

Excellence *in* Graduate Research Symposium

*Presented by the UVic Graduate Students' Society
in partnership with the Faculty of Graduate Studies,
and the UVic Libraries.*

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Thank you to all our partners, participants, & supporters
who made this event possible.

Abstracts are grouped alphabetically, by presentation type.

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*A detailed timetable of presentators, topics, and timeslots will be
available separately.*

*The GSS respectfully acknowledges and thanks the many generations of stewards
of the unceded land on which we are situated that gives us life, and the air we
breathe, from the Ləkʷəŋən (Songhees and Esquimalt) Peoples on whose territory
the university stands, and the Ləkʷəŋən and W̱SÁNEĆ peoples whose historical
relationships with the land continue to this day. We commit ourselves to truth,
reconciliation, and decolonization.*

Posters

Aaron Bailey Nancy Henderson, Karen Urbanoski & Bernie Pauly

Public Health & Social Policy

Tracing a “Zombie Drug Policy”: Introducing the Genealogy of Involuntary Treatment for People Who Use Drugs in British Columbia

More than 15,000 people have been killed by the unregulated drug supply in British Columbia (BC). Since 2022, BCs governing New Democratic Party (BCNDP) has pursued involuntary treatment for people living with Substance Use Disorders (SUDs). Although scarce public health evidence supports the province’s decision to expand carceral responses to drug poisoning deaths, BCs first ‘secure care’ beds opened at a pretrial centre in spring 2025. In this context, people who use drugs have rejected involuntary treatment as a violation of human rights that is likely to facilitate drug-related harm. The conditions under which secure care has emerged in BC are complex, deeply historical, and rooted in settler colonial violence. In this presentation, I draw from Alex Steven’s analytical framework of Drug Policy Constellations, colonial public health scholarship, and original archival sources from the City of Vancouver Archives to introduce involuntary treatment as a “zombie drug policy” in BC. Drawing on historical materialist methods for policy analysis that will inform my doctoral dissertation, I highlight an understudied genealogy of previous attempts by local and provincial governments to introduce forms of involuntary treatment for people who use drugs in BC throughout the 1960s, 1970s, and 1980s, and 2020s. Through this scoping introduction to my doctoral research, which will take place in partnership with organizations of people who use drugs in BC, I hope to challenge attendees to bridge disciplinary boundaries between public health, community-based research, and the history of medicine to facilitate evidence-based policy responses to mass death.

Diana Bertuol Garcia

Environmental Studies

The roles of dominant plant traits, diversity, and climate in grassland resistance to extreme drought events

Understanding what drives ecosystem stability is crucial for predicting ecosystem responses to extreme drought events. In grasslands, drought resistance supports the maintenance of key functions, making the identification of resistance drivers essential to guide management under climate change. Proposed factors contributing to grassland stability include multiple facets of diversity, functional traits, and climate, but most assessments focus on temporal invariability under historical disturbance regimes, leaving mechanisms of extreme drought resistance relatively underexplored. We analyzed data from 54 grassland sites of the International Drought Experiment to examine the resistance of aboveground plant productivity to a short-term extreme drought. We investigated the relative importance and joint influence of pre-drought plant community characteristics, specifically, dominant plant traits, multiple facets of plant diversity, and climate on resistance to drought. We used structural equation models to disentangle direct, indirect, and moderating pathways linking these drivers to resistance. We found that dominant traits related to dehydration avoidance and tolerance were positively associated with resistance. Plant diversity had a weaker relationship with resistance, with taxonomic richness affecting resistance only indirectly through functional and phylogenetic divergence. Long-term aridity and drought severity were negatively associated with drought resistance, with more arid sites and sites experiencing more severe droughts showing lower resistance. Aridity also showed indirect effects by shaping dominant traits and diversity, and moderating effects by changing the influence of plant diversity and dominant traits, but direct effects were stronger. This synthesis highlights that widely studied stability drivers such as dominant traits and diversity have only partial explanatory power for short-term drought resistance of aboveground productivity in grasslands at a global scale. The abiotic context, particularly long-term aridity, is crucial for understanding ecosystem responses to rainfall variation. Along with management practices for high species diversity or specific traits, restoration and conservation practices should support vulnerable sites experiencing high aridity.

Lauren Burton

Environmental Studies

The Role of Commercial Fisheries in Facilitating Cultural Continuity of First Nations

Since time immemorial, Indigenous people on the coast of present-day British Columbia stewarded their lands and waters through traditional harvesting practices and monitoring of permanent and seasonal village sites. The arrival of colonists and rapid expansion of extractive industries (i.e. commercial fishing) changed the way First Nations accessed their territories and resources. Access is not solely a question of Indigenous rights. There are multiple dimensions of fisheries access beyond licensing and quotas, such as community cohesion and transmission of knowledge. Employment in commercial fishing during the twentieth century enabled Indigenous communities to continue some aspects of traditional harvesting through the industrial period. However, the collapse of the industry has severely limited capacity to access their territories in recent decades. Using a case study of Gitga'at First Nation, this poster presentation illustrates how the Hartley Bay community adapted to industrial boom and bust cycles on the North Coast of British Columbia and how access to Gitga'at Territory has changed over the past approximately 150 years. Drawing on historical sources and oral history, I explore the role of salmon canneries, trade routes, fishing lodges, recreational fishing, research partnerships, ecological monitoring, and patrols by the Gitga'at Guardians in maintaining access to significant cultural sites in Gitga'at Territory.

Matilde Cervantes Navarrete

Individual Interdisciplinary Program

Toward Pluriversal Futures: Indigenous Methodologies and Biocultural Diversity in Planetary Health Research

This research explores how Indigenous methodologies and decolonial approaches can contribute to reimagining planetary health through the lens of biocultural diversity and the concept of pluriverse. Planetary health has often been framed within Western scientific paradigms that separate nature, people, and culture. In contrast, Indigenous worldviews emphasize connection, relationality, reciprocity, and responsibility within interconnected living systems. Drawing on a transformative paradigm and Indigenous and arts-based methodologies, this study examines how creative, land-based, and community-engaged practices can expand understandings of health and wellbeing beyond human-centered perspectives. The concept of the pluriverse—many worlds coexisting—serves as a guiding framework to recognize multiple ways of knowing and being that sustain life in diverse contexts. By centering Indigenous voices and epistemologies, this work contributes to decolonizing research processes and advancing more equitable and culturally grounded responses to global health and ecological crises. Ultimately, it argues that strengthening biocultural diversity and Indigenous knowledge systems is essential for fostering planetary wellbeing, justice, and resilience in the face of ongoing environmental challenges.

Lily Charette

Geography

Bracing for Rain: A cross-municipal analysis of stormwater policy in the capital region

Managing stormwater is key to reducing runoff impacts in our increasingly urbanized and impermeable landscapes. As stormwater runs off of hard surfaces like roofs, driveways, and roads, it also carries pollutants to those environments impacting local wildlife and public health (Congressional Research Service, 2016). While today, public and environmental health are important considerations for urban stormwater infrastructure, this has not always been the case. A vast majority of the urban stormwater infrastructure is based on the sewer systems developed in 19th Century Europe (Bertrand-Krajewski, 2021). These systems which are built into many cities' underlying structures focus only on sanitation. After almost a century, the drawbacks of these systems have been recognised widely.

Across North America, stormwater management still relies heavily on traditional infrastructure, also referred to as grey infrastructure, which utilises pipes, tanks, and other artificial means to transport stormwater. While this approach focuses on the process of removing stormwater, it does not consider water quality or natural flow processes. Green Stormwater Management (GSM) has emerged in recent decades as a commonly acknowledged approach to stormwater management that can help regions build strategies for management that also consider environmental sustainability, climate change, and adaptation (Heidari et al., 2022). While research has demonstrated the benefits of these approaches, and led to their widespread acceptance, implementation is still slow (Heidari et al., 2022). In order to gain a better understanding of current stormwater management approaches in the Capital Regional District (CRD), this study provides an analysis of the current stormwater policies across various municipalities, and provides insights into some of the challenges in implementation and management, as well as opportunities for improvement.

Tegan Clarke

School of Languages, Linguistics & Cultures

No One-Size-Fits-All: Russian Language Instructors' Perceptions of Mixed Classes in Canada

In Russian language classrooms in Canadian universities, it is becoming increasingly common to find both heritage and non-heritage learners enrolled in the same courses, rather than in separate ones. Mixed classes, due to their composition, appear to provide opportunities for mutually beneficial linguistic and cultural exchanges, but by the same token, they may also pose specific challenges for both instructors and learners. While some scholars and stakeholders acknowledge the potential advantages of such settings, they argue that separate courses would more effectively address the reportedly different needs of heritage and non-heritage learners. In reality, however, this is often not feasible nor actionable due to constraints related to enrollment, funding, resources, etc. Despite the rising frequency of mixed classes and the growth of the Russian-speaking community across the country, research on this instructional context has received little attention. This study, therefore, aims to explore instructors' perceptions of teaching in these mixed settings and to examine how they've come to navigate (and appreciate) the intricacies of meeting the needs of both learner groups.

Instructors' perceptions were gathered via an online survey, followed by individual, semi-structured interviews, in which instructors expanded on their survey responses and provided specific classroom examples. Inductive qualitative analysis of the data revealed several key themes, including current instructional approaches and classroom practices, the need to adapt and differentiate course materials and assessments to accommodate varying levels of proficiency, strategic learner groupings for certain tasks, in addition to various unresolved challenges associated with teaching a mixed class. Potential avenues to mitigate and/or address these challenges are proposed.

Tara Cooper

Psychology

Health Outcomes and Risk for Mortality in Older Adults with Lifelong ADHD Symptoms

Attention deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder that persists into older adulthood with important implications for healthy ageing. Previous research documents significant disparities for children and adolescents with ADHD compared to their neurotypical peers on various social determinants of health. Critically, previous research reports a significantly higher risk for mortality in adults with ADHD followed since childhood. The literature on health outcomes of older adults with ADHD is sparse. Therefore, the purpose of this research was to examine social determinants of health and risk for mortality associated with ADHD symptoms in a sample of older adults. Participants from the Longitudinal Aging Study Amsterdam (n= 986) were screened for childhood and current ADHD symptoms in 2008/2009 and followed until death or most recent assessment (August, 2021). Based on symptoms reported currently and evidence of childhood onset, participants were assigned to either an ADHD symptom (ADHD-sx) group (n= 147) or a non-ADHD group (n= 839). Survival analysis revealed no significant risk for mortality associated with ADHD-sx (HR: .90, 95% CI [.63, 1.29], p= .58). Furthermore, although older adults with ADHD-sx reported more chronic health conditions (p < .001), group differences were not observed in terms of income (p= .49), education (p= .95), social participation (p= .63) or occupational attainment (p= .94). These results suggest that selection and survival bias are important considerations when studying older adults with neurodevelopmental disorders. Future directions for research on ADHD in healthy ageing are presented.

Marissa Donaldson

Educational Psychology & Leadership Studies

The Kids are Not Alright: Exploring Depression Stigma in Post-Secondary Education

The stigmatization of mental health conditions is societally prominent and transcends generations, despite young people often having higher levels of mental health literacy. Depression stigma, a type of mental health stigma, carries a variety of stereotypes about depressed people. These stigmatizing views include the belief that depressed people are weak-willed, attention-seeking, or even faking their diagnosis. While there has been some research done on depression stigma in educational environments, little has been done in terms of researching the association between depression, academic performance, and academic completion. This exploratory will examine the relationship between depression stigma, mental health literacy, as well as perceptions about the stigma of others on academic performance among a university-aged sample. Direct and indirect relationships will be examined. This work is significant in that it will support a better understanding of how depression stigma and associated constructs may undermine the academic success of undergraduate students. This work may support future intervention research aiming to decrease the impact of mental health stigma among university students.

