict polyamorous engagement. This study points to a need for further research on polyamory among sexual and gender minorities as well as potential avenues for investigation of polyamory in youth.

Gabrielle Smith (She/Her)

Femme pedagogy as liberatory praxis in the music teacher-education classroom

Schulich School of Music



"Canadian" curricula and pedagogical approaches in music teacher-education programs remain entrenched in a static and siloed system of colonial practices which hinder the liberatory potential of music education. The supporting epistemologies are steeped in a hegemonic settler-colonial perspective that exclude and/or tokenize the global majority of voices, pedagogies, and musics. To work towards countering these structures and epistemologies and shift to healing-centered music teacher-education, I offer the relevance of intersectional Feminism and propose the applications of Femme pedagogy towards liberatory praxis. This affirmative vision is centered in relational, healing, loving, vulnerable and collective work which at the outset involves intersectional inquiry to identify, name and counter the root causes of harm. I then discuss ways in which pre-service music educators in our undergraduate methods class develop these skills through circles, mock-teaching and reflective practices. It is necessary for teachers to explore not only the intersections of identities which have been institutionally marginalized, but to also understand and actively expose the power structures of colonialism and white supremacy which continue to sustain systemic oppression in order to heal, dream and move outside of settler-futurity.

Research Talks

Tuesday 23rd May 2023 – Downtown Campus

Jason da Silva Castanheira (He/Him/They/Them)

Healthy aging alters the contents of the brain-fingerprint but not its accuracy

Integrated Program in Neuroscience



Brain fingerprinting is a novel tool that allows us to understand inter-individual diversity in brain activity across health and disease. We derived neurophysiological fingerprints of 606 individuals based on frequency-defined features of eight-minute magnetoencephalography recordings to explore neurophysiological changes throughout healthy ageing. Our ability to differentiate individuals in this cohort was not related to age. Younger adults (18-45 years old) remain as differentiable (92%) as older adults (93%; 65-90 years old), even when using short data segments of 30 seconds. The most differentiating features used for fingerprinting, on the other hand, change across the lifespan along a posterior to anterior gradient. We demonstrate that regions where we can decode cognitive abilities of participants colocalize with the age-related fingerprinting features. Together our study showcases the robustness of fingerprinting across the adult lifespan and demonstrates the relevance of neurophysiological fingerprinting for mapping individual differences in cognition.

Taylor Rubin (She/Her)

Gender Diverse Student Identities and the Role of Substitute Teachers: An Autoethnographic Study of Educational Policies and Protocols for Safer Classrooms



Department of Integrated Studies in Education

School programming and resources in support of 2SLGBTQAI+ and gender-diverse youth have increasingly been prioritized; however, gender non-conforming youth continue to face barriers in education including discrimination and lack of (access to) support. Without formal policies that include substitute teachers, there is a greater risk of students experiencing devastating harm such as being misgendered or deadnamed. Through an autoethnographic self-study rooted in queer, feminist theory, I draw on my experiences as a substitute teacher in two Canadian school districts to demonstrate the urgent need to integrate substitute teachers into the policy, planning, and professional development of 2SLGBTQAI+ educational protocols as part of a holistic approach in support of students involving all school stakeholders. This scholarship-activism paper is a call to action utilizing research to illustrate the need for all school members to uphold safer spaces in classrooms for 2SLGBTQIA+ students with examples and recommendations from the field.

Posters

Tuesday 23rd May 2023 – Downtown Campus

Alexandre Garus (He/Him)

Investigating the impact of the protein dyskerin and of premature aging mutations in the formation of ribonucleoprotein structures and cellular aging

Department of Anatomy and Cell Biology

One of the hallmarks of aging is the progressive loss of telomeres. Telomeres are the ends of our chromosomes, and they shorten as our cells divide and we age. Currently, we understand that some of our cells employ a protein known as telomerase to counteract this loss by extending their telomeres, thus prolonging the capacity of these cells to divide. To function properly, telomerase requires the assistance of other molecules, like the protein dyskerin. In fact, mutations in dyskerin can cause a premature aging disease known as X-linked dyskeratosis congenita (X-DC). Dyskerin is also involved in a complex network of cellular processes, and despite all its importance, we still do not understand many details about its different roles. In my PhD project, I am studying a region of dyskerin that has been particularly poorly characterized until now. I am trying to understand how dyskerin forms protein-RNA complexes, some mechanisms of cellular aging and how disease mutations cause disorders like X-DC.

Aria Brunetti (She/Her)

Caring in community: A narrative inquiry into liberatory harm reduction and peer-education

Department Integrated Studies in Education



This thesis examines the impact of peer-education based harm reduction practices for people who use drugs (PWUD) at music festivals and raves in Montréal. Using narrative inquiry, the study draws on the author's own experiences as a harm reduction volunteer and interviews with participants from the Groupe de recherche et d'intervention psychosociale (GRIP), a grassroots harm reduction organization. The research is situated within a conceptual framework informed by Tim Rhodes' enabling environments (2002) and Shira Hassan's liberatory harm reduction (2022), which prioritize community-based empowerment strategies for PWUD. Analysis of the data yielded three key themes: 1) counter-narratives to drug use enable community safety, 2) harm reduction is emotional labour and peer support amongst educators is vital, and 3) PWUD must be recognized as experts in their own care. Considering that drug use is criminalized and highly stigmatized, the findings contribute to a strengths-based perspective on harm reduction and peer education.

Posters

Tuesday 23rd May 2023 – Downtown Campus

Charlotte Spruzen (She/Her)

Complex microbes in peculiar oceans: What ancient reefs can tell us about climate, seawater chemistry, and evolution

Department of Earth and Planetary Sciences



Throughout Earth history, reefs have been the centres of marine biodiversity, as well as excellent records of ancient marine chemistry and climate. Reefs evolved through time, from simple microbial forms with limited diversity, to complex modern reef systems built by a wide range of animals. The Neoproterozoic era (1000 to 541 million years ago) defined a critical transition in reef morphology, with the appearance of diverse calcified microbes capable of building reef platforms with significant topography. To date, only two of these reef systems have been investigated in full; each reef contains evidence for previously undescribed microbial textures, as well as putative early evidence of animals. Here, I will present results from field studies and petrography of new Neoproterozoic reefs, which formed within the context of extreme global glaciation. I will show that the diverse forms documented in previous work are global phenomena, and present evidence for new microbial textures.

Katy Dmowski (She/Her)

Opioid versus opioid-free analgesia after caesarean delivery: protocol for a systematic review and meta-analysis

Department of Experimental Surgery

The opioid crisis in Canada has been caused in part by the over prescription of opioids by doctors, with many patients being introduced to opioids after undergoing surgery. While almost all caesarean delivery (CD) patients receive opioids, most use less than half of their prescriptions, creating a huge pool of unused opioids in communities that can be diverted and misused. Opioid-free pain medications have the potential to reduce opioid-related harms, however, there is no clear consensus on how opioid-free medications compare to opioids for CD patients. I am conducting a systematic review and meta-analysis to examine how opioid versus non-opioid analgesia impact pain, vomiting, and other side effects in CD patients. I have searched major research databases for all trials and papers comparing opioid versus opioid-free pain medications. I am statistically combining their results to see the overall trends of how opioid versus opioid-free medications impact patient-reported pain scores and drug side-effects. My project could help guide prescribing decisions, as well as guide future research in this area by summarizing and identifying gaps in the scientific literature.

Posters

Tuesday 23rd May 2023 – Downtown Campus

Khiran Arumugam (He/Him)

The Role of the Community Pharmacists in the Management of Acute Pain in Adults: A Scoping Review

Division of Experimental Medicine

Background: Acute pain is under-treated and results in negative health outcomes. Community pharmacists (CP) have the potential to support self-management and improve acute pain outcomes. Knowledge of CP's practices in the management of acute pain and barriers to the delivery of such care is lacking. We conducted a scoping review to describe CPs' interventions in adult acute pain management and identify barriers and facilitators of CPs' engagement in acute pain care.

Methods: According to the Joanna Briggs Institute framework, we searched the literature in five bibliographic databases for eligible studies published after 1990. Search results were independently screened for inclusion criteria by 2 reviewers. Study design, participants, and CP intervention characteristics were extracted. Results were synthesized and organized thematically.

Results: We identified 2424 studies and retained 34 studies for extraction; most were published between 2010 and 2021 (76%). CPs intervene mostly in the domains of acute non-specific low back pain ($n = 17$), dental pain ($n = 6$), and musculoskeletal injuries ($n = 6$). Interventions designed to manage these acute pain conditions were categorized into interventions targeting CPs and interventions targeting patients. The CP-targeted interventions included the implementation of professional associations' clinical practice guidelines or processes of care to assess and expand their role in acute pain care. The patient-targeted interventions included tools and educational interventions to properly manage their acute pain condition (s). Patient- and CP-targeted patient counselling ($n = 19$), professional educational programs ($n = 7$), pamphlets ($n = 4$), simulated-patient scenarios ($n = 5$) covering disease management services, opioid stewardship, non-pharmacological therapies, self-care advice, and referrals to specialists were identified as interventions. Barriers identified by CPs included lack of knowledge and training in acute pain care, lack of patient knowledge on acute pain, and time constraints. Proposed solutions comprised expanding CPs' knowledge and education on acute pain, implementing patient-oriented programs and point-of-care tools, improving CPs' collaboration with healthcare professionals (HCPs), and providing financial and institutional support.

Conclusion: Further evaluation and implementation of efficient educational programs and tools (including digital health tools) to improve knowledge and self-efficacy in acute pain management for CPs and patients need to be explored. Should they be provided with the appropriate tools and financial support CPs could take on the leadership role that would optimize the management of acute pain in their community.

Posters

Tuesday 23rd May 2023 – Downtown Campus

Michelle Kowalska (She/They)



**LGBTQ+ Social and Community Supports in Substance Recovery:
Qualitative Research Study**

Department of Psychology

Individuals of the LGBTQ+ community may be at higher risk for struggling with substance misuse. Research indicates that social support is negatively associated with the development of substance misuse in queer populations. However, little research has been done to investigate the impact of social support in the active recovery of substance misuse among LGBTQ+ individuals.

The goal of this study is to understand LGBTQ+ individuals' definitions and needs regarding recovery, as well as the role that social and community supports may play in substance recovery, using a participatory framework and qualitative methodology. We expect that the results will help practitioners and organizations provide higher quality care and services to LGBTQ+ individuals. Additionally, results should help researchers deepen their understanding of social support and recovery from a queer lens to develop theories of recovery based in community.

Samuel Richer (He/Him)



**Adolescent social stress alters the growth of dopamine axons
to the prefrontal cortex in a sex-dependent manner**

Integrated Program in Neuroscience

After the many years of neglecting the female sex in neuroscience research, it is now the scientific community's duty to accelerate such studies. Depression for instance is twice as prevalent in women than in men and our medical treatments are often based off male rodent research. Here, we present a novel female rodent model of adolescent social stress such that we can better understand how experiences of bullying at this critical time can greatly hamper prefrontal cortex development and negatively affect mental health trajectories. Through viral axon tracing of dopaminergic neurons, we show that stress induces brain circuitry alterations in males in a completely opposite way than is seen in females. This is the first demonstration that exposure to physical/psychosocial harm in adolescence can deviate DA axons from their intended target in a sexually dimorphic manner.

Posters

Tuesday 23rd May 2023 – Downtown Campus

Bradley Por (He/Him)



**Sexuality and Harm Reduction 'Underground':
Transgression and Creation of Legal Space in Electronic
Music Venues**

Faculty of Law

I am presenting a proposal for a postdoc project centered in queer community. The project titled 'Queerness and Harm Reduction 'Underground':

'Transgression and Creation of Legal Space in Electronic Music Venues' will argue that underground social events such as 'raves' create safer spaces for people to consume substances and reduce the risk of overdoses and other harms, particularly for queer people who must navigate a complicated path out of the closet and into community. This project is grounded in my personal experience of addiction while coming out and later finding a sense of safety and connection in underground spaces in Montreal. I propose to conduct interviews with the people I share these spaces with, and to gather a body of evidence proving the essential need for underground spaces that are threatened with gentrification, policing, and capitalist encroachment.

Maya Goss (She/Her)

Instrumentation in Radio Astronomy: Studying Signals from the Early Universe

Department of Physics

21 cm cosmology is an exciting field of astrophysical research which uses 21-cm wavelength neutral hydrogen emissions to study the development of the early universe. These radio-wave emissions, which originally have a frequency of 1420 MHz, are significantly redshifted due to the expansion of the universe, meaning they are measured on Earth at much reduced frequencies. Lower frequencies correspond to older signals. In order to generate a comprehensive map of radio emissions across the universe, it is necessary to use extremely large telescope arrays. These arrays require a great deal of complicated instrumentation, including methods of transporting signals cheaply and effectively from the telescopes themselves to a signal processing hub. Here, I examine the feasibility of using fiber optic cable to transport radio signals. I conclude that although stability and noise in the received signal are potential concerns, this is a viable and compelling option for radio signal transport.

Posters

Tuesday 23rd May 2023 – Downtown Campus

Sarah Ghezelbash (She/Her)

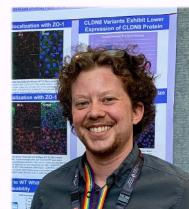


Deconvoluting the Immune Tumour Microenvironment of Triple Negative Breast Cancer in Neoadjuvant Chemotherapy

Division of Experimental Medicine

Resistance to chemotherapy or targeted therapies is one of the major challenges currently faced by oncologists; over 90% mortality of cancer patients is attributed to drug resistance. Triple negative breast cancer (TNBC) has the fastest occurrence of drug resistance among breast cancer subtypes and contributes to the poor prognosis seen in patients. There is a paucity of targeted therapies to treat TNBC, partly due to the incomplete understanding of molecular mechanisms contributing to chemotherapy resistance. The tumor microenvironment, comprising both neoplastic and stromal cells, has been increasingly recognized as a key player in tumor progression and as a promising therapeutic target. The Q-CROC3 clinical trial accrued RNA-Seq data for 28 pre-chemo tumors and 14 matched post-chemotherapy tumors from patients with TNBC biopsies prior to and after standard anthracycline/taxane based chemotherapy treatment. Downstream analysis to better understand the potential molecular and immune differences between these groups was performed using CIBERSORTx, a digital cytometry software, to decipher the cell fractions of 22 different immune cells, as well as their cell-type specific gene expression profiles.

Shane Feinstein (He/Him/His)



The Role of Claudin Gene Variants on Calcium-Based Kidney Stone Formation

Department of Human Genetics

Claudins (CLDNs) are a large family of transmembrane proteins that are found in the tight junctions of epithelial cells. They interact with each other to form various kinds of ion-specific pores and barriers that regulate the paracellular exchange of calcium and other ions in the nephrons. Certain CLDN variants have been well documented as a monogenic cause of kidney stones while other CLDN variants have been associated with kidney stones in genome-wide association studies. We recruited a cohort of children and adults with recurring kidney stones and sequenced their claudin genes, identifying 13 rare or novel variants. I'm doing functional studies on these variants by expressing them in kidney cells in vitro. One of the CLDN8 variants (CLDN8 A94V) shows disrupted localization to the tight junctions that results in a cell layer that is more permeable to both ions and small molecules compared to cell layers expressing the wildtype protein.

3MT Talks

Tuesday 23rd May 2023 – Downtown Campus

Christian R. Moya García (He/II/Él)

Localized treatment for throat cancer: taking care of patients' voices

Department of Biomedical Engineering



Throat cancer has a 5-year overall survival rate of 50% meaning that half of the people with this condition will die, within five years. Throat cancer tumors obstructs the voice pipe affecting critical daily activities as speaking, swallowing, and breathing. Thus, early throat cancer treatment is crucial to avoid the need of total resection of the throat. To de-escalate current overtreatment, the goal of our project is to implement a combination therapy of metformin, an orally-administered chemotherapy enhancer, and docetaxel a conventional chemotherapy drug loaded into nanocarriers. The drug loading into nanocarriers serves to protect lipophilic drugs like docetaxel from early degradation, which increases drug bioavailability. In addition, chitosan is used as a bioadhesive coating on the nanocarrier surface for increased drug retention within tumors since interstitial fluids can promptly wash drugs away. Docetaxel-loaded nanocarriers will be injected into tumor supplying arteries for localized treatment. Meaning that, docetaxel treatment will be retained within the tumor due to the mucoadhesive coating. The proposed combined and localized treatment would shrink the tumor, making it easier to remove, protecting patient's voice pipe and improving their quality of life.

Melissa-Ann Pereira Ledo (She/Her/They)

**80% of What You Teach is Who You Are:
Queer Representation Matters**

Department of Integrated Studies in Education



What are the experiences, impacts, and challenges of queer Teaching Artists in secondary school classrooms? and what is needed to create safe(r) environments for 'out' queer Teaching Artists to do their best work in schools? Booth (2003) has accredited the term Teaching Artist to June Dunbar at Lincoln Center Institute in the early 1970s, to replace the word previously used: "Resource Professional". Teaching Artists and their unique position in schools can contribute to the conversation of creating a more inclusive school and safe(r) schools since Teaching Artists are in a unique position as temporary members of the school environment, and the art classroom offers a unique environment for self-reflexive explorations of identity, including questions of sexuality and gender.

3MT Talks

Tuesday 23rd May 2023 – Downtown Campus

MD Faizul Hussain Khan

Department of Bioengineering

After the onset of pandemic COVID-19, different vaccine platforms including Pfizer and Moderna which are mRNA based; Astrageneca and Oxford which are viral vector based and other organizations using other platforms, had immediately gone into the action to develop the vaccine against SARS-CoV-2. But despite producing large number of vaccines, many parts of the world still don't get a single dose of vaccine. The question is why? According to WHO million doses of vaccine is wasted worldwide due to vaccine instability and lack of proper cold chain management system.

Freeze drying is an effective way to stabilize formulated vaccines for storage, transport and application to patients. A stable vaccine can be produced in large quantities, stored for extended periods, and transported to remote regions, making it more cost-effective. Freeze-drying is a complex process that requires precise control of various parameters, such as temperature, pressure, and time. Focusing on the freeze drying, my research is to validate a predictive physical-chemical (rigorous) lyophilization process model to allow accelerated process design by modeling and to further develop autonomous process optimization and control. Developing and manufacturing vaccines is a costly process, and modeling can help reduce the time and costs associated with trial-and-error experimentation. By using mathematical models, my main focus is to optimize the freeze-drying process for specific vaccines to ensure stability and maximize yields.

The focus of this particular study is to understand the needs and challenges in formulation when dealing with this digitalized paradigm. To do so, two major building blocks of a DT, data and models, is being analysed and designed in two steps. In the primary step, data and their characteristics and collection strategies are examined as well as new methods and tools for data processing. In the final step, modelling approaches and their potential of being used in DTs are reviewed. Analyzing data and creating methodologies that could aid in the development of the freeze drying of rVSV-SARS-CoV2 vaccine process model are currently my main focus. The VSV lyophilization cycle I developed and optimised is being used for this project. For freeze drying, various heat and mass transfer models have been developed over the years, but for my study, I chose the Pikal model equation and kinetics to provide the framework for my process model. Additionally, a pilot-scale statistical experimentation DOE (design of experiments) is being assessed for this model. The most important component of this study is the simulation and validation of the proposed method coupled with the experimental statistical DOE using real-time data. Finally, my research attempt is to bring the DT a step closer to its full potential and realization.

3MT Talks

Tuesday 23rd May 2023 – Downtown Campus

Kaylee O'Meara (She/Her)

**Similarities between social policy and development policy:
Proposals for increased innovation, partnership, and
transparency in Canadian public administration**

Department of Political Science



Why do governments create social policy programs like benefits for the elderly? Because we as a society think it is the right thing to do. Why do governments contribute to international development aid? Because we as a society think it is the right thing to do. Both social policy and international development aid policy seek to alleviate socio-economic inequity because we collectively believe in concepts of distributive justice. Underlying principles of international development inform social policy and vice versa. Despite this conceptual similarity, social policy and international development policy are called and treated different things by the organizations that administer them, including the Government of Canada. In the 2022 budget, the Government pledged more money for both social policy via benefits for the elderly and development policy via foreign assistance. The branches of government and the public service that conceptualize and administer these policies should share knowledge and collaborate between each other to create better outcomes for individuals. Standards for socio-economic well-being both domestically and internationally stand to be improved if government entities were conceptually transparent and listen to each other. Standards and partnerships in governments and between governments could be strengthened to harness currently unlocked potential for innovation.

Michelle Pelletier (She/Her)

**Water quality analysis in northern communities on the
Ungava and Hudson Bays**

Department of Civil Engineering



Collaborating with Menard Lawyers, a criminal defense firm, I collected and analyzed the drinking water conditions of the Puvirnituq, Salluit and Kuujjuaq communities. It was reported by inmates of Puvirnituq prison that the guards force them to drink tap water and that they get sick from it. Water analysis (pH, hardness, turbidity, microbiology) was conducted to produce a full profile and determine what is causing illness. Water infrastructure will be mapped; recommendations will be emitted to tackle this problem.

3MT Talks

Tuesday 23rd May 2023 – Downtown Campus

Tobias Gurl (He/II)

The Known Unknowns of Trans Male Sexual Healthcare

Department of Family Medicine



Trans men are a vulnerable subset of men who face barriers in accessing adequate sexual healthcare. Although their needs overlap with those of cisgender women and men, trans men face distinct physical and psychological challenges related to their gender identity and the process of medical transition. Additionally, existing materials primarily focus on sexually transmitted infections such as HIV and HPV. Although STIs are worthy subjects of study, they do not account for the entirety of sexual healthcare. We aim to answer the following questions through a systematic mixed studies review: (1) What is the proportion of transgender men seeking out non-STI sexual healthcare compared to cisgender men and women? and (2) What are their experiences with healthcare providers, including factors related to satisfaction, (dis)comfort, and inclination to seek out future care? This review will serve as an essential first step toward improving patient outcomes and confidence in medical care.

Research Talks

Wednesday 24th May 2023 – Macdonald Campus

Allison Ford (She/They)

Seasonal and phenological knowledges, biocultural keystone species, and environmental change in Eeyou Istchee

Department of Natural Resource Sciences



Moose are culturally important for many Indigenous Peoples, including the Cree of Eeyou Istchee, northern Quebec. This project is a visual analysis of moose GPS camera collar footage from Eeyou Istchee, focusing on seasonal and environmental change in habitats affected, and those not affected, by commercial forestry. It incorporates both ecological and qualitative research methods, including potential arts-based methods and results presentation. This work contributes to a wider collaboration, the Moose Habitat Quality in Eeyou Istchee Under the Adapted Forestry Regime (MHQ) project, which is guided by Cree communities, and regional and provincial representatives.

Haley Land-Miller

Feeding niches of Arctic and northward-shifting sub-Arctic marine mammals in Greenland

Department of Natural Resource Sciences

Climate change is inducing northward range shifts of sub-Arctic marine mammal species, causing them to increasingly share space with native Arctic species and possibly changing interactions between these species. In this study, I compared feeding patterns of eleven marine mammal species (four Arctic and seven sub-Arctic), in Greenland using stable isotope ratios and fatty acid signatures, to assess their degree of feeding niche overlap. Sub-Arctic species had the largest niche breadths, implying diet flexibility and potential to adapt to further changes. Overall patterns in both fatty acids and stable isotopes demonstrate some separation of feeding niches between Arctic and sub-Arctic marine mammals, with clear areas of potential niche overlap and shared food resources. Sub-Arctic seal species overlap the feeding niches of native Arctic species the most of all range-shifters, and of Arctic species, narwhal appear the most vulnerable to niche overlap by northward-shifting species.

Research Talks

Wednesday 24th May 2023 – Macdonald Campus

Hannah Silver (She/They)

Canadian Neoliberal Imaginaries During Covid-19: A Critique of Gender Based Analysis Plus (GBA+)

Political Science and Gender, Sexuality, and Feminist Studies

More than a decade ago, the Canadian federal government committed to using Gender Based Analysis Plus, a so-called feminist framework, to foreground intersectionality in their policy and alleviate systemic inequality. However, a year into the COVID-19 pandemic—a health emergency that has disproportionately affected marginalized communities—the Auditor General of Canada (OAG) announced that GBA+ had made no discernable impact.

Drawing from feminist political science, policy studies, and critical theory, my thesis argues that OAG's conclusion is not surprising. Rather, GBA+'s failure to achieve equality outcomes is the result of the relationship between neoliberal governance and versions of feminism that prioritize economic individualism and a politics of inclusion. My presentation will use selected quotes from the Department of Women and Gender Equality's (WAGE) Parliamentary addresses on the status of GBA+ during the pandemic. Despite WAGE's language of intersectional feminism, their conceptions of identity, feminism, and equality remain tied to the ideal neoliberal subject: a white, able-bodied, working mother. My thesis concludes by highlighting the importance of continuing to remain critical of GBA+ and pursuing an alternative vision that supports empathetic policy creation and transformative services.

Anna Ma (She/Her)

You Sound Depressed: A Case Study on Sonde Health's Diagnostic Use of Voice Analysis AI

Department of Integrated Studies in Education/Education & Society

There is growing interest within the medical sector about the diagnostic potential of voice analysis-based artificial intelligence (AI) for monitoring mental health, such as depression detection. However, insufficient attention has been paid to the societal consequences of such technologies rendering depression and similar disabilities into purely technical problems. We provide a critical case study of Sonde Health, a Boston-based startup that purports to offer "objective" depression detection and monitoring via its Mental Fitness app that extracts and analyzes the acoustic features of the user's voice. Using a critical disability studies lens, we conducted a textual analysis of the publicly available developer documentation for Sonde's application programming interface, examining each of these acoustic features ("vocal biomarkers"), and problematizing Sonde's claims that these vocal biomarkers are objective universal indicators of depression. Through our case study, we illustrate the shortcomings of technosolutionism when attending to the rising inaccessibility of mental health services, the fundamental mismatch between the cultural values which drive quantitative AI analysis vs. humanistic psychiatry, and the troubling implications of the emergence of ubiquitous speech-based surveillance.

Research Talks

Wednesday 24th May 2023 – Macdonald Campus

Nicolas Poulin (He/Him)

**A Systems Analysis of Developing Masculinity:
An Autoethnographic look at Sexual and Gender Identity**

Project supervisor: Dr. Enoch Leung

Supervisor: Dr. Jessica Ruglis

Department of Educational and Counselling Psychology



Gender and sexual identity are subject to socialization through various systems that put pressure on people to conform to traditional gender norms and reinforce heteronormative sexuality. Toxic or hegemonic masculinity places all expressions of manhood into a hierarchy that tries to enforce the gender norms and sexuality it views as superior onto men. Grounded in Bronfenbrenner's ecological systems theory, an autoethnographic analysis was conducted to examine systemic impact on my gender and sexual identity. My experiences at home with family, with my peers, at school with educators, and in society, were all found to have significant reactions that reinforced conformity to hegemonic masculinity internally and caused me to hide my minority sexuality. Upon further examination, time away from the systematic pressures to conform was replaced with systematic reinforcement of stereotypical non-masculine behavior, serving as a contrast to the socialization of hegemonic masculinity.

Keywords: toxic masculinity, autoethnographic analysis, hegemonic masculinity, queer, traditional masculinity

Zoey Davis (He/They)

Physiologically based pharmacokinetic modeling of poly-brominated diphenyl ethers in urban gulls

Ecology (Concordia University)



Polybrominated flame retardants are synthetic chemicals used for fire safety efforts. Though beneficial for their intended purposes, they have significant detrimental effects on organisms that consume them such as urban seagulls. A physiology based pharmacokinetic (PBPK) model was derived using Microsoft Excel to predict concentrations of polybrominated diphenyl ethers (PBDEs) in the tissues of a herring gull (*Larus argentatus*). Physiological parameters of the target species included organ weights and feeding habits. Physical chemical parameters of BDE-47 included molecular weight and the first order rate constant in biotransformation. The overall goal of this project is to reparameterize an existing PBPK model for use in avian models with varying exposure scenarios. Basic functionality of the model retained but future research would allow more specificity and accuracy in model predictions and extrapolation.

Research Talks

Wednesday 24th May 2023 – Macdonald Campus

Tim Mt Pleasant (He/His)

Situating Graduate Student Understanding of Systemic Supports in place that are meant to benefit their Research qua Education within Canadian Jurisdictions

Department of Philosophy / Biomedical Ethics Unit

Oppression is a dominant characteristic of experiences one has in relation to systems that one travels over the course of a lifetime. Minimizing the harm that oppression has on the self is important and is not always mitigated by the system itself, nor is it a priority for some systems to have controls that are reflective and permeable to the opinions of those that walk through it. The system meant to support the modern research enterprise is one of those systems and without knowing about the system, one is challenged in diffusing some of the bumps and bruises that can be experienced by traversing it. This talk will serve to provide a navigational view of the terrain, broadly, so that one can first ascertain if they want to enter that system and if one chooses to, where to look for lifelines if needed.

Sarah Mangle (She/Her)

Wait - What Are We Measuring? Conceptualizing Sexual and Gender Identity

Public Health (Université de Montréal)



Sexual and gender identity are often conceptualized as singular dichotomous categories. Emerging research findings provide evidence for simultaneous identities and dimensionality within them. In my thesis, I measured response patterns to multiple sexual and gender identity items with categorical and dimensional response options. A questionnaire was developed based on a prior systematic review of measures. Participants included Canadian adults ($N = 773$) who consented and completed the questionnaire online. The categorical sexual identity term “straight” showed the most single-term endorsement, while “queer” was most combined with other terms. Gender identity terms most endorsed together overlapped in meaning. “Queer” was the most highly endorsed dimensional item. The most dimensional variation was seen across “fluid”, “asexual”, “bisexual” and “pansexual”. Because variation in dimensionality for gender and sexual identities was observed, I can suggest that dimensionality is a relevant area for future research. I can suggest multi-term usage is relevant for sexual identity.

3MT Talks

Wednesday 24th May 2023 – Macdonald Campus

Alice Gendron (She/They)

Department of Psychology (Concordia University)

In the literature on gender typicality, low gender typicality has often been construed as 'gender atypicality'. Considering the negative correlations which have been established between gender typicality and indexes of psychosocial adjustment in early adolescence, we felt important to validate whether typicality and atypicality were indeed opposite ends of a same spectrum, or rather separate dimensions of gender identity. Our factor analysis revealed that the two were only weakly negatively correlated ($r = -.195^{**}$), thereby providing support for their differentiation in research. The contextual effects of SES and place were also assessed to measure whether these means would vary cross-contextually.

Cindy Gao (They/Them)

Body size-sexual conflict trait relationships and disc trait interactions in male *Graphoderus liberus* diving beetles

Department of Biology



Sexual conflict has been proposed to drive antagonistic coevolution between males and females enforcing phenotypic diversification, population divergence, and speciation. In predacious diving beetles, males typically possess suction cups on their forelegs that are used to grasp females during mating attempts, whereas females have counter adaptive elytra morphology that obstructs adhesion. However, the extent to which sexual conflict may interact with natural selection to produce phenotypic selection is largely unknown. Here, we demonstrate that variation in fitness traits are decoupled from sexual conflict traits at the intraspecific level. In the monomorphic species *Graphoderus liberus*, male suction cup morphology variation was decoupled from body size variation along a sexual conflict gradient. These findings suggest that the strength of sexual selection pressures operates independently from potential advantages that fitness may provide.

3MT Talks

Wednesday 24th May 2023 – Macdonald Campus

Jessica Chadwick (She/Her)

Urban soil remediation – a meeting point for art, science and public engagement

Department of Natural Resource Sciences

Soil pollution is a huge problem for the organisms that inhabit the soil, the people that use the land and wider nutrient cycling and soil health. Heavy metals, like lead, arsenic and mercury, can have severe negative consequences on plant growth and development, and can be dangerous to human health. The soil contaminants found next to the Grand Union canal in Birmingham (UK) were many times greater than the recommended safety limits, with some found to be over 100 times greater than the safe concentration. We used a range of different plant species to attempt phytoremediation of the area to try and reduce the mobility of these heavy metal contaminants, either by trapping them in the soil or by taking the toxins into the plants themselves and storing them there. Mixed results were found based on soil heavy metal analysis over three time points across 2022.

Kate Marr-Laing (They/Them)

Non-profit advocacy and meaning-making for social change

Department of Political Science

This thesis critically explores the role of non-profit organizations in advancing sexual and reproductive health and rights in Canada through education policy advocacy. Between 2018 and 2019, there were heated debates in Ontario regarding changes to the provincial Physical and Health Education Curriculum, also known as a sexual health education curriculum. Using the concept of discursive opportunity structure, this qualitative case study examines the framing strategies used by non-profit organizations to advocate for curriculum reforms. It situates advocates' discursive opportunities within the broader ideational context of the sexual and reproductive health and rights movement, and asks how environmental constraints within the non-profit sector shape frame selection to align with or diverge from the movements' various aims and objectives. Interviews with non-profit and government representatives are used to support discussion of how the non-profit environment influences the ways in which organizations can and do advocate for policy change.

3MT Talks

Wednesday 24th May 2023 – Macdonald Campus

Maria Stergiou

Department of Integrated Studies in Education

Family structures in Canada have changed over the last decades but have teachers and curricula caught up? Many teachers, for example, may still engage in (often unknowingly) heteronormative ways and practices that make assumptions about children and their backgrounds (Fix, 2019). Because of the limited research on teachers' awareness and responses to children in diverse family structures (Smith, T. E., & Sheridan, S. M. (2019), and as the student population and family structures become more diverse, there is an urgency for this topic to be examined. Using a visual methodology and an arts-based approach that is meant to involve and engage research participants in the process (Mitchell et.al, 2017) will enable meaning to travel in ways words cannot (Butler-Kisber, 2018), teachers will respond to the reading by drawing and/or creating a collage as a reaction to them. I will like to present my unique doctorate research in 3-minute thesis at the Queer Voices Symposium!

Marie Dry (She/Her)

Father, Mother, or Parent?

Department of Law



This Ph.D. project examines recent developments in family law in France and Quebec for the inclusion of TINB+ (trans, intersex, non-binary, and other gender-expansive individuals). In the context of a growing inclusion of LGBTQI+ families the gender binary remains unquestioned. As a result, how can the law adequately recognize and protect access to procreation and filiation for trans individuals? The methodology of this project is both doctrinal and socio-legal to collect qualitative data on the experiences of trans people who are, or are becoming, parents in Quebec and in France. Analyzing this unique data, the thesis will seek to address the exclusion of trans parents from reproductive justice by proposing a redefinition of kinship to ensure equal access to procreation and filiation for all.