

**Inquiry@Queen's**  
**18<sup>th</sup>**  
**Annual Undergraduate**  
**Research Conference**

**Program**

March 7 & 8, 2024  
Stauffer Library

[queensu.ca/iatq](https://queensu.ca/iatq)



March 2024

We are now in our 18th year of celebrating the discoveries of a new generation of scholars at the annual Inquiry@Queen's (I@Q) Undergraduate Research Conference. I@Q is more than a conference; it is an approach to learning where the teacher and the learner reside in the same person. It is a natural extension of a university that prides itself on the quality of undergraduate education and its scholarship and research.

This year, we are excited to launch a new prize that will be associated with I@Q. The **Vice-Principal Research Undergraduate Prize** is a crucial step in recognizing and nurturing the research talents of undergraduate students. This prize will celebrate academic rigour, reinforce the commitment to teaching and research integration, and elevate the profile of undergraduate research at Queen's University.

The **Vice-Principal Research Undergraduate Prize** will award \$1000 each to the recipients of the **top two papers** presented at the Inquiry at Queen's conference, as evaluated by graduate student adjudicators.

The 2024 I@Q conference consists of seven presentation sessions, a poster session, and a keynote address. We invite you to attend as many of the sessions as you can and to pose challenging questions to our presenters and panelists. Later this year, all the presentations, panels, and posters will be published in the [2024 I@Q Conference Proceedings](#).

Thank you for attending, sincerely the 2024 I@Q Conference Planning Team:

*Klodiana Kolomitro (Co-Chair): Special Advisor, Undergraduate Research*  
*Mark Swartz (Co-Chair): Scholarly Publishing Librarian, Queen's University Library*  
*Emma Bullerwell: Library Accessibility Services Assistant, Queen's University Library*  
*Catherine DeNoble: eReserves and Copyright Technician, Queen's University Library*  
*Jane Reeves: Reference Assistant, Queen's University Library*  
*Meaghan Shannon: Copyright Librarian, Queen's University Library*  
*Carling Spinney: Reference Assistant, Queen's University Library*  
*Brianna Storms: Information Resources Librarian, Queen's University Library*  
*Sarah Whiteman: Administrative Assistant to Vice-Provost (Teaching and Learning)*

*We recognize that Queen's University is situated on traditional Anishinaabe and Haudenosaunee Territory and that it is a privilege to learn together on this land.*

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## Conference Schedule

### Thursday, March 7, 2024

- 9:00-9:10 Welcome and Land Acknowledgement: Dr. Klodiana Kolomitro, Special Advisor, Undergraduate Research (Stauffer Library, Room 014)
- 9:10-9:40 Presentation Session A: Nursing & Health (Room 014)
- 10:30-12:00 Keynote: Dr. Jane Philpott (Room 014)
- 12:00-1:30 Lunch with the Posters! (Stauffer Library, Atrium and Room 121)
- 1:30-2:30 Presentation Session B: Nursing & Health II (Room 014)
- 2:45-4:00 Presentation Session C: Geography (Room 014)

### Friday, March 8, 2024

- 9:00-9:05 Welcome Back & Land Acknowledgement (Room 014)
- 9:05-10:20 Presentation Session D: History & Religion (Room 014)
- 10:35-11:20 Presentation Session E: Music & Drama (Room 014)
- 12:00-1:00 Lunch (Room 121)
- 1:00-2:00 Presentation Session F: History II (Room 014)
- 2:15-4:00 Presentation Session G: Culture & Society (Room 014)
- 4:00-4:15 Wrap-Up / Thank You (Room 014)