Donovan Faraoni

Public Administration

Place, policy & culture in a blue-green urban wetland: Gorge Waterway Pilot Field Study Sampling

This master's thesis research examines the ecological and cultural significance of native eelgrass beds in the Gorge Waterway in Greater Victoria. In August 2025, the researcher collected field samples in collaboration with University of Victoria biology students and alumni interning with the non-profit Gorge Waterway Action Society. These samples provide data used to estimate ecosystem services that benefit our local communities. Strict ethical, safety, and scientific permit procedures were followed to minimise environmental impacts.

Two wetland ecosystem services are being studied because they can be reliably measured with accessible equipment and methods, and they are pertinent to climate policy solutions.

- Carbon pools (Mg/ha) indicate how much organic and inorganic carbon is stored in benthic sediment and eelgrass blades and roots. Dried sediment and plant material from hand-drilled seabed cores were analysed by the researcher at university laboratories in BC, Quebec and Ontario.
- Macroinvertebrate biodiversity—including fauna such as free-swimming shrimp and burrowing sea worms—is a critical ecosystem indicator. Juvenile salmon and herring in the Gorge Waterway feed on these organisms, recycling nutrients and minerals. They are relatively slow-moving and long-lived, allowing observation of how they are affected by urban land use and climate change over time. For the field study, macroinvertebrates in the gorge were collected using dip-nets and sieves to measure species richness and abundance.

The Gorge Pilot Field Sampling marks the initial phase of an interdisciplinary thesis that aims to support regional UNESCO biosphere designation efforts and promote the sustainable management of the ecologically vital and culturally important Gorge Waterway estuary—a jewel of urban wetlands. Feedback from the field sampling team will be integrated into further research on citizen science policy initiatives across Canada and the UK, aiming to strengthen urban wetland sustainability.

Caleb Gordon

School of Languages, Linguistics & Cultures

Investigating Verbal Plurality in (Tsova-)Tush

(Tsova-)Tush is an endangered and understudied Nakh-Daghestanian language spoken in Georgia by approximately three hundred adults, almost all of whom live in one small village. In my research, I describe and analyze one interesting feature of (Tsova-)Tush: pluractionality, also known as verbal plurality. This is a property that describes the number of times an action is performed. For example, a verb with pluractional marking may be performed repeatedly on one occasion, or frequently over time. Alternatively, a pluractional verb may be distributed across multiple individuals.

Though pluractionality has been documented in (Tsova-)Tush, the full range of possible meanings of these pluractional verbs is not yet known. Moreover, it is also unknown exactly how pluractionality interacts with the lexical aspect (the relationship to the passage of time) of a given verb. I will present what has been uncovered so far, as well as my own fieldwork. It is currently a particularly crucial time to gather more data, as the language has only approximately three hundred speakers, all aged above fifty. Furthermore work on endangered languages has particular relevance for the Canadian context. This work will both draw on and contribute to the literature on endangered language research.

Cierra Hart

Earth & Ocean Sciences

Assessing the distribution of bearded seals in the western Canadian Arctic with passive acoustic monitoring data

Bearded seals (*Erignathus barbatus*) in the Canadian Arctic face growing pressure from climate change, which is rapidly reducing the sea ice they depend on for habitat. It is important to study and build a baseline understanding of this species, but this is challenging due to the Arctic's extremely cold temperatures and low light levels. Passive acoustic monitoring is a powerful tool for monitoring marine mammals in the remote Arctic environment, as underwater acoustic recorders can be deployed for long periods and marine mammals such as bearded seals reliably produce vocalizations that can be detected. However, once the recorders are recovered, there can be terabytes of data that must be processed to identify vocalizations at the species level. To aid in the efficient processing of large quantities of acoustic data, our team has been developing and testing a deep learning detector for bearded seal vocalizations. For this poster, I will present preliminary results on detector performance and initial presence/absence results using six years of recordings (2018–2024) from Cape Bathurst in the western Canadian Arctic. The results demonstrate the potential of deep learning approaches for scaling up Arctic marine mammal monitoring. Future work involves applying the detector to multiple other sites in the region to assess the distribution of bearded seals.

Aidan Hassell

Greek & Roman Studies

Decolonizing the Past: Transculturation not Romanization

Romanization, a framework for cultural encounters in antiquity first coined by Haverfield in 1905, has been the subject of heated debate, especially with the publication of Greg Woolf's *Becoming Roman* and subsequent responses. Many have contested the implicit imperial perspective of the acculturation model (including Webster, Dench), opting for a "messier" mixed model of cultural contact: what I term "transculturation," borrowing from Ortiz and Rama in Latin American cultural theory.

Woolf warns that postcolonial stances after Edward Said's *Orientalism* can result in "analytical blurring of the boundaries between ethnographic, administrative and propagandistic orderings of space" (*Tales* p. 85) because each distinct sphere readily appropriates aspects of others, but not in a systematic or totalizing manner. However, I would echo Webster's position in "Necessary Comparisons" that not only is it possible to adopt a postcolonial methodology to further our understanding of the ancient world, but it is crucially necessary in the present divisive climate. Beyond the question of disciplinary responsibility, Said's approach contributes to our appreciation of the interconnectedness of the cultural imaginary and the military-administrative facts on the ground: knowledge, then as now, is not neutral, but active and interested.

Drawing on the metadiscursive methodology of Michel-Rolph Trouillot, Said's examination of the political interests of orientalism, and the discourse on transculturation, I argue that the production of ancient ethnographies indeed constituted an elite, interested perspective. Power is never far from the production of authenticated knowledge. But neither was there a totalizing conquest: culture is not static, and both parties are irrevocably altered in any intercultural exchange. I will contribute to decolonizing our modern discipline of classical historiography, interrogate the silencing of marginal voices by the producers of sanctioned histories, and problematize the imagined geographies of East and West.

Heather Hollman

Health

Postpartum physical activity action control – Is it impacted by the presence of pregnancy-related lumbopelvic pain?

Background: The postpartum physical activity (PA) intention-behaviour gap and predictors of its translation are largely unknown. This study sought to determine 1) the postpartum PA intention-behaviour gap, 2) predictors of intention-PA translation using multi-process action control (M-PAC) constructs and postpartum PA-relevant barriers, and 3) whether the findings are moderated by the presence of lumbopelvic pain (LPP).

Methods: A sample of $n = 224$ individuals <12-months postpartum (mean age = 33.18; SD = 3.91; 58.9% with LPP; 81.7% Canadian) completed 1) M-PAC measures of reflective (instrumental and affective attitude; perceived capability and opportunity), regulatory (proactive and reactive regulation, self- and social monitoring), and reflexive (habit, identity) processes, 2) postpartum-relevant constructs of fear of movement and perceived change in walking/running gait, 3) intention to engage in PA, and 4) PA participation (meeting 150 minutes/week of moderate-to-vigorous PA [MVPA]).

Results: The intention-behaviour gap was 25.5% and it was predicted by identity ($d = .88$), habit ($d = .84$), affective attitude ($d = .74$), fear of movement ($d = -.66$), perceived opportunity ($d = .58$), and reactive regulation ($d = .46$). There were no significant differences in the intention-behaviour gap between postpartum individuals with and without LPP, yet LPP attenuated the effect of perceived opportunity on intention-PA translation.

Conclusion: Postpartum intention-PA translation is primarily predicted by M-PAC post-intentional constructs and fear of movement. Historically, postpartum PA interventions have not targeted these constructs and, therefore, future postpartum PA interventions should incorporate a blended approach that targets these M-PAC post-intentional constructs and fear of movement.

Atharva Joshi

Mechanical Engineering

Investigating the effect of scaffold architecture on hMSC viability

The purpose of this investigation is to examine the effect of scaffold architecture (infill patterns) of cell- laden, fibrin-based bioinks on the viability of human mesenchymal stem cells (hMSCs). Two infill patterns were determined: gyroid and rectilinear. These constructs were printed out for acellular and cellular testing. The acellular testing assessed the rheological profiles of the construct samples. The shape of this construct was a small cylinder with a 25 mm diameter and a 5 mm thickness. Similarly, the cellular samples were squares with the dimensions 10 mm x 10 mm x 3 mm. The rheological profiles consisted of amplitude and frequency sweeps wherein storage (G') and loss (G'') moduli were determined. The cellular prints were separated into three 12-well plates: two for LIVE/DEAD and one for immunostaining with DAPI (nuclei)/ phalloidin (cytoskeleton), to assess cell viability and investigate the effects on nuclei and cytoskeletal structures. A third pattern of honeycomb was excluded due to sample degradation. The results from this investigation indicate that a combination of rheological profiles, cell viability, and immunostaining can be used to study the long-term sustenance of stem cells.

Bryn Lonsbrough

Physics & Astronomy

The Outer Regions of the Galaxy Cluster XLSSC 122

I investigate the redshift 1.98 galaxy cluster XLSSC122 using the Hubble Space Telescope (HST) from the core of the cluster out to 3 Mpc, a scale equivalent to 10 times the $R_{500} = 295$ kpc radius. I present an expanded photometric and spectroscopic catalogue of the cluster, bringing the total number of spectroscopically classified member galaxies to 74, with 35 new member galaxies added in the outer regions of the cluster. I compute the radial galaxy number density profiles in the cluster, and observe no clear evidence of infalling groups or cosmic filaments. I observe a clear bimodal colour relation in member galaxies, with an increasing number of red galaxies approaching the cluster centre. This red fraction enhancement, as well as the coincident appearance of post-starburst galaxies, indicates a rapid cessation of star formation as galaxies enter the cluster. Our finding of post-starburst features and cluster and galaxy properties is not inconsistent with ram pressure stripping at or near the virial radius of the cluster.

Jonah Ma

Biochemistry & Microbiology

No more Mr. Fungi: Yeast RNA Processing Enzymes as Novel Anti-Fungal Drug Targets

Fungal pathogens are a growing concern, exacerbated by the critical shortage of anti-fungal drugs. In light of this shortage, baker's yeast (*Saccharomyces cerevisiae*) has emerged as a promising model for identifying novel protein targets for anti-fungal drugs. Our lab has recently identified an RNA processing enzyme present in all yeasts as one such target. In *S. cerevisiae*, and in all yeasts, the Trf4/Trf5 poly(A)-polymerases (PAPs) target specific pools of RNA for degradation. To elucidate the importance of PAP activity I tested the ability of catalytically inactive alleles of Trf4/Trf5 (trf4/trf5-DADA) to rescue the synthetic lethality of trf4 Δ trf5 Δ double mutants. This revealed that neither trf4-DADA or trf5-DADA alleles were not sufficient for growth in trf4 Δ trf5 Δ double mutants. Thus, clarifying ambiguous reports in the literature, I found that the PAP activity of the RNA exosome is essential for yeast viability. To determine the mechanism behind this, I will conduct RNA-seq, revealing pools of RNA transcripts that remain dysregulated in the presence of either catalytic mutant, potentially contributing to lethality in trf4 Δ trf5 Δ double mutants. Since Trf4/5 poly(A) polymerases are conserved in several pathogenic fungi, these enzymes may represent novel anti-fungal drug targets.

Victor Negrea Puskas

Biochemistry & Microbiology

Tumour-infiltrating B cells and circulating antibodies: dual strategies for targeting ovarian cancer and its blood supply

Background. High-grade serous ovarian cancer (HGSC) is the most lethal form of ovarian cancer, and overall survival has not changed significantly in several decades. Despite poor clinical outcomes, the presence of tumour-infiltrating B cells (TIL-Bs) has been strongly linked to improved patient survival. Typically, B cells produce antibodies that target and eliminate unwanted viral or bacterial infections, but their role in anti-tumour immunity remains unknown. In this study, we hypothesized that a key mechanism used by TIL-Bs may be the release of antibodies that bind to nearby tumour cells, marking them for destruction by other immune cells.

Methods. We analyzed tumour tissue samples from 96 patients with HGSC using multiplex immunofluorescence staining to quantify patient-derived antibody deposits on tumour epithelium and blood vessel cells, along with TIL-Bs and T cells in the cancer microenvironment.

Results. We observed antibody deposits in all patients, though the amount varied across tissue samples. Unexpectedly, there was no association between the presence of bound antibody on tumour epithelial cells and TIL-Bs. Many cases exhibited deposits in the absence of TIL-Bs, or TIL-Bs in the absence of large deposits. Notably, antibodies were frequently found on blood vessels and were significantly associated with deposits on tumour cells. This suggests that peripheral blood may represent a major source of antibodies against the tumour and its vessels.

Conclusion. Antibody deposits are prevalent in HGSC and a large proportion may come from peripheral blood rather than TIL-Bs. To further address this possibility, we are assessing whether deposits are uniform across samples obtained from different anatomical sites within individual HGSC patients, as would be expected for bloodborne antibody responses. Understanding TIL-B- and peripheral blood-derived antibody responses could uncover new strategies to enhance the immune response against tumour and its associated vasculature.

Anjelo Quito

Psychology

Can eye trust you? Investigating the impact of trustworthiness on attention

Researchers have found that faces capture attention, thereby worsening people's performance on lab tasks. This suggests that social attention draws people to others' faces and to where they are looking. However, it is unclear whether the trustworthiness of a face impacts this process. While there is evidence that following others' gaze influences how we evaluate their trustworthiness, it is inconsistent with studies investigating how trustworthiness moderates this gaze following.

The present study investigated the effect of trustworthiness on attention using a trust game manipulation followed by a series of attention tasks. Participants ($n = 61$) invested money with three characters (trustworthy, untrustworthy, and ambivalent) represented by three different faces. We then employed two attention tasks: one in which participants searched for a target among distractor items on-screen (visual search), and another where they responded to targets corresponding with a face's gaze direction or not (cueing task).

Our findings revealed that participants invested more money in the trustworthy face and less in the untrustworthy face after each subsequent exchange, indicating learning. However, this did not alter reaction times on the subsequent attention tasks, suggesting that trustworthiness evaluations do not interfere with social attention processes. Our results help inform the ongoing debate surrounding the influence of trust on attention and imply that we pay attention to people equally, regardless of how much we trust them or not.

Melody Ray

Art History & Visual Studies

Dishing Out Identity: Nationality and Performance with Louis XV's Bleu Céleste Dinner Service

Ceramics contribute to global eating practices. From terracotta to clay to porcelain, humans have crafting dish shapes to best suit their cultural foods for centuries. Ceramics that serve a country's food are just as distinguishable as said food. The development of French cuisine correlates with the development of a French porcelain design. The cultural performance of nationality and national food can be traced through the changes in dish shape and culinary preference. Porcelain communicated an elevated level of cost, class, and sophistication to the dining experience as well as intrinsic links to the royal patrons. The fanciest and richest exhibitions of French porcelain were displayed through the place settings and the food served during diplomatic visits. Under Louis XV, porcelain was used as a diplomatic gift to indicate France's friendly relationships with European nations. As porcelain was part of the political discourse, what role did it play in the discussion? As I answer this question, I study the first full porcelain dinner service that set the standard for future dinner services, Louis XV's Bleu Céleste Dinner Service. As the dinner service that set the standard, did the Bleu Céleste Dinner Service demonstrate specific French qualities and French national performance? During these highly performative and elite dinners, who is defining what it means to be French? I argue that the development of national identity is clearly shown through the multiple ways that the Bleu Céleste Service was performed by the elite French in the dining context. The service reveals how Louis XV thought of France and who had the power to change the definition of nation. I will demonstrate this argument through a discussion of the design, use, and history of the Bleu Céleste Dinner Service. In doing so, I highlight how the service was used in a performative dining experience.

Christian Romanowski

Biochemistry & Microbiology

BEA-Ting the Odds: Creating a mouse model of ovarian cancer to develop B-cell Enhancing and Attracting T cells, a novel cancer therapy for difficult-to-treat tumours

In the last decade, immunotherapy has revolutionized cancer therapeutics by allowing for rational and effective cancer treatment using the patient's own immune system. Particularly, CAR-T cell therapy has emerged as an especially effective and customizable immunotherapy for blood cancers. It involves isolating a subset of immune cells (called "T cells") from a patient's blood, genetically modifying them to kill tumour cells, multiplying them, and re-infusing them back into the patient to attack systemic malignancies. However, CAR-T and other immunotherapies are currently ineffective against cancers involving solid tumours, such as ovarian cancer.

Our lab has discovered a foothold with which we may begin to target these difficult malignancies. The presence of another immune cell type ("B cells") within patient tumours is strongly associated with long-term survival for ovarian cancer patients. The exact mechanism by which these B cells improve patient survival remains unknown, but most studies to date employ a top-down approach, investigating B-cell infiltrated tumours from patient samples. There are few bottom-up approaches, where a B-cell response is provoked in a mouse model so the factors inducing and controlling these responses can be assessed.

The current goal of my project is to develop a mouse model of ovarian cancer in which we can observe and provoke tumour-infiltrating B-cell responses. Having a system in which we can observe and modulate the B-cell tumour response will allow us to study the factors that naturally lead to these beneficial and important tumour responses, and will also allow us to engineer a new CAR-T cell therapy that can provoke a B-cell response (BEA-Ts, B-cell Enhancing and Attracting T cells). Such a therapy could leverage the positive effect of tumour-infiltrating B-cells and lead to the clinical development of a new solid tumour immunotherapy, while also elucidating how B-cells increase long-term survival in these difficult malignancies.

Trevor Ruck

English

‘Unspeakable rites’ of passage: Cross-mapping myth, mysticism, and ethnobotanical mysteries in Conrad’s Heart of Darkness

Joseph Conrad’s famous novella *Heart of Darkness* (1899), loosely based on his voyage up the Congo River in 1890, is renowned for its dense symbolism, psychological depth, and innovative narrative structure. Its exploration of imperialism, moral ambiguity, and human consciousness have generated a century of critical debate around its essential meanings, with many scholars suggesting a psychological reading of Conrad’s divided self where his protagonist, Marlow, recounts his journey toward encountering his shadow self, Kurtz.

While recent scholarship has commented extensively on Conrad’s complex health history and how altered states of consciousness permeate his fiction, his experience with psychotropic substances and their influence on his writing have not been thoroughly investigated. Considering the pharmacological landscape and prevailing social stigmas in Conrad’s time, they likely informed his creative process more than previously recognized. A closer exploration of overt and covert drug references may reveal a psychoactive subtext and offer deeper insights into his work.

With attention to Conrad’s biographical data and literary milieu, this investigation examines *Heart of Darkness* as a cryptic cover story of the author’s transformative journey up the Congo and aims to decipher it using literary cross-mapping of mythological, mystical and pharmacological parallels, with particular attention to arcane mystery traditions, ethnobotanical initiation rites, and other psychoactive substances in historical context.

Based on this interdisciplinary analysis, it is hypothesized that Conrad had a complex relationship with opiates and that his inward trip up the Congo reflected in *Heart of Darkness* was inspired by a local entheogenic root, *Tabernanthe iboga*, encoded in “unspeakable rites”, which is key to understanding the deeply symbolic nature of the text. This novel approach reframes *Heart of Darkness* as a complex syncretic mystery, encouraging further research and discussion across cultures and academic disciplines.

Fabiola Sanchez Balderas

Anthropology

Ethnography of the Hearth: My Journey from the Fieldwork to the Graphic Novel

In this poster I examine my thesis research “Where the Hearth Burns, Recipes of the Soul. Time and Place Through Foodways Among Lacandon Maya from Mensabak” based on compiled stories from my fieldwork. I explore the kitchen as a place of continuous conversations about foodways, and as a space of multisensorial communication of everyday material matters and encounters. I present results in a scholarly informed ethno/Graphic form, exploring the ethnographic work and the relationship between the participants in a collaborative approach to graphic creation. This poster enriches the storytelling of ethno-Graphic theory in recognizing the role of the researcher in capturing in images the deep memories of research participants. My research poster will contribute to the discussion on the use of visual methods within storytelling, encouraging the use of comics for the dissemination of the research findings.

Ashley Simpson

Social Dimensions of Health

Story Medicines & Matriarchal Wisdom: Developing an Indigenist Methodology for Reproductive Health Research

Indigenist research paradigms are rooted in lived experience, intergenerational teachings, and connections to land, family, and community. As a Wet'suwet'en/English/Scottish woman, mother, birthworker, and health researcher raised on Coast Salish territories, my cultural identity and teachings are inseparable from my research. This positionality grounds my work in relational accountability, reciprocity, and collective responsibility, ensuring that knowledge is generated by and for the Indigenous communities I am connected to and work alongside.

My proposed doctoral research asks: How can intergenerational Indigenous knowledges of sexual and reproductive health (SRH) inform the development of culturally safe and accessible SRH policies and practices in British Columbia? Responding to community calls for action, this work will be carried out alongside Indigenous matriarchs—grandmothers, aunties, midwives, doulas, and other birthworkers—whose voices have historically been excluded from policy and practice spaces.

To ensure the work is carried out in ethical and accountable ways, I aim to develop a methodological approach grounded in my own worldview, Indigeneity, and cultural context. Drawing on the teachings of the medicine bundle—collections of sacred items gifted or gathered to guide and protect us—this framework will offer cultural and ceremonial guidance for gathering, interpreting, sharing, and caring for story medicines. These story medicines, carried through the teachings and knowledges of matriarchs, are offered as good medicine to support reproductive wellness and uphold the inherent rights of Indigenous Peoples to safe, respectful, and culturally rooted health care.

Grounded in medicine bundle teachings, this research contributes an innovative and context-specific methodology. By centering matriarchal wisdom and community priorities, it responds to Indigenous-identified needs while strengthening provincial SRH systems. Approaching sacred research work in this way ensures that SRH policies and practices are developed by, and for, Indigenous Peoples—creating safer, more accessible, and culturally relevant health care for our future generations.

Ava Grace Smith

Psychology

The Protective Effect of Believing Positive Emotions are Good in Older Adulthood

Background: Previous research has found that the belief that ‘positive emotions are good’ is important to well-being, but there is limited literature examining their role in response to daily variations in perceived control, or across the adult lifespan.

Method: The present research sought to examine the impact of the belief that ‘positive emotions are good’ on the association between daily control levels and positive and negative affect across the adult lifespan. To do so, we used data from a daily diary study (14 days) conducted with an adult lifespan community sample [$N = 138$, aged = 19-92]. Individuals’ emotion beliefs were assessed in the baseline survey, and perceived control and affect were assessed in the daily surveys.

Results: To address our objectives, we estimated multilevel models (days nested within people). The results revealed that on days in which older adults perceive lower levels of control over their lives, believing that positive emotions are good protected them from decreases in positive affect and increases in negative affect.

Conclusions: In sum, this study demonstrates the protective impact of beliefs that positive emotions are good on days when people’s perceived control is limited. **Impact:** This research informs theoretical and empirical work on emotion and aging and paves the way for the development of emotion belief interventions for older adults.

Piper Steffen

Geography

Multispectral Satellite Data and Machine Learning for Coastline Extraction: Applying a Global Dataset to Canada's Pacific Coast

At the intersection of land and water, the coastal zone represents one of the most dynamic, populous, and biodiverse environments in the world. In British Columbia (BC), over 64% of the population lives within 10 km of the Pacific Ocean, where coastal economies are strongly tied to the health of marine environments. Species that are culturally, ecologically, and economically significant to coastal ecosystems, including salmon and Pacific herring, rely on coastal habitats such as canopy-forming kelp forests, which are increasingly threatened by anthropogenic climate change. Understanding how these changes manifest in local ecosystems remains an open question.

Monitoring coastal ecosystems at scale relies on accurate definition of the water-land boundary, known as the coastline. Satellite-based earth observation provides the potential for delineating coastlines at large scale, low cost, and high frequency when combined with machine learning algorithms such as convolutional neural networks. Although numerous studies have evaluated methods for defining the coastline, the vast majority have focused on uniform, sandy beaches at local and regional scales. The performance of these methods in heterogeneous and geomorphologically complex coastlines such as BC is unknown.

Justin Tremblett

Exercise Science, Physical & Health Education

Understanding the Benefits of Physical Literacy in Community-based Physical Activity Programming: A Pilot Study

Despite the known benefits of physical activity (PA), only 4% of Canadian youth (5-17) are meeting all of the Canadian 24-Hour Movement Guidelines. For children who are new to Canada, additional barriers such as cost, language, and accessibility may reduce adherence further. One promising method of addressing declining physical activity participation in youth is the development of physical literacy in community-based programming. Physical literacy is defined as the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life. A concept growing in attention, physical literacy is a multi-dimensional concept consisting of that literature has identified as an important determinant towards lifelong health and physical activity. Physical literacy has demonstrated positive benefits in physical activity participation, time playing sports, and reducing levels of sedentary behaviour, all of which contribute to positive overall health outcomes, as well as improving social connection and sense of belonging in community. Community-based physical literacy programming has been deemed effective for the promotion of physical activity among Canadian youth. However, to the best of our knowledge, physical literacy has not been tested as a means to support physical activity, social connection, or sense of belonging in children who are new to Canada. Therefore, the purpose of this pilot study is to develop understanding of the benefits of community-based physical literacy programming for youth who are new to Canada through partnerships with Sport for Life and the Intercultural Association of Victoria. Data from youth will be collected via the Physical Literacy Assessment for youth (PLAYtools). Additionally, focus group interviews will be conducted amongst experienced youth mentors and program delivery agents to provide a comprehensive understanding of the programming, and develop strategies to scale up existent programs

Cameo Volk

Medical Sciences

Lysergic acid diethylamide modulation of myelin in a stress-induced mouse model

As of 2022, approximately 5 million Canadians (18%) over the age of 15 meet the diagnostic criteria for a mood, anxiety, or substance abuse disorder. However, psychiatry suffers from a lack of novel and adequate treatments. Recently, research has shifted its focus to the promising potential of psychedelic compounds. Many serotonergic psychedelics, including lysergic acid diethylamide (LSD), demonstrate clinical efficacy for post-traumatic stress disorder and treatment-resistant depression, amongst other mood disorders. Further, neuroimaging studies examining the outcomes of LSD treatment reveal the compound's ability to induce significant changes to the entire brain through functional organization and network dynamics. Myelin, a protective sheath made by oligodendrocytes in the brain, is important for efficient electrical transmission along nerve cells and is essential to overall brain health and function. Investigation of the cellular mechanisms underpinning mood disorders shows an association between abnormalities in myelination and cognitive impairments, as well as depression-like symptoms. Individuals suffering from poor mood regulation have reduced structural integrity of their white matter tracts, which is further supported by previous evidence demonstrating that reduced cortical myelination also correlates with depressive disorders. LSD may modulate myelin directly through serotonin-based interactions with oligodendrocytes, or indirectly via other glial cells and the gut-brain axis. This study aims to investigate the forceps minor, a white matter area located near the prefrontal cortex, to decipher the impact of chronic low-dose LSD on myelination in a stress-induced mouse model of depression. Specifically, we will assess the myelination ratio at internodes in addition to the effects of LSD treatment on cellular stress markers amongst oligodendrocyte lineage cells in mice exposed to stress via chronic restraint. Focusing on myelin and its changes following the administration of LSD will provide insight into the underlying mechanisms of psychedelics and offer hope for upcoming clinical interventions.

Lucas Wallace

Physics & Astronomy

Numerically Estimating the Superheating Field of Superconductors with Spatially Varying Impurity Distributions

Here we investigate the magnetic phase behaviour of an impure superconductor, and predict the superheating field in the presence of some arbitrary spatially varying impurity density. To do this, we derive the Gibbs free energy of an impure superconductor immersed in an external magnetic field, making no restriction on the form of the impurity density. We then use this Gibbs free energy to derive modified Ginzburg-Landau equations, which if solved describe the equilibrium state of the superconductor. We go on to solve these modified Ginzburg-Landau equations numerically and use a simple numerical convergence test to estimate the stability of the described equilibrium state. We perform this calculation in the case of a superconductor-insulator boundary, which has practical applications in superconducting radio frequency (SRF) cavities. Operating in the Meissner state is critical for SRF cavities, thus calculating this state's stability is an important practical problem. Additionally, some cavities treated via low-temperature baking have been shown to reach surface fields greater than the lower critical field of the cavity material. Operation in this superheated regime is theorized to depend on the near-surface impurity concentration, with low-temperature baking increasing this concentration. Low-temperature baking in particular is discussed, and a novel impurity distribution is investigated where oxygen impurities are instead "cleaned" from the surface.

Grace Warren

Psychology (Clinical Neuropsychology)

Access to Housing and Healthcare Services among People Experiencing Homelessness with Brain Injury, Mental Health, and Substance Use Disorders: A Community-Engaged Study of Barriers and Facilitators

Background: Acquired brain injury (ABI), mental health, substance use and homelessness are pervasive and intersectional public health concerns, yet their combined effects are understudied. Survivors of ABI are disproportionately represented among populations experiencing homelessness and have a high prevalence of concurrent mental health and substance use (MHSU) disorders. This study examined barriers and facilitators to housing and healthcare access for individuals experiencing homelessness with ABI and MHSU disorders in British Columbia, Canada.

Methods: Data were collected during a one-day workshop as part of the British Columbia Consensus for Brain Injury, Mental Health and Addiction project. Semi-structured focus groups with ABI survivors, service providers, government representatives, and other community stakeholders explored barriers, facilitators, and recommendations for service improvement. Data were analyzed using manifest content analysis guided by a well-validated conceptual framework for healthcare access.

Results: A total of 163 participants ($M = 46.4$ years, $SD = 13.8$; 72% female), including 74 with lived experience of ABI and/or homelessness, contributed to the focus groups. Five key barriers were identified, including (1) Stigma, (2) Insufficient Investment, (3) Siloed Systems, (4) Generalized Approaches to Housing, and (5) Policies that do not Support Complex Needs. Facilitators to effective care included (1) Increasing Discourse on the Intersections of ABI, MHSU, and Homelessness, (2) Government Commitment to Systemic Change, (3) Collaboration Across Organizations, (4) Community-Based Services, and (5) Supportive Housing Models.

Conclusions: Findings underscore critical service and policy gaps while identifying effective approaches that can be leveraged to better support survivors of ABI experiencing homelessness with concurrent MHSU disorders. Efforts to dismantle barriers and build upon facilitating factors may help address the unmet health and housing needs among this underserved population.

Maya Willard-Stepan

Geography

When “Green” Meets Green: exploring the interactions between renewable energy development and ecosystem services globally

Fossil fuel energy production, as one of the most significant drivers of climate change, is causing extreme social and environmental harm worldwide. These circumstances necessitate a transition to low-carbon energy sources. A key factor in the expansion of low-carbon energy systems is the potential impact this development may have on other benefits provided by the environment, such as food or materials, commonly referred to as ecosystem services. There is currently limited knowledge beyond the regional scope of how energy development is impacting these services; an important consideration, as local studies cannot consider the full spectrum of global environmental impacts. The research outlined in this thesis uses an exploratory methodology to examine the spectrum of environments in which renewable energy projects are constructed in, and which ecosystem services are most likely to be impacted by the expansion of renewable energy globally, both for single-technology and clustered renewable energy power plants. I analyse the land cover and associated ecosystem services surrounding global power plants. I find that hydropower and wind power show the highest occurrence in ecosystem service rich environments, creating the largest risk of ecosystem service loss from renewable energy production, while clustered energy systems are placed in areas which decrease the risk of ecological trade-offs. As renewable energy continues to develop, incorporating other land considerations will be critical in ensuring the energy transition minimizes harm to the natural environment for which we all rely on.

Elvia Willyono

School of Public Administration

Seeing Possible Futures: Community-Engaged Land-Use Planning through Visualization

Governments today operate in an environment increasingly shaped by complexity. Many of the challenges they face take the form of wicked problems, issues that are difficult to resolve due to their uncertainty, interconnectedness, and the presence of conflicting values. These challenges are politically and socially complex, with no singular solutions and diverse, often contested perspectives. Addressing such challenges requires coordinated responses across sectors and levels of governance, yet public action is often fragmented, constrained by institutional silos, short-term political agendas, and resistance from entrenched interests.

Sustainable community development depends on balancing social, economic, and environmental priorities, which in turn requires collaboration across diverse actors. Yet planners often lack tools that help them navigate trade-offs and make interconnections visible. This research takes a community-engaged approach to land-use planning that supports sustainability and resilience. Through participatory systems mapping and realistic landscape visualization tools, it works directly with community stakeholders to co-develop planning scenarios that reflect local values, priorities, and challenges across climate, biodiversity, and health.

Drawing on prior planning and research, the study develops a foundation that is refined with input from local stakeholders. Their contributions shape the identification of gaps, tensions, and priorities, which in turn are translated into alternative scenarios and visualizations of possible futures. Beyond simply illustrating outcomes, these visualizations create a way of imagining the future together with communities. When people can see and feel how different choices might unfold, it sparks an emotional response. This connection deepens discussion and helps communities and decision-makers work together to design more informed, inclusive policies. This research aims to bridge the gap between analysis and action, fostering more collaborative, equitable, and effective approaches to community planning.

Yen Yen Sammi Wong

Psychology

Beyond the Classroom: How Student-led Groups and Friendship Networks Shape Student Well-Being

University is a time of major transition, and students who thrive in this environment often do so with strong support from their peers. Friendships can serve as a lifeline for students by buffering academic stress, supporting adjustment to new environments, and even predicting academic persistence and performance. But to truly understand how students are doing, we must go beyond the classroom and look at social engagement as an indicator of student well-being.

My research takes a holistic approach by exploring how friendships formed in student-led clubs and groups contribute to well-being. Clubs and groups are where students find community and nourish their well-being. According to self-determination theory, well-being depends on satisfying needs for autonomy, competence, and relatedness—which can be supported when students participate in meaningful group activities and feel like valued contributors. Relatedly, identity theory highlights how belonging to and identifying with a group can foster a stable sense of self and personal meaning. When students find belonging in a group, it can create a supportive foundation to explore who they are and who they want to become. In my research, I predict that students who are highly engaged in and have many friends their group will report higher levels of well-being.

To investigate this, 279 undergraduate students across North America completed an online survey about their club or group involvement. They reported how many friendships they formed through their group, level of engagement, and completed well-being measures capturing flourishing, psychological wellness, and basic needs satisfaction. While analyses are ongoing, I anticipate that students who are more engaged in and have more friends in their groups will report higher levels of well-being. These findings aim to inform campus programs that help strengthen peer support and meaningful engagement opportunities for students as they navigate today's complex social and academic pressures.

Kyla Younger

Chemistry

The Nitric Oxide Reduction Reaction using Porphyrin-Based Transition Metal Electrocatalysts.

The nitric oxide reduction reaction (NORR) is an alternative method for removing nitric oxide (NO) from emissions while simultaneously synthesizing ammonia (NH₃). This study investigates transition-metal metalloporphyrins (MPs) as single-atom catalysts (SACs) for NORR using density functional theory (DFT) calculations. Cr, Fe, Ni, and Cu MPs were analyzed using ORCA software to determine the binding energies and reaction behavior of each SAC. Linear Free Energy Scaling Relationship (LFESRs) were used to assess the catalysts' affinity for the adsorbate at each reaction step, and volcano plots were constructed to compare the overall effectiveness of each SAC. The use of applied voltage was investigated, and theoretical over potentials were determined in order to make the reactions thermodynamically favourable. Cr was found to be the most favourable SAC among the tested metals, with an applied potential of 1.04V. The initial binding of NO to the SACs was the least favourable reaction step for Fe, Cu, and Ni; modification of the porphyrin base and the correlating orbital structure may be a solution to this issue.

Nathaniel Zamora

Biochemistry & Microbiology

AMPing it up: Optimizing Production of Antimicrobial Peptides in *Pichia pastoris*

In recent years, antibiotic resistance has become a growing global concern. Antimicrobial peptides (AMPs) provide a promising alternative to modern antibiotics, but have yet to be widely adopted. The lack of adoption can be partially attributed to the production cost of AMPs, which are prohibitively expensive. Novel production methods based on current biomanufacturing practices are required to reduce costs. *Komagatella phaffi* is an industrial yeast species widely used in commercial biomanufacturing due to its low secretion of extracellular proteins and ability to reach high biomass, which makes it an ideal platform for high-yield AMP production. Building-block based genetic engineering such as Golden Gate assembly can be used to screen many differently modified clones with the goal of finding the highest-yield organisms. The generation of clones capable of producing high levels of AMPs will decrease costs, thereby making a key antibiotic alternative more accessible.

Presentations

Abdulrasheed INUSA Abdulmalik

Social Dimensions of Health

A narrative inquiry into the experiences of immigrants from Sub-Saharan Africa living with HIV and their families in Alberta, Canada

This study employs narrative inquiry to explore the lived experiences of sub-Saharan African immigrants living with HIV and their families in Canada. It focuses on intergenerational and community stories shaped before, during, and after migration, with attention to the ways participants negotiate and re-negotiate their experiences. Unlike most research that centers solely on individuals living with HIV, this study includes the narratives of their families. Guided by a qualitative approach, the inquiry seeks to illuminate experiences of stigma, fear, shame, discrimination, resilience, health disparities, poverty, inequality, and the community-based supports that shape participants' lives.

Aayushmathi Ashok

Physics & Astronomy

Impact of AGN Contamination on the Mass–Metallicity Relation of Galaxies

Active Galactic Nuclei (AGN) are extremely bright galaxy centers powered by supermassive black holes. When gas falls into these black holes, it produces strong spectral lines that reveal physical conditions of surrounding gas. In fiber-based spectroscopy, telescopes collect light from entire central galaxy regions, combining AGN emission with light from nearby star-forming regions. This blending creates challenges for measuring metallicity (the abundance of elements heavier than hydrogen and helium) since metallicity estimates rely on specific emission-line combinations.

The mass–metallicity relation (MZR) connects stellar mass to gas-phase metallicity and is fundamental to understanding galaxy evolution. However, its reliability depends on precise metallicity measurements. Since AGN activity is more common in massive galaxies, emission-line contamination can skew metallicity estimates, particularly at the high-mass end. Accurate metallicity measurements are crucial to help us understand how galaxies form stars, retain gas, and evolve throughout cosmic history. The central research question is: To what extent does AGN contamination bias metallicity measurements in the mass–metallicity relation of galaxies?

This project will address this using a deep-learning driven spectral decomposition method which separates AGN and star-forming components in galaxy spectra. By disentangling these contributions, the technique enables cleaner isolation of star formation emission lines, providing more reliable metallicity estimates. Corrected metallicity measurements will reconstruct the MZR across stellar mass ranges, allowing direct comparison with established trends.

Analysis will focus on high-mass galaxies where AGN activity and contamination effects are strongest. If the corrected MZR deviates from established relations, this suggests need for revised chemical enrichment and feedback models. If consistent after correction, it reinforces confidence in the MZR's robustness for understanding galaxy evolution. By applying novel spectral decomposition to a crucial astrophysical scaling relation, this project aims to provide new insights into metallicity measurement accuracy and AGN activity's impact on galaxy evolution.

Isobel Barlow-Busch

Biochemistry & Microbiology

Defining the regulation of PIKfyve's catalytic core on membrane

Inside our cells, compartments called endosomes and lysosomes act as sorting and recycling centers, breaking down and reusing cellular material. PIKfyve is an enzyme that plays a critical role in building and maintaining these compartments by producing a signaling lipid that's essential for their proper function. Because of its central role in cell survival, PIKfyve has become an attractive target for potential therapies against a wide range of diseases, including neurodegenerative disorders and cancer. Yet despite its importance, we still don't fully understand how PIKfyve is regulated or interacts with membranes to do its job in the cell.

In this study, we created a streamlined version of PIKfyve that contains only the parts strictly necessary for its activity. This "core" version is still able to perform the enzyme's main task: converting one lipid (PI3P) into another (PI(3,5)P₂). Studying this simplified form allowed us to focus more directly on how the enzyme works.

To examine how PIKfyve changes shape during membrane interactions, we used hydrogen-deuterium exchange mass spectrometry (HDX-MS), a technique that maps protein dynamics and binding behavior. Our analysis revealed a previously unknown structural feature: a short stretch of protein that rests against the enzyme's core. Our evidence suggests that this feature acts like a seatbelt, fastening and releasing to help fine-tune the enzyme's activity.

Understanding these built-in regulatory mechanisms is an important step toward harnessing PIKfyve's therapeutic potential. By shedding light on how this enzyme engages with membranes and regulates itself, our findings open new doors for future research aimed at targeting PIKfyve in human disease.

Francesca Berthiaume

Psychology

From Burden to Buffer: Influences of Polypharmacy and Social Connection on Cognitive Aging

Cognitive aging is a complex, multifaceted process, and its impact on everyday functioning varies widely across individuals. While cognitive decline is frequently linked to reduced independence in later life, this association is not uniform, suggesting that cognitive change may be shaped by broader health and social contexts. Medication burden appears to account for some of this variation, particularly as polypharmacy—the concurrent use of multiple medications—increases the likelihood of adverse cognitive outcomes among older adults. In Canada, over 80% of individuals aged 65+ live with at least one chronic condition, and nearly two-thirds are prescribed five or more medications, raising the risk of drug interactions and dosage errors. Certain medication classes, such as those with anticholinergic properties and benzodiazepines, are consistently associated with functional vulnerability. At the same time, social connection has been proposed as a source of resilience in well-being, coping, and neural adaptability in aging.

This study will aim to explore whether polypharmacy and social connection, individually and jointly, influence how long-term cognitive change relates to functional independence in later life. Specifically, it will consider whether medication burden exacerbates vulnerability, whether social engagement buffers decline, and whether their joint influence produces unique patterns of risk and resilience. The project will also aim to assess whether specific classes of medications (e.g., psychotropic, cardiovascular) are differentially associated with cognitive and functional outcomes. These questions will be addressed using pre-existing longitudinal data, offering the opportunity to examine how influences on aging accumulate and interact across time. In this way, the study seeks to place cognitive aging within its broader ecological context, highlighting the need to consider both risk and resilience factors when examining later-life outcomes.

Kiera Clark

English

“Her mouth will ope to every stranger’s ear”: The Dangerous Female Voice in Elizabeth Cary’s *The Tragedy of Mariam*

Elizabeth Cary’s *The Tragedy of Mariam* (1613), the earliest surviving play written by a woman in English, tells the story of the second wife of Herod the Great, king of Judaea (37 BCE to 4 BCE). Based on the work of Flavius Josephus, Cary subverts her source material to explore the politics of gender by shifting the focus onto the female characters and setting the play entirely in Judea. I argue that in *The Tragedy of Mariam*, the female voice is positioned as a danger to the patriarchal social structures working to restrict female autonomy; Mariam’s tragic fate demonstrates the consequences for women who reject social conventions while highlighting early modern anxieties around female speech and agency. No longer merely a passive victim, Mariam is transformed into a strong, outspoken woman willing to question the authority of her husband and king. The play scrutinizes the constraints placed on the voices of high-status women, highlighting how Mariam’s voice as a queen is still rendered ineffective against the male characters who represent the broader patriarchal forces working to oppress women. Sentenced to death after false accusations of infidelity, Mariam’s tragic fate reflects the oppressive societal forces that stifled the voices and autonomy of elite women in early modern England. Though she has an assumed degree of agency as an elite woman, this is rebutted by the play, as Mariam’s fate is still ultimately controlled by Herod, demonstrating that the voice of elite women is still not enough to achieve autonomy. In effect, Cary uses Mariam’s death as a symbol of the limits of female agency. While Mariam uses her speech and silence skillfully in the play in an attempt to establish permanent agency, neither can save her once Herod has made up his mind to condemn her to death.

Jade Fischer

Physics & Astronomy

Evaluating Treatment Options with Very High Energy Electrons for Radiotherapy

Very high energy electrons (VHEEs) are a promising type of radiation for cancer treatment, but the best way to apply them in the clinic is still being studied. In this work, we tested two ways of delivering VHEEs: scanning the tumor spot-by-spot (pencil beam scanning, PBS) and spreading the beam out with special filters and collimators (flattened beams). We tested these techniques by developing treatment plans, which are computer-based simulations that model how radiation is delivered. Treatment plans provide a realistic and feasible way to evaluate new radiotherapy approaches before they are used in patients. We applied these methods to a patient with glioblastoma, a type of brain cancer, and compared the new VHEE plans with the photon therapy plan that was actually used in the clinic.

We tested different beam energies (100, 150, and 200 MeV), collimator materials (brass and tungsten), and the two potential delivery approaches. All plans were made with the same goals and compared based on how well they treated the tumor while protecting healthy tissues. Our results showed that PBS at higher energies (150 and 200 MeV) gave better protection for healthy organs than conventional radiotherapy, while flattened beams were less effective. Adding a tungsten collimator to the PBS plans gave small extra improvements, especially for protecting the optic nerve. The best plan overall was the 200 MeV PBS with a tungsten collimator, which reduced the dose to critical structures like the spinal cord and optic chiasm by about 25% compared to the clinical plan.

This study shows that VHEEs, particularly using pencil beam scanning at higher energies, have strong potential to improve brain cancer treatment. Future work will test these methods on more patient cases to confirm the findings.

Mahayla Galliford

English

Editing and Encoding Lady Rachel Fane's May Masque (1627)

Lady Rachel Fane (1613-1680), later Countess of Bath, was fourteen years old when she wrote *May Masque* (1627). The only manuscript survives at the Kent History and Library Centre (KHLC) and provides a rare glimpse into the mind of an educated seventeenth-century girl. Masques allowed women to write and perform privately when they were not allowed on public stages. My thesis is the first edition of Fane's masque, and it will be available via an open-access UVic digital humanities project, *Linked Early Modern Drama Online (LEMDO)*, to mobilize knowledge, illuminate early modern girlhood, and supply a pedagogical and scholarly need.

Last year, I encoded a semi-diplomatic transcription of Fane's masque. By April, I will establish a modern text, an introduction, collation, and annotations. I encode Fane's text following the *Text Encoding Initiative Guidelines* with the *LEMDO* tag set for encoding early dramatic works. By editing and encoding Fane's text like *LEMDO* does the *New Internet Shakespeare Editions*, I give Fane's text legitimacy and interoperability.

This summer I undertook a fully funded research trip to England to study Fane's manuscript and visit *Apethorpe Palace*, Fane's girlhood home where the masque was written and performed. At the KHLC, I garnered insight into Fane's practice, deciphered transcription cruces, and revealed new ones. At *Apethorpe Palace*, the *Baroness von Pftetten* generously provided a tour and shared the history of the house where I deepened my understanding of Fane's particular lived experience of early modern girlhood.

My research abroad allowed me to situate Fane in the understudied field of early modern girlhood and build connections. As a result, I am working with my supervisor, other prominent scholars, and the *Baroness* to stage a performance of the masque on its 400th anniversary at *Apethorpe Palace* on *May Day 2027*.

Girls on the page and stage have been left out of many histories; my SSHRC-funded edition of *May Masque* is feminist recovery work that will enrich our understanding of early modern girlhood.

Shukooh Goodarzi

Civil Engineering

Analysis of Life Cycle and Material Flow of Single-Use Items in Victoria City

This research project, conducted in partnership with the City of Victoria's Engineering and Public Works Department, employs Life Cycle Assessment (LCA) and Material Flow Analysis (MFA) to comprehensively evaluate the environmental impacts of single-use items within the municipal boundary. The study examines various disposable products—including food packaging, beverage containers, and retail packaging—tracking their complete journey from raw material extraction through manufacturing, distribution, consumption, and final disposal. Through quantitative data collection and scenario modelling, the research identifies critical intervention points for reducing environmental footprints while assessing potential circular economy solutions such as reuse systems, material substitution, and improved recovery infrastructure.

Preliminary results indicate significant resource consumption and greenhouse gas emissions associated with Victoria's current linear management of single-use items, with particular concerns regarding plastic pollution and landfill accumulation. The analysis reveals opportunities for strategic policy interventions, including extended producer responsibility programs, sustainable design standards, and enhanced public engagement strategies. These findings directly support the City's climate action goals and waste reduction targets while addressing both local environmental concerns and global sustainability challenges. The research methodology incorporates stakeholder engagement with local businesses, waste management facilities, and community organizations, ensuring practical applicability of recommendations.

Situated within the context of urban sustainability transitions, this project respectfully acknowledges and honors the Lekwungen and WSÁNEĆ Peoples, on whose traditional and unceded territories this research occurs. The study ultimately aims to provide evidence-based guidance for transformational policy decisions that can reduce waste, conserve resources, and promote more sustainable production and consumption patterns throughout the Victoria region.

E. Brooke Hayes

Environmental Studies

Linking soil biodiversity and farmer mental health in a complex agricultural context

Background/Aim

Soil biology underpins ecological resilience, yet its relationship to human health remains oriented towards deficiencies, pathogens, and contamination. This study investigates how functional soil biology, production systems, remoteness, and social networks collectively contribute to human health, particularly farmers' mental health in British Columbia, Canada.

Methods/Approach

A socio-ecological model was developed to identify possible relationships between soil health and farmers' mental health. Data were collected from 55 farms via surveys and direct soil assessments, including teabag litter decomposition in addition to biological, chemical, and physical measures. Remoteness and a social network fragility index were calculated, and multivariate statistical analyses explored associations between soil health, remoteness, social connectivity, demographics, and mental health outcomes.

Results

Farmer remoteness and production system significantly influenced stress, perceived agency and access to resources. Further, biological soil health indicators differed by remoteness and production system. While direct correlations between soil and mental health were modest, remoteness and social connectivity emerged as influential factors shaping farmers' mental health.

Conclusion

Soil and farmer health are interconnected within broader socio-ecological systems. Rooibos decomposition (Br) emerges as a sensitive and scalable indicator of biological function with relevance to mental health outcomes.

Sydney Houston

Biology

What's eating western redcedar roots?

Western redcedar is one of British Columbia's defining tree species, valued for its cultural, ecological, and economic importance. Maintaining its health is therefore important, though root and butt rot diseases pose a significant threat underground. Several fungi are capable of causing this type of decay, but *Coniferiporia weirii* is among the most significant for redcedar. These pathogens work slowly and silently, hollowing wood from the inside out. A tree may appear healthy for years while decay spreads through its roots, leaving it weakened, unstable, and less resilient. Despite their impact, the fungal pathogens that cause these diseases remain poorly understood. Why do some trees succumb while others survive? How do pathogens like *C. weirii* interact with the diverse fungal communities already living in roots? And how does the tree molecularly respond to infection? Addressing these questions is crucial, as root and butt rot cause lasting damage, diminishing timber quality and threatening forests already under pressure from environmental change. My research explores these interactions, focusing on *C. weirii* as the central pathogen of interest. By examining both the fungal pathogen and the tree's molecular defense responses, I aim to shed light on how these diseases develop and spread. This talk provides a glimpse into the hidden world beneath our forests, highlighting why understanding root diseases is so important.

Lindsay Jackson

Philosophy

Debilitated Aging, Reanimated Futures: Preserving Life Purpose in Old Age

Old age is an understudied phenomenon in the philosophical traditions of phenomenology and existentialism. When it is studied, such as in Simone de Beauvoir's *Old Age*, it has been contextualized by unexamined ageist and ableist assumptions that view old age as a state of meaninglessness, characterized by the inescapable shrinking of life-affirming opportunities brought on by the "decline" and "decay" of our bodyminds.

Dominant perspectives on old age often reinforce narratives of discomfort, displeasure, and undesirability or offer strategies for finding contentment despite aging. Through discussions of aging with disability versus aging into disability, the discursive construction of pain, and the disruption of predictable embodiments and temporalities, I argue that life-affirming possibilities are available amid, not merely despite, the pain or disability that may accompany old age.

My foremost question has since been: What counternarratives are necessary to position aging as a process that is open to self-actualization and contentment?

The narrative I have adopted is largely influenced by the concept of existential freedom, maintaining that we are almost always able to define our own existence and secure our own meaning, even amid challenging or restrictive circumstances.

Now, I turn to the question: could enforcing this narrative of existential freedom be overdemanding? Does its availability imply a personal responsibility to pursue it, as existentialists like Beauvoir would suggest? Could this narrative, rather than empowering people to live with authenticity and adaptability, result in seniors blaming themselves for their own despondency?

Sema Kaya

Educational Psychology & Leadership Studies

Revisiting the village Institutes: Insights for Community-Based Teaching Models in Contemporary Education

This presentation explores the historical model of the Turkish Village Institutes (1940–1954) in dialogue with contemporary community-based teaching approaches. The Village Institutes were founded to address rural poverty and educational inequality in early Republican Turkey, training teachers to be both educators and community leaders. Their pedagogy was grounded in principles of “learning by doing,” democratic participation, and close integration with local communities. Although the Institutes were short-lived, their vision of education as a transformative, community-embedded practice continues to resonate today.

Drawing on this historical case, the presentation examines parallels with current models such as Indigenous education, service-learning, and place-based pedagogy. Each of these approaches challenges conventional schooling by situating learning within real-life contexts, valuing local knowledge, and fostering reciprocal relationships between institutions and communities. By comparing the Village Institutes with these models, the presentation highlights enduring pedagogical principles: education as a tool for social equity, the fusion of theory and practice, and the role of teachers as cultural and civic agents.

The analysis also reflects on the implications of community-based teaching for leadership in education. How can institutions design curricula that respond to community needs while preparing students for broader societal participation? What lessons can be drawn from past experiments like the Village Institutes to inform present-day debates on equity, sustainability, and democratic citizenship?

Ultimately, this presentation argues that revisiting historical models such as the Village Institutes offers valuable insights for re-imagining education today. By situating teaching within the lived realities of communities, educators can cultivate learning environments that are not only academically rigorous but also socially transformative.

McKenna King

English / Cultural, Social & Political Thought

Life Worth Looking At: Formal Innovation in Queer Life Writing

While completing my undergraduate degree, I completed an innovative and interdisciplinary project for my English Honours Thesis. I contributed to the emerging genre of autotheory by blending critical theory and memoir. My essay, titled “‘Luckily, he kept a journal’: Family as Collective Autobiography,” uses gender theory, trauma theory, and archive theory to perform an analysis of my family, the relationships within it, and our kinship making habits in the wake of WWII. Since completing this project, I have remained captivated by life writing and plan on exploring it further in my Master’s Thesis. I am particularly inspired by how innovative forms of memoir foreground the overlap between personal experience and social, political, and theoretical frameworks. Within the larger genre of life writing, queer contributions include conversations about the self, the body, pleasure, intimacy, identity, community, activism, and politics. These concerns are often represented through innovative forms like autotheory, critical memoir, theoretical fiction, and creative criticism. Most scholarship argues that through challenging the contextual expectations of genre, queer writers are better able to accurately represent the personal (desire, sex, the erotic, and trauma) through politics and theory. My research will focus specifically on experiments in the form, structure, and language of contemporary queer memoir. My aim is to demonstrate how experimental memoir is the ideal arena for exploring, processing, and understanding the violence and trauma experienced by queer writers and artists. Focusing on experiments in form will foreground emerging genres in life writing that more accurately represent queer experience.

Kristi Koons

Educational Psychology & Leadership Studies

Critical Policy Analysis for Social Change

Critical Anti-Racist Policy Analysis: A Methodological Approach to Anti-Racist Policy Analysis in Education

Public education is championed as the ‘great equalizer’ that will address societal disparity and promote class equity. However, many studies, scholars and educational organizations report that racism is still a pervasive problem within our education systems and demand a comprehensive approach to foster inclusive environments for all students to thrive. The British Columbia Ministry of Education has responded by introducing multiple anti-racist priorities, initiatives and strategies that include a comprehensive and inclusive approach to the policymaking process.

Critical Anti-Racist Policy Analysis (CAPA) is a framework that blends a critical approach to policy analysis with the tenants of anti-racist education, critical discourse analysis and critical race theory. As a research methodology, CAPA considers the alignment of educative anti-racism policies to the goals of inclusive education and impact for diverse, marginalized groups. Grounded in 8 critical questions, CAPA assesses the policy process from intention to outcome while encompassing a radical lens that turns the analysis into action and the analyst into activist.

This presentation will illustrate the theory, the outline and the application of the CAPA framework through the analysis of a current BC School District’s Anti-Racism policy.

Heather Kwan

Clinical Psychology

A Multi-Disciplinary Approach to Cognitive Aging Theories

The investigation of the healthy, aging brain is paramount to supporting our growing aging population. The extant theories of cognitive aging guide our understanding, research, and clinical applications of knowledge around cognitive aging. There are currently multiple theories that attempt to describe the neurobiological and cognitive consequences associated with aging. However, there are several factors that are not accounted for, or do not provide enough specificity to draw a firm conclusion; such as life course experiences such as sex/gender and hormones, the influence of trauma, culture, and atypical aging trajectories. In review of the extant theories on cognitive aging, there is a clear need to honour the current state of knowledge and create a comprehensive model that describes the factors and impact of cognitive aging. The current research described the current predominant theories of aging, critically reviewed them, and reimagined a singular model of cognitive aging with a multidisciplinary panel of aging researchers. To create a singular model of cognitive aging, we chose to employ a nominal group technique to have interdisciplinary researchers describe the factors that impact cognitive aging and provide iterative feedback on a new model incorporating their ideas. The results will discuss the preliminary results from the nominal group technique and the resulting model, known as The Interdisciplinary Model of Aging and Lifelong Health (IALH).

Linnea Leist

Exercise Science, Physical & Health Education

Exploring Teacher Wellness Using Poetic Representation

This presentation will offer insight to my Master of Arts research, Exploring Teacher Wellness using Poetic Representation with Teachers in their First Five Years. The presentation will provide information on teacher wellness as it stands, poetic representation, and hermeneutical phenomenology. The presentation will then transition into my research where I will explain my methods, and results where key themes and sub themes will be discussed and elements of found poems created from participants' verbatim transcripts. There will be opportunity for audience questions and will provide select amounts of additional resources, such as a wellness wheel (origami representation) and additional examples of found poetry.

Makayla Madill

Theatre

Examining the Patriarchal Matrix: Moral Injury in Emerging Adults

How does a fish assess the quality of water it lives in? As a people who are immersed in a patriarchal society that causes harm, our wellness requires that we assess the embedded expectations, beliefs, and values that may not serve individuals or communities. This research study is concerned with the subtle ways that patriarchy negatively impacts emerging adults (ages 18-24). The goal of this applied theatre research is to examine the process and the results of collectively exploring moral injury experienced by emerging adults due to patriarchal ideologies. Although moral injury has been defined as resulting from an act of moral treachery in a high stake, dangerous, violent, and or life threatening situation, researchers are working to expand the definition to include ordinary events that transgress people's moral values. Moral injury, regardless of the event, creates a loss of trust in society and the self, often resulting in feelings of anger, guilt, fear, and shame, which can lead to isolation, depression, and anxiety. Applied Theatre offers immersive and relational learning that will work towards making the socio politic themes of this research accessible and relatable to both the participants and the audience. The young adults participating in this study will, through a series of applied theatre workshops, explore how they experience overt and covert conflict with patriarchal beliefs, values, and actions and how this results in moral injury. The applied theatre workshops also aim to inspire participants to consider alternative ways, both individually and collectively that can ease the suffering caused by patriarchal ideologies. The workshops will culminate in a final performance that honors the group's findings and shares their discoveries with a widespread audience.

Mariah Madill

Theatre

Honouring Identity Transformation: Refugee and Immigrant Experiences Expressed Through Applied Theatre

If you are living in Canada, you might not be a direct refugee or immigrant, but the likelihood is high that one of your ancestors made the journey to this country and the more we understand the experience of migration, the more we can understand ourselves and the complex dynamics in this country. This applied theatre project seeks to raise awareness and honour the identity transformation that refugees and immigrants experience when coming to Canada. Applied theatre offers both participants and an eventual audience the opportunity to critically reflect on, analyze, and disrupt social norms and encourage further action. Adjusting to a new culture and language, establishing financial stability, and creating new social connections are only some of the hurdles that immigrants and refugees navigate. Making decisions, translating new systems, and learning values in new environments, refugees and immigrants will make subtle and critical choices in what beliefs, values, and practices they keep or change, and this process will impact their identities. Identity is determined by our sense of self and our social context; how we define ourselves and how we experience belonging is significant to how we understand ourselves and relate to others. Without conscious exploration of identity, people may not be aware of the inner conflict or misalignment that occurs to their sense of self and social relating, and this can lead to social isolation, trauma, and mental health struggles. Four to six adult immigrants and refugees will be invited to meet and participate in a series of applied theatre workshops with the intention of creating a final performance that honors and celebrates their personal experiences with identity transformation. This project aims to encourage hope for the future in the participants and the witnesses, which can promote better well-being, healthier mindsets, and encourage healing of mental health struggles.

Andrew McCoy

Earth and Ocean Sciences

Community Guidelines for Strong Data Stewardship: Assessing three key databases housing planktic foraminifera data and their differences

Science is a collaborative process. With the explosion of data present in modern studies, however, the unique needs of each research community, and the uncertainty of funding, we often do not consider how our data will be accessed beyond individual studies. In many cases smaller- scale and/ or discipline-specific databases are made as stopgaps and often end up as semi-permanent solutions. Scientific ocean drilling has produced immense amounts of data, and a tremendous amount of work has been done to support and curate these data that have been collected over nearly 60 years. However, with greater need for global-scale analyses and greater access to high computational power than ever before, there is more need than ever to showcase and further develop our databases. Using the widely accepted principles of Findability, Accessibility, Interoperability, and Reproducibility (FAIR) we can provide clear conceptual guidelines for data accessibility and stewardship. This presentation will explore three commonly used databases housing this information, The Paleobiological Database (PBDB), The Triton Database (Triton), and Neptune Sandbox-Berlin (NSB) both quantitatively and qualitatively. These three databases are all tacitly understood as having fundamental differences, but no exploration into how these differences shape analyses has been undertaken. Without properly understanding how these repositories store this information, it is challenging to compare datasets, or inform modelling work, or undertake cross-disciplinary studies using these data. By using this case study to inform the broader research community, we can increase our integration of scientific data and reduce the barriers between fields significantly. Emphasis will be placed on both specific issues in this field, and how similar issues affect database studies more broadly.

Allie Miskulin

Chemistry

Non-targeted Approaches for the Detection of Newly Emerging Adulterants in the Illicit Drug Supply Using Paper-Spray Mass Spectrometry

The opioid crisis continues to result in an unprecedented number of deaths every year in North America. The volatile nature of the illicit drug market is a major factor that has contributed to the increasing number of overdose deaths. Drug checking as a harm reduction strategy aims to provide individuals with information as to the chemical composition of their drug samples, allowing them to make informed choices about their drug use. Paper-spray mass spectrometry (PS-MS) has demonstrated performance as an on-site drug checking instrument. PS-MS is ideal for point-of-care testing due to a rapid speed of analysis, ease of use for the operator, and the ability to detect compounds at trace quantities. While targeted PS-MS methods have proven success in trace detection and quantitation, compounds outside of the targeted analysis method often will not be identified. Given the volatile and complex nature of the illicit drug market, there is a need for non-targeted mass spectrometry approaches for the detection of emerging substances within the drug supply. While fentanyl and caffeine has consistently been the most common composition of illicit opioid mixtures, a wide range of adulterants have continuously emerged in the drug supply. One of the current issues in non-targeted detection is identifying which samples contain novel adulterants. To address this challenge, a support vector machine classifier was developed to classify samples containing caffeine and fentanyl from samples containing fentanyl, caffeine, and an additional component. Samples found to contain an additional component could then be analyzed by a previously developed data-dependent acquisition method using high-resolution PS-MS. The combination of a machine learning model and high-resolution instrumentation was therefore used for the identification of newly emerging substances within the illicit drug supply, and provides a novel approach to non-targeted drug analysis.

Sean Morgan

Psychology

How Minority Stress Shapes Violence in Sexual Minority Men

Intimate partner violence (IPV) among gay, bisexual, and other sexual minority men is still not well understood. Most research focuses on the effects of IPV rather than what causes it, and often overlooks that violence happens within relationships, not just to individuals. This study looked at how different kinds of minority stress, including experiences of discrimination, internalized homophobia, and hiding one's identity, are linked to different types of IPV, including identity abuse (when a romantic partner uses someone's sexual orientation to harm them). We used data from 213 couples (426 men) in the National Couples' Health and Time study. We found that men's internalized homophobia, level of outness, and concealment were linked to more identity abuse. Interestingly, when a man's partner reported experiencing discrimination, the man was more likely to engage in other harmful behaviors like psychological abuse, controlling behaviors, and negative conflict patterns. These findings show that both partners' stress experiences shape the risk of IPV. They highlight identity abuse as a key area for prevention and suggest that reducing minority stress at both the individual and community level could help prevent violence in sexual minority men's relationships.

Ali Mortazavi

Computer Science

How to Pick the Best Forecaster When Everyone Is Competing for Reputation

Forecasting competitions are designed to combine the knowledge of many experts to improve decision-making. In these settings, experts provide probabilistic predictions about future events, and an aggregator uses these predictions to choose one expert each round, with the probability of selection proportional to the expert's past performance or reputation. The selected expert receives a reward, while the non-selected experts receive nothing. This creates a competitive dynamic: instead of simply reporting their true beliefs, experts may strategically adjust their forecasts to maximize their chance of being selected as often as possible. This misreporting can harm the quality of the overall forecast.

Our goal is to design a mechanism that performs nearly as well as the best expert in hindsight while also making it in every expert's best interest to report their true beliefs, even when they care about their probability of being selected in future rounds rather than just the next one. We call this strategyproof mechanism.

In this work, published in ACM EC 2025, the top international conference in game theory and computation, we present FPL-ELF, the first mechanism to achieve both of these goals. FPL-ELF is based on a randomized version of the classic Follow the Perturbed Leader algorithm. Our analysis shows that FPL-ELF achieves regret on the order of $O(\sqrt{TN \log\{T\}})$, where T is the number of rounds and N is the number of experts.

Our results provide a principled way to design fair and robust forecasting competitions that both aggregate information effectively and incentivize honest participation.

Emiko Osborne

Psychology

The Role of Eye Movements in Scene and Object Memory

If a person is presented with an image of a bedroom and asked to memorize it, the first thing they will do is move their eyes around it, which allows them to encode it in their memory. When that person is asked to recall the bedroom, their brain will attempt to recreate the original image, a memory process called reinstatement. As they reinstate the bedroom, their eyes will move to similar locations and in a similar order as when they first saw it. Recent research has shown that eye movement patterns during recall not only reflect what we remember, but play an active role in memory reinstatement. The process by which eye movements help us to remember images and events is called gaze reinstatement. In this project, I will explore how gaze reinstatement is related to memory for objects in scenes. Participants will view and memorize several scenes (e.g., bedrooms), and be asked to recall a certain one (e.g., Anna's bedroom) while their eye movements are monitored. Next, they will indicate whether various objects (e.g., an alarm clock) appeared in Anna's bedroom, including objects that were both present and absent. I aim to examine how closely participants' eye movements match between when they encode and reinstate scene images, and how this relates to their memory for objects in that scene. By establishing a link between gaze reinstatement and object memory, this research will advance our understanding of how eye movements functionally support memory, and strengthen eye tracking as a valuable measurement tool in cognitive psychology. In future work, I plan to explore age-related changes in the complex interactions between eye movements and memory.

Jasmine Padam Sunny Jun & Rae Fletcher

Sociology

Narrating the Lived Experiences of First-Gen Students & Faculty

This research explores the experiences of first-generation students and faculty within a university setting, utilizing qualitative and quantitative creative and embodied methods such as body mapping, art creation, and poetry to elicit insights beyond traditional verbal and written accounts. It aims to understand the challenges, strengths, and profound impacts of a mentorship program designed to support this demographic. Findings highlight the significant need for community, personal connection, and systemic institutional support for first-generation individuals, while demonstrating the power of alternative research methodologies to capture complex lived experiences and foster meaningful dialogue.

Tara Poole

Educational Psychology & Leadership Studies

Promoting School Belonging: A Multiple Case Study Investigation in Early Elementary Classrooms

My presentation will briefly summarize currently literature related to school belonging and its associates, along with strategies for promoting school belonging. Next, I will review my doctoral research project. My research takes the form of a qualitative case study that explores both student and teacher perspectives of school belonging in four early elementary classrooms in the Greater Victoria School District. I am particularly interested in understanding how young children experience belonging at school, how their perspectives may differ from those of their teachers and other school belonging research primarily originating from older populations, and what strategies can best promote belonging in these early years. Despite strong evidence highlighting the importance of school belonging to positive academic, social, and psychological outcomes, much of the existing scholarship focuses on middle and high school populations outside of Canada. This work seeks to address this gap by centering on the voices and experiences of early elementary students in Canadian contexts. I have completed data analysis of two of the cases and will review the findings from these classrooms. Current themes have identified the importance of friendship, peer play, and opportunities for students to engage in self-directed activities that foster joy, confidence, and skills acquisition. These findings suggest that belonging is nurtured not only through academic engagement but also through meaningful social connections and opportunities for creative exploration.

Tatiana Popova

Pacific & Asian Studies

Disposable bodies, restricted minds: biopolitical governance of care workers and highly skilled migrants in Japan.

Japan's rapid population aging and persistently low fertility have produced a severe demographic crisis, creating labour shortages across multiple sectors. While immigration could help address these issues, the Japanese state has resisted permanent settlement, relying instead on temporary labour programs that restrict integration and reinforce precarity. This project examines that paradox: the simultaneous dependence on foreign workers and the policies that limit their long-term inclusion. The research focuses on two groups at opposite ends of Japan's labour hierarchy. Care workers, recruited through frameworks such as the Economic Partnership Agreements and the Specified Skilled Worker program, face strict language and licensing requirements. By contrast, highly skilled migrants—admitted under categories such as the Highly Skilled Professional visa or the Engineer/Specialist in Humanities/International Services visa—are valued for their expertise and assessed on criteria including salary thresholds and academic credentials. Despite these differences, both groups encounter systemic constraints that undermine autonomy, career mobility, and belonging. This contrast reflects a biopolitical division between “bodies” and “minds,” shaping labour segmentation, residency opportunities, and broader social inequalities. The study pursues three objectives: to demonstrate how biopolitical governance differentiates between care and high-skill labour while institutionalizing temporariness and precarity; to analyze migrants' lived experiences, with attention to agency and resistance; and to situate Japan's policies within global debates on migration governance and labour segmentation. Drawing on biopolitical theory alongside feminist and poststructural critiques of mind/body dualism, the project combines content and policy analysis with semi-structured interviews to connect governance structures with migrants' everyday experiences. By tracing how biopolitical control operates across distinct sectors, the study contributes to migration studies, political science, and labour sociology. It shows how Japan's policies regulate not only work but also migrants' futures, while also revealing how migrants navigate, resist, and reshape these governing structures.

Lauren Sapic

Law

Returning Home: Legal Pathways and Ethical Duties in Repatriation

This presentation explores the evolving legal and ethical frameworks that govern repatriation work in the heritage industry, with a focus on the Canadian context. Repatriation refers to the process of returning cultural heritage items, such as ancestral remains, sacred objects, and ceremonial artifact, to their communities of origin. Historically, many of these items were acquired through colonial practices, looting, or unequal power dynamics. Today, repatriation is a key component of broader movements toward reconciliation, decolonization, and cultural justice.

While repatriation is often framed as a moral obligation, it also involves navigating complex legal systems. Canada currently lacks a unified national law mandating repatriation. However, several legal instruments shape the process: international conventions like UNESCO's 1970 Convention; human rights declarations such as the UN Declaration on the Rights of Indigenous Peoples ("UNDRIP"); and domestic legal tools like the Cultural Property Export and Import Act. Institutional policy, Indigenous law, and negotiated agreements also play critical roles.

This talk outlines how repatriation claims are made, the legal barriers communities face, and how Canadian institutions are beginning to adapt. It highlights the influence of the Truth and Reconciliation Commission ("TRC") and recent legislative efforts, such as British Columbia's implementation of UNDRIP through DRIPA. It also discusses the limitations of existing laws and the need for systemic change.

Hannah Schnicke

Chemistry

Uniform, length-tunable diblock copolymer nanofibers for active targeting of triple-negative breast cancer

One-dimensional (1D) nanofibers have attracted considerable attention for nanomedicine applications as they have shown several advantageous over spherical counterparts such as prolonged circulation times, superior cellular uptake and enhanced tumor penetration. Control over the length and shape of nanoparticles may increase their targeting capabilities and potency for therapeutic applications, while the implementation of targeting groups can direct nanomaterials to specific cells or tissues. Triple-negative breast cancer (TNBC) is particularly challenging to target due to the absence of estrogen, progesterone and human epidermal growth factor 2 (HER2) receptors. However, TNBC overexpresses GLUT5 receptors that specifically transport fructose which makes nanomaterials that contain fructose promising candidates to target TNBC. Accordingly, living crystallization-driven self-assembly (CDSA) was employed to prepare low dispersity and length controlled 1D nanofibers from crystallizable block copolymers (BCPs) of poly(fluorenetrimethylenecarbonate (PFTMC), a biocompatible and biodegradable crystalline core-forming block for living CDSA, and poly(fructose) (PFR), a biocompatible corona forming block that permits active targeting of GLUT5 receptors. Uniform and length-controlled nanofibers ($L_n = 40 - 1200$ nm) of PFTMC-b-PFR were prepared via living CDSA. The colloidal stability of the nanofibers upon transfer in aqueous media allowed for an assessment of their biocompatibility towards two breast cancer cell lines MDA-MB-231 and MCF-7. These studies reveal that PFTMC-b-PFR nanofibers exhibit no discernible cytotoxicity and excellent biocompatibility, indicating great potential for applications as drug delivery system. Preliminary studies on drug loading of 1D nanofibers with a small molecule chemotherapeutic Paclitaxel and cell targeting of two breast cancer cell lines will be discussed.

Christina Shock

Educational Psychology & Leadership Studies

Diversity Inclusion within Social Emotional Learning

My oral presentation will be about my literature review, which explores the different factors that can influence social-emotional learning and inclusive education teaching within schools. A majority of the academic literature has not combined these two topics to understand how diverse students fit into this new curriculum by the use of inclusive education. The implementation of social-emotional learning within the classroom has created parents of children with diversity to speak out about their uncomfortability with these changes. As they worry as to how their children are being included within the benefits of social emotional learning. My presentation will combine the current discussion of academic literature with advocates speaking out about worries, concluding with where my research is headed.

Carlanna Thompson

History

Indigenous Bodies, Colonial Games: Contested Meanings at the Inaugural 1931 Indian Schools Olympiad

In May 1931, Coqualeetza Residential School in Sardis, British Columbia, hosted the first—and only—Indian Schools Olympiad. Sponsored by the Department of Indian Affairs, the event brought together students from Coqualeetza and other provincial residential schools to compete in various athletic events. Open to the public, it showcased student skill and discipline to local communities, government officials, and other observers. Though intended as an annual affair, the Olympiad was never repeated, making it a unique occurrence in the history of Canadian residential schools.

This paper examines the 1931 Olympiad as a contested site where meanings of sport, discipline, and assimilation were negotiated. Drawing on Janice Forsyth's Foucauldian analysis, it argues that the event functioned as a mechanism of colonial authority: disciplining bodies, normalizing behavior, and making power visible. Athletic performance both demonstrated the perceived "success" of residential schools in assimilating Indigenous children and reinforced Euro-Canadian ideals through structured physical culture. Foregrounding Indigenous methodologies, however, complicates this narrative, revealing that for some students, sport offered moments of skill, enjoyment, and community within an oppressive system. Using Mi'kmaw Elder Albert Marshall's principle of Two-Eyed Seeing—which emphasizes understanding the world through both Indigenous and Western perspectives—this paper combines archival records with survivor testimonies, oral histories, memoirs, and community narratives. This dual approach highlights both the assimilationist intentions of the Olympiad and the ways Indigenous students experienced, resisted, and reinterpreted sport under colonial authority.

Yanxin Xu

Psychology

Seeing is remembering: How precise gaze reinstatement affect memory retrieval

Understanding human memory has long been a central goal in cognitive psychology. Memory involves three main processes: learning new information (encoding), keeping it over time (storage), and subsequently bringing it back to mind (retrieval). Recent research suggests that memory retrieval is closely tied to eye movements. When people try to recall something, their eyes often return to the same spots they looked at when first learning it—a phenomenon called gaze reinstatement.

Although gaze reinstatement has been linked to memory performance, the strength and direction of this relationship remain unclear. In this study, we examine whether more precise gaze reinstatement leads to better memory retrieval.

We will recruit healthy young adults from the University of Victoria. Participants will view a series of objects while their eye movements are recorded with an eye tracker. Subsequently, they will complete memory tests in which their eye positions are either unconstrained or experimentally shifted to varying distances from the originally encoded position. This design allows us to test whether memory accuracy depends on how closely participants' eye movements during retrieval match the patterns they displayed during the encoding phase.

Preliminary results from a small pilot suggest that memory performance declines when participants' gaze during retrieval drifts further from their original encoding position. These findings point to a functional role for eye movements in supporting memory retrieval. By clarifying how gaze reinstatement contributes to remembering, this work sheds light on the connection between visual attention and memory processes.

Jinwei Zhao

Computer Science

Measuring Low-Earth-Orbit Satellite Networks

The mission to expand Internet access for all — reaching diverse geographical regions, diminishing the digital divide, and enhancing the reachability, reliability, and resilience of the Internet — highlights the significant importance and critical need for continuous and ubiquitous connectivity. The advent of Low-Earth-Orbit (LEO) satellite networks, such as SpaceX’s Starlink and Eutelsat’s OneWeb, have already been delivering low-latency and high-throughput Internet access to remote, rural and underserved regions, connecting some of the world’s most isolated areas. “High-speed Access for All” is Canada’s connectivity strategy for delivering reliable, affordable and high-speed Internet access to Canadians from all communities. The advancement in LEO satellite networks enables remote and Indigenous communities to engage in the digital economy, access educational and telehealth resources, and ensure equitable access to information.

Over the past few years, we have been conducting comprehensive and systematic network measurement for LEO-based space broadband Internet (SBI) services, including Starlink and OneWeb. Our open-sourced LEO network measurement dataset provides continuous active network measurements since November 2023, offering longitudinal insights in exploring and understanding the performance and characteristics of LEO satellite networks. Additionally, we built the Canadian Coast-to-Coast LEO network testbed, which includes at least one Starlink user terminal in each Canadian province and territory, with ongoing plans to extend to OneWeb, and eventually to include Project Kuiper and Lightspeed once they become operational. In this presentation, I will cover our recent research effort on demystifying the SBI services, including the Starlink performance in mobility scenarios and the first comprehensive cross-layer measurement study of OneWeb.