## Presentation Session A: Nursing & Health

Room 014, Stauffer Library

Thursday, March 7, 9:10-9:40

Moderator: Klodiana Kolomitro, Special Advisor, Undergraduate Research

### Radical Collaboration and its Role in Equity Curriculum Development

Presenter: Nethmi Illamperuma

Faculty Supporter: Dr. Natalie McGuire, Biomedical and Molecular Sciences

Education, particularly at the post-secondary level, has historically lacked diversity regarding who is teaching, what they are teaching, and how they are teaching course material (Mangan, 2012). Recently, there has been discussion on theoretical benefits of dismantling issues within the current system—for example, teaching in teams, teaching with an Equity, Diversity, Inclusion, Indigeneity, and Accessibility (EDIIA) lens, and general benefits of integrating diverse perspectives and interprofessional education (IPE) into curriculum. Further, there has been discussion on the importance of IPE in promoting interdisciplinary teamwork, communication, shared problem-solving, and knowledge and skills in academic preparation of future healthcare providers (Dyess et al., 2019). However, little work has been published on practical tips or examples for updating healthcare training with an EDIIA lens (Sotto-Santiago et al., 2022). What's more, there appears to be little work describing practical tips surrounding the intersection between equity curriculum development and IPE—both being vital to educating health professionals who will collaboratively represent the diverse identities and needs of their patients. A scoping literature review was conducted to explore this intersection. Search one terms included: interprofessional curriculum; AND health science; AND equity; AND student. Search two included the same terms, with "AND student" replaced by "AND collaboration." Of 121 articles identified, 27 met inclusion criteria (i.e. studies published in North America and Europe, curriculum-focused for students within health sciences). The manuscripts included three articles identifying the need for team-based approaches to integrating equity into curriculum, ten articles identifying theoretical frameworks and/or strategies, and fourteen articles identifying interventions or piloting examples involving IPE and equity. Analyses identified 4 major themes (i.e. common recommendations, teaching and learning strategies, evaluation methods, and educational content). People have a right to feel seen in both education and healthcare. Advancing knowledge intersecting equity-based curriculum and IPE will not only benefit our healthcare trainees, but patients and communities they serve at large.

#### References

1. Dyess, A. L., Brown, J. S., Brown, N. D., Flautt, K. M., & Barnes, L. J. (2019). Impact of interprofessional education on students of the health professions: a systematic review. *Journal of Educational Evaluation for Health Professions*, 16, 33. <https://doi.org/10.3352/jeehp.2019.16.33>
2. Mangan, J. A. (Ed.). (2012). *The imperial curriculum: Racial images and education in the British colonial experience*. Routledge.
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### A Review on the Guidelines of Aspirin Use as a Prophylactic Agent in Deep Vein Thrombosis Following Total Knee Arthroplasties

Presenter: Fawwaz Khan

Contributor: Khulood AlHasan

Guidelines regarding Deep Vein Thrombosis prophylaxis following total knee arthroplasties have had conflicting information regarding the use of aspirin as a prophylactic agent in recent years. The National Institute for Clinical Excellence refrains from listing the drug in its guidelines while the American College of

Chest Physicians advocates for the drug. Despite the conflicting guidelines, physicians have favored the drug in recent years, with more than 80% utilizing it as a prophylactic agent in total knee arthroplasties. Although a consensus may have been reached by physicians regarding the use of the drug, a consensus has not been reached regarding the preferred dosage. With this in mind, a search of the PubMed database was conducted which yielded six studies that discussed the efficacy of various dose ranges of aspirin. All studies corroborated that not only was aspirin an effective prophylactic agent, but that there was no significant difference between dosages regarding efficacies. Due to factors such as aspirin resistance and the potential of aspirin to cause gastrointestinal injuries, this literature review concludes that the dosage of aspirin given for the prophylaxis of DVT in TKAs should be considered on a patient to patient basis.

## **Keynote Presentation**

**Room 014, Stauffer Library**

**Thursday, March 7, 10:30-12:00**

**Moderator:** Amanda Ross-White, Health Sciences Librarian

**Dr. Jane Philpott, Dean of the Faculty of Health Sciences  
Director of the School of Medicine, Queen's University**

We are thrilled to have Dr. Jane Philpott join us for the 2024 I@Q Conference Keynote Presentation.

Dr. Philpott is an accomplished family physician, educator, and global health champion, and is best known for having held several senior cabinet positions with the Government of Canada. Elected as the Member of Parliament for Markham-Stouffville in 2015, she served in a number of prominent federal cabinet roles, including as Minister of Health, Minister of Indigenous Services, President of the Treasury Board, and Minister of Digital Government. She currently serves as Special Adviser on Health for Nishnawbe Aski Nation, an organization representing 49 First Nation communities across Treaty 5 and Treaty 9 in northern Ontario.

Prior to entering politics, Dr. Philpott spent over 30 years in family medicine and global health. She spent the first decade of her career in Niger, West Africa, where she provided clinical care to patients and training to community health workers.

## Lunch with the Posters!

Atrium, Stauffer Library

Thursday, March 7, 12:00-1:30

Posters will be on view March 7 & 8

### Enhancing Assessment Practices in Health Sciences: Leveraging Community Involvement and Technology for Student Evaluation

Presenters: Kaylee Allan, Wasiq Hassan

Faculty Supporter: Dr. Heather Braund, Professional Development and Educational Scholarship

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Current Queen's Health Science (QHS) students are graded by teaching staff that are practicing members of their respective professions (Medicine, Nursing, Rehabilitation therapy). For high stakes clinical evaluations like objective structured clinical examinations (OSCEs), this is unsustainable from the perspective of budgeting and faculty time. Further, a decrease in faculty engagement has been noted, making it challenging for QHS to recruit teaching staff members for summative evaluations.

This comparative analysis protocol provides the foundation to examine if trained community members can grade QHS students to an equivalent standard of QHS teaching staff using a clearly defined rubric. As a secondary research outcome, we will explore whether SIMULATIONiQ, an advanced simulated medical education software, is a feasible platform (e.g., user-friendly, accessible) for grading students using digital rubrics built in the system.

Community members will be recruited and trained by the Health Sciences Experiential Learning Program (HscELP) in conjunction with QHS faculty members. In a mock OSCE comprised of history taking (Hx) and physical examination (PE) stations, students recruited via self-enrollment will be assessed by community examiners and faculty examiners. The evaluators will be assigned randomly, observing through the blinded observation hall or asynchronously on SIMULATIONiQ.

After evaluations are complete, results will be assessed via Spearman's Rank Correlation Coefficient. It will be used to assess the consistency and agreement in the rankings assigned by the faculty and community members. As a non-parametric statistical measure, it can best represent the relationship between the ordinal data (rankings of student performance).

If the trained community members prove to be accurate examiners, this may provide a more cost-effective solution, allowing medical professionals to devote their time to teaching and practice, rather than grading. This study may also demonstrate the benefits of a standardized training protocol for examiners and determine whether this alternative grading model is sustainable.

### Comparing Outcomes of Patellar Tendon and Hamstring Autografts for Anterior Cruciate Ligament Reconstruction: A Literature Review

Presenter: Noah Boroditsky

Faculty Supporter: Ryan Bennett, Q Sports Medicine

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**Background:** Anterior cruciate ligament reconstruction (ACLR) surgery becomes necessary following the rupture of the ACL, typically caused by the anterior shift of the tibia on the fixed femur. However, the existing literature lacks a consensus on an idealized surgical technique for ACL repair. This literature review delves into the outcomes of ACLR, specifically utilizing patellar tendon and hamstring autografts.

**Methods:** The literature review involved the comprehensive exploration of two databases, Omni library and Ovid Embase. A total of 16 studies were initially identified based on inclusion and exclusion criteria, with five studies excluded in the initial screening. Subsequently, a screening process involving the review of titles and abstracts for 11 studies resulted in the exclusion of four studies. Finally, data extraction was performed on the remaining seven studies, leading to the exclusion of three studies. Ultimately, four studies were included in the final analysis.

**Results:** Heyworth et al. (2019), found no significant difference in medium-term functional outcomes between patellar tendon and hamstring autografts. Britt et al. (2020), revealed high satisfaction but limited return to preinjury sport levels. Samuelsen et al. (2017) suggested a slightly higher failure rate with hamstring autografts, though both graft types remained viable options. Migliorini et al. (2023), favoured patellar tendon autografts for reduced joint laxity but noting higher rates of anterior knee pain.

**Conclusion:** The existing literature indicates a tendency favouring patellar tendon autografts for ACLR, emphasizing their lower re-injury and failure rates. However, the distinctions between autografts are marginal, with consistent reports of similar knee stability and functionality across studies. Despite the absence of a gold standard technique, patellar tendon autografts are commonly preferred. Future research should address limitations, extend patient follow-ups, incorporate larger sample sizes, and explore a standardized method for measuring the success of post-operative ACLR patients, thereby advancing knowledge and improving patient outcomes.

## **What do patients (want to) know about non-muscle invasive bladder cancer pathology: preliminary results**

Presenter: Grace Bowry

Faculty Supporters: Dr. Jacqueline Galica, Dr. David Berman; School of Nursing

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Patients with non-muscle invasive bladder cancer (NMIBC) are faced with technical pathological terminology at the time of diagnosis. As pathologic diagnostic technologies evolve, it is critical to understand the information needs of individuals with NMIBC. Currently, there are no known studies that evaluate the effectiveness of education tools for NMIBC, nor identify NMIBC patient education needs.

A pre-post study design was employed to address the research objectives. Before reviewing Bladder Cancer Canada's *Patient Guidebook for Patients with Non-Muscle Invasive Bladder Cancer*, participants completed demographics, diagnostic history, and current understanding of NMIBC pathology questionnaires. After reviewing the guidebook, participants evaluated their understanding of NMIBC pathology.

In preliminary results, patients were more familiar with terminology related to NMIBC stage compared to grade. Given the importance of grade as a prognostic indicator, these preliminary results highlight opportunities to empower patients and guide patient education. In addition, there was a small statistically significant increase in self-perceived understanding of NMIBC stage and grade before and after evaluating the *Patient Guidebook for Patients with Non-Muscle Invasive Bladder Cancer*. By evaluating the effectiveness of Bladder Cancer Canada's *Patient Guidebook for Patients with NMIBC*, future work can be done to optimize NMIBC patient education tools and methods. This research will inform future work to improve patients' understanding of clinical decision algorithms.



## **Tissue resident macrophages regulate satellite cells via paracrine secretion of IGF-1**

Presenter: Jiarui Che

Faculty Supporter: Dr. Sarah Dick, Biomedical and Molecular Sciences

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### **Introduction/problem statement**

Skeletal muscle regeneration is impaired by aging or chronic inflammation which reduces mobility and negatively impacts quality of life. Recent literature has reported that innate immune cells called macrophages may be involved in skeletal muscle repair via secretion of insulin-like growth factor 1 (IGF-1), which initiates muscle stem cell (satellite cell) proliferation and differentiation into new muscle cells. However, the identity of these macrophages and the spatial dynamics of this role are not well characterized. Tissue resident macrophages (TRMs) are a subtype of macrophage involved in tissue homeostasis and repair, yet their role in muscle regeneration is currently unknown. I aim to characterize TRM function in muscle repair by assessing its spatial relationship with satellite cells and role in the secretion of IGF-1.

### **Results**

Using immunofluorescence imaging of fixed muscle tissue, I observed TRMs in skeletal muscle extend their cell membrane to co-localize with satellite cells. I observed increased TRM and satellite cell co-localization post-injury. Selectively depleting TRM secreted IGF-1 increased percent skeletal muscle tissue fibrosis fourteen days after cardiotoxin injury. Together, this data suggests that TRMs may be involved in skeletal muscle repair by spatially co-localizing with satellite cells and releasing IGF-1.

### **Implications**

My data reports on a possible pathway by which TRMs can regulate muscle regeneration after acute injury. More work needs to be done to confirm that TRM secreted IGF-1 induces satellite cell differentiation and proliferation. Future work identifying factors regulating skeletal muscle TRM population and release of IGF-1 as well as other cells involved in this pathway may identify targets for immunotherapies to treat muscle fibrosis and enhance regeneration.

## **Modeling Plant Hardiness in the face of Climate Change: Analysis in the Canadian Context**

Presenter: Liam Gavaghan

Faculty Supporter: Dr. Neal Scott, Geography and Planning

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Canada, with its vast and diverse landscapes, is particularly susceptible to the impacts of climate change. The country's rich biodiversity and extensive ecosystems face unprecedented challenges as global temperatures rise and weather patterns become increasingly unpredictable. Among the key factors influencing the adaptability of flora to these changes is the concept of plant hardiness—the ability of plants to withstand and thrive in varying environmental conditions. This paper endeavors to employ climate modeling techniques to investigate and forecast the future trajectories of plant hardiness in Canada, aiming to provide crucial insights for sustainable land management, biodiversity conservation, and agricultural planning.

As of November 2023, The United States Department of Agriculture has officially updated their own metrics for plant hardiness to the current day; however, the Canadian Government has yet to update their own plant hardiness map in well over a decade, its last change being August of 2012. With the climate changing so rapidly, there is an urgent need to comprehend the nuanced interplay between climate change and plant hardiness in the Canadian context. This gap in time along with perspective changes in southern climates provides an opportunity to use climate data and modeling to simulate the dynamics of plant hardiness across the various regions of Canada.

Preliminary results indicate that the average change in Canada's temperature is approximately 1.7 degrees Celsius, with the predominant effected regions being the Midwest and Northern regions of Canada, which have seen changes upwards of 2.5 degrees. This would have drastic effects on subarctic of Coniferous and Dwarf trees that call the region home, such as the Siberian Larch, Scots Pine, and the endangered Aleutian Shield Fern.

## **The impact and experiences of organizational compassion in healthcare contexts: a mixed-method systematic review**

Presenter: Oluwamisimi D. Oluwole

Contributors: Agnès Alsius, Mukemil Awol, Kemal Jemal, Jacoba Lilius, Alexandra Lawrynuik, Danielle Macdonald, Erna Snelgrove-Clarke, Amanda Ross-White, Jacqueline Galica

Faculty Supporter: Dr. Jacqueline Galica, School of Nursing

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**Introduction:** Organisational compassion, characterised by empathy and support for employee well-being, has emerged as a potential buffer against the adverse effects of stressors in the healthcare system<sup>1</sup>. However, multiple factors like the impact of COVID-19 and burnout impedes its implementation<sup>2</sup>. Compassion has been shown to foster resilience and supportive work environments. This abstract outline a mixed-methods systematic review aimed at investigating the impact of organisational compassion on members of healthcare organisations as well as the experiences and understanding of compassion by healthcare leaders.

**Methods:** This review follows JBI guidelines for mixed-methods reviews<sup>3</sup>. Primary mixed-methods, qualitative and quantitative studies that investigated organisational compassion in all languages were included. Embase, CINAHL (EBSCOhost), MEDLINE (Ovid) were searched. Screening, assessment of methodological quality and extraction was done by two independent reviewers<sup>4,5</sup>. Critical appraisal was done using JBI tools and the results were narratively summarised<sup>5</sup>. Meta-aggregation through JBI SUMARI was used to synthesise qualitative reviews, and a meta-analysis of quantitative studies was done<sup>3</sup>. JBI's convergent segregated approach was used to integrate qualitative and quantitative results<sup>3</sup>. The findings of the quantitative studies were reported narratively.

**Results:** Seven qualitative and eight quantitative studies were included in the review. Findings showed that healthcare professionals' experiences of compassion at work correlated with enhanced job performance, increased compassion towards colleagues and patients, and improved mood states, promoting greater workplace commitment. In addition, organisational compassion necessitates commitment from both the organisation and individual workers. Hence, understanding its manifestation and experience in healthcare settings is vital for providing compassionate patient care and supporting healthcare professionals<sup>6</sup>.

### **References**

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## Exploring Saccade Velocity Variation in Response to Task Difficulty in a New Visual Search Paradigm

Presenter: Harry Parmar

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This study investigates the impact of task difficulty on saccadic eye movement velocity in macaque monkeys within a visual search paradigm. Saccades, rapid eye movements critical for visual acuity, are known to vary in peak velocity based on task conditions. We utilize a novel visual search paradigm, examining how task variables—specifically localizability and discriminability—affect saccadic velocity. Using a 2x2 factorial design, monkeys were subjected to tasks with varying levels of target localizability and cue discriminability. Saccade data from 99 sessions involving two monkeys (Le and Da) were analyzed using MATLAB R2023b. Peak saccadic velocity was measured and normalized for amplitude-dependent variations, isolating task-difficulty effects. Sign tests and ANOVA were employed to assess the statistical significance of variations in saccadic velocity under different task conditions. Results indicate a significant variation in saccade velocity relative to task difficulty. For Le, discriminability had a predominant effect, whereas for Da, localizability was more influential. These findings suggest that task difficulty, modulated through localizability and discriminability, can significantly affect saccadic behavior, potentially due to changes in arousal states. This has profound implications for fields requiring rapid visual assessment, such as surgery, where understanding the effects of task difficulty on eye movements could enhance decision-making processes and training methodologies. The study highlights the need for further research into individual variability in response to task complexity and the potential development of tailored training tools based on these findings.

## The Unspoken Theatre Contract: The unveiling of audience power relationships and its influence on audience behaviour

Presenter: Jenylle Rufin

Faculty Supporter: Dr. Kelsey Jacobson, DAN School of Drama and Music

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Discussions of theatre etiquette and reports of "unruly audiences" behaving badly have become commonplace in recent media, leading to discourse and debates around rights, responsibilities, and power relations at performance events. [1] Taking Michel Foucault's notion of power as a capillary that flows through all levels of society, my research focuses on analyzing the different flows of power within a theatre space and how these power relations influence the actions of audience members. Pulling from scholars such as Caroline Heim and Baz Kershaw, I begin by discussing the power dynamics present within the theatre space and the unspoken contract created between audiences and performers. Through this analysis, we see how this ever-changing power relationship influences how the audiences act within the theatre space and the sense of responsibility felt by the audience to act in what they might presume to be the performance's best interest. I then pull from the work of Kirsty Sedgman's *The Reasonable Audience* and Hannah Simpson to analyze and discuss the power dynamics present within the audience's relationship with each other, how the unspoken theatre contract creates a communal relationship between audiences, and how this relationship further continues to influence the audience behaviour; discussing the notions of theatre etiquette and the policing of fellow audience members. This research also uses audience data from Dr. Kelsey Jacobson's *Being Together* interviews to support its argument. Understanding the power relationships present within the theatre space may offer

insight into the expectations placed on audiences, the actions of audiences, and whether such ideas are in fact 'reasonable.'

[1] Jessica Wang, "'the Bodyguard' Musical Cut Short Due to Rowdy Audience Sing-Along," EW, April 9, 2023, <https://ew.com/theater/the-bodyguard-musical-ends-early-sing-along-i-will-always-love-you/>.

Rachael Healy, "'We've Had to Stop People Fighting and Urinating in Their Seats': The Ugly New Side of Theatre Audiences," The Guardian, April 10, 2023, <https://www.theguardian.com/stage/2023/apr/10/bodyguard-police-fighting-urinating-seats-ugly-new-side-of-theatre-audiences>.

## **Application of building a learning style to accommodate empathy in instructor and staff approaches, methods and conditions leading to positive student mental health in academic environments**

Presenter: Shafagh Razaghzadeh Shabestari

Faculty Supporter: Jennifer Ross, Kathryn Humphrys

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**Introduction:** Empathy in academics involves the social determinants of health and holistically considering the barriers to existing resources. Given the ripple impact of the pandemic, students report higher demand for mental health resources and an increase in mental health disorders compared to prior years, evident across Canadian campuses. Studies have proven that low mental health can lead to new or increased mental illness. Thus, the Champions for Mental Health (CMH) project was created at Queen's University to assess academic role models in promoting continual support for student wellness and mental health.

The first (2021-2022) CMH project showed conditions in which students identified academic role models to be supportive and promote student well-being. Analyzing the trends among the nominations, we will determine what is considered an empathetic instructor or staff according to their mental health approaches, methods, and conditions.

**Approach:** Twenty/thirty previous nominees from the CMH project will be contacted via a questionnaire and invited to an interview to identify methods, approaches and conditions that support students' mental health and well-being. These methods will be categorized from most to least influential, with case studies.

**Results:** As an ongoing project, we expect many nominees to have similar strategies in implementing mental health/wellness resources with trends regarding accommodations, waitlists for health professionals, and barriers in education.

**Implications:** The research will be critical to understanding whether Queen's University supports student well-being and the limitations restricting faculties from applying further resources. The study will identify case studies as examples of successful student support and mental health methods. This information is detrimental to future educators in Canada who can strategically implement these pre-existing and student-approved methods for well-being in academics.

## **The effects of sex and aging on the systemic profiles of exhausted T cell and regulatory myeloid cell subsets in a carcinogen-induced, pre-treatment murine model of non-muscle invasive bladder cancer**

Presenter: Keshav Sharma

Faculty Supporter: Dr. Madhuri Koti, Biomedical and Molecular Sciences

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**Introduction:** Studies on the tumour immune microenvironment (TIME) of non-muscle invasive bladder (NMIBC) cancer suggest that the disease is sexually dimorphic. Although NMIBC is 4 times more prevalent in men than women, female patients respond poorly to BCG immunotherapy and experience shorter recurrence- and progression-free survival than their male counterparts. At an average age of 73 years at diagnosis, NMIBC is also an age-associated malignancy. Both of these processes contribute to local immune exhaustion, more so in older people and females; however, it has not yet been determined whether this phenomenon occurs at a systemic level.

**Methods:** To address this gap in knowledge, male and female URO-OVA mice of varying ages were exposed to a carcinogen called BBN to induce NMIBC. After 7 and 9 week timepoints, these mice were sacrificed, their spleens were extracted to create a single-cell splenocyte suspension. Using multiparametric flow cytometry, the proportions of exhausted T- and myeloid cell subsets were determined.

**Results:** An increase in the frequencies of several T cell subsets (PD-1+CD4+, PD-1+CD8+, and CD4+CD8+ double-positive) and myeloid cell subsets (CD11b+PD-L1+) was observed in carcinogen-exposed mice compared to healthy control mice. Moreover, an increase in the aforementioned subsets was noted in aging mice compared to their younger counterparts, as well as in the female mice (both young and old) compared to their male counterparts.

**Discussion:** Immunosenescence and a X-linked bias in the generation of a Th2 phenotype appear to be responsible for the higher proportion of exhausted T- and myeloid cell subsets in aging and female mice, respectively. The reason for the greater proportion of CD4+CD8+ double-positive T cells in aging mice appears to be another phenomenon associated with immunosenescence, although the reason(s) for the sex disparity is/are unclear.

**Conclusions:** Age- and sex-associated alterations to systemic immune physiology in response to chronic BBN carcinogen exposure suggest that both factors are extremely important considerations in preclinical studies for emerging and novel immunotherapies.

## **Does Vaping Impact Cardiovascular and Sleep Parameters in Young Adults?**

Presenters: Claerwen Sladen-Dew, Sara Di Luch, Sawsan Haider, Margie Pigott, Meghan Watson

Contributors: Matthew James, Curtis Oleschuk, Sandra Vincent, Martin Kaufmann

Faculty Supporter: Dr. Nicolle Domnik, Biomedical and Molecular Sciences

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**Introduction:** E-cigarette usage has increased significantly in recent years among non-smoking young adults. While long-term cigarette smoking negatively impacts heart rate (HR) and heart rate variability (HRV), blood pressure, and sleep, it remains unknown whether e-cigarettes produce similar effects in otherwise-healthy young adults. Nascent evidence suggests individuals who vape have lower self-reported sleep quality, but the impact of vaping on objective sleep quality is unknown. While vaping acutely alters heart rate, it is unknown whether a history of vaping impacts heart rate regulation. We will, therefore, investigate the impact of vaping on heart rate regulation and objective sleep quality in 60 healthy young adults (age 18-30).

*Methods:* Vaping and age-/sex-matched non-vaping young adults (no-smoking history) will participate in the following protocol: medical and vaping history, urine sample for nicotine and cotinine (stable nicotine metabolite) quantification, in-lab assessment of cardiovascular function [heart rate, heart rate variability (Polar strap and KubiosHRVpremium), and blood pressure (Caretaker)] during regular and standardized paced breathing. Participants will then be provided with a wearable heart rate monitor for continuous, 24-hour recording and a self-applied level-2 sleep study device (Cerebra Prodigy) for at-home measurement. The following day, participants will return the wearable equipment and repeat urine collection and cardiovascular tests. Non-vaping participants will complete this protocol once, while vaping participants will complete it twice: once without vape restriction, and once with no vaping allowed, in randomized order. Comparisons will be made between vaping participants versus non-vaping controls, and (within vaping participants) between vaping versus non-vaping visits.

*Implications:* This project will characterize the impact of vaping on cardiovascular and sleep outcomes in healthy young adults, addressing a key knowledge gap in an age group with prevalent vaping behaviour. These findings will be critical to inform public health and policy moving forward.

### **Assessing the Economic Impacts of Sargassum Seaweed on the Tourism Industries of Quintana Roo and Belize**

Presenter: Noa Sliwa

Faculty Supporter: Dr. Neal Scott, Department of Geography and Planning

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**Introduction:** Sargassum is an algae that has been washing up on Caribbean beach fronts in recent years because of human effects on the environment. Since 2011, Sargassum has been growing and collecting on shores in growing amounts and creating piles of decomposing brown algae that smell very strongly and impact tourism. Hotels, governments, and local businesses have been paying thousands to clean up the beaches. The majority of the impact of the algae has been around the tropical Atlantic, the Gulf of Mexico, and the Caribbean. I want to measure the impact that this sargassum algae has had on tourism in Mexico and Belize, particularly Cancun, Tulum, and San Pedro.

**Methods and Approaches:** I will be using local tourism data including flight numbers, tourism dollars spent, property values, commercial value, profit of hotels, local news, and booked rooms in hotels, all from various sources and various locations. I will attempt to see if the numbers decrease through the years, taking into consideration the obvious drop in tourism during COVID-19. As well, I will attempt to quantify Sargassum blooms in the Caribbean using multispectral image analysis and plotting it against tourism.

**Findings and implications:** So far, with the information I have gathered, sargassum seems to not have an impact on tourism. Tourism seems to be at an all-time high. Local governments have been heavily advertising other tourist activities like Mayan ruins, cenotes, pools, and more to attempt to pull the tourists away from the beach. As well, hotels are spending thousands of dollars on beach cleanup to limit the unwanted sights and odors associated with Sargassum. I will make overarching conclusions and predictions.

### **Effects of the Alberta Floods of 2013 on Bow River Water Chemistry**

Presenter: Hunter Stolarek

Faculty Supporter: Dr. Neal Scott, Department of Geography and Planning

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While severe flooding can cause significant property damage, the impact of flood events on water quality is not well understood. In June and July of 2013, southern Alberta experienced the worst flooding that the region had

seen for over 100 years.<sup>1</sup> Several rivers in and around Calgary flooded, including Bow River, which experienced the worst flooding.<sup>1</sup> My research uses publicly available data from Alberta's Water Quality Data Portal and Environment Canada to investigate the impact of flooding on water chemistry variables and the relationships between them. Since Bow River provides 60% of the drinking water for Calgary<sup>2</sup>, water chemistry changes could have economic and public health implications, as well as possible negative ecosystem effects. Furthermore, with floods increasing in frequency and severity in conjunction with climate change, results from this research will become more important in the future.<sup>3</sup> The variables investigated are pH, phosphorus, turbidity, chlorophyll a, dissolved organic carbon, chlorine, copper, fluoride, dissolved oxygen, and nitrate nitrogen. Monthly data for each of these variables was plotted between 2008 and 2018 to gain an understanding of the trends of each element in the river water before and after the flooding. Linear correlation tests were completed for several variables using the data gathered in 2013. Data for nearby Athabasca River, which remained unflooded, was also processed and is used as a control. Among the significant findings was a strong correlation between turbidity and phosphorus in Bow River in 2013 ( $R^2 = 0.956$ ). Both variables reached their peak for the 2008-2018 period during the 2013 flood, while they showed no rise or correlation in Athabasca River ( $R^2 = 0.082$ ). Neither river showed a significant correlation between phosphorus and dissolved oxygen, conflicting with expectations since these two variables have been found to be negatively correlated in several other studies.<sup>4</sup>

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## Less Isn't Always More: Dual Polarity Mass Spectrometry Imaging (DPMSI) Reveals More Actionable Data than Single Polarity Scans

Presenter: Rachel Wood

Contributors: Malek Hassan, Rachel L. Theriault, Randy E. Ellis, Kevin Ren, and Richard D. Oleschuk

Faculty Supporter: Dr. Richard Oleschuk, Department of Chemistry

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Mass spectrometry (MS) is an analytical technique that allows analysis of metabolites in a variety of clinical samples. MS can be used either in positive or negative mode to detect cationic and anionic metabolites respectively. Nevertheless, it also allows for the spatial assignment of metabolites, resulting in the visualization of chemical image, which is known as mass spectrometry imaging (MSI).

Most clinical samples are stored as Formalin-Fixed Paraffin-Embedded (FFPE) tissues, which is preferred over other tissue preservation techniques. FFPE samples are considered the gold standard for histological analysis. FFPE samples have fewer storage requirements and are readily available in tissue banks. However, their outer preserving wax (i.e., paraffin) makes it more challenging to directly analyze without the use of harsh conventional dewaxing methods.

A modified version of the Liquid Microjunction - Surface Sampling Probe (LMJ-SSP) is used for the direct analysis of FFPE samples in both negative and positive polarities, providing a more comprehensive understanding of the sample (Renal Cell Carcinoma). Furthermore, the dual polarity analysis can be done

simultaneously, rather than sequentially, by alternating the polarity of the mass spectrometer during the analysis.

The probe (i.e., LMJ-SSP) is mounted on a 3D printer's extruder, acting as an autosampler, allowing for grid pattern scans of the sample. The collected data were compared in terms of combined and singular polarity to the reference histological analysis, for the determination of cancer (i.e., neoplastic) and non-cancerous (i.e., non-neoplastic) regions of tissue. Some metabolites prefer a certain polarity over the other based on their chemical structures, and therefore combining the data from both polarities improved the agreement between MSI and the histological analysis of the tissue in terms of regional assignment. This approach will be utilized to study more challenging clinical samples where single polarity data cannot accurately distinguish regions of the tissue.

### **Hybrid *P. ostreatus* Mycelium Extract and Collagen-Alginate Composite Hydrogel Scaffold for Microbial Infection Prevention and Accelerated Wound Healing in Early Stage Chronic Diabetic Foot Ulcers: A Research Protocol**

Presenters: Jin Xuan (Susan) Zhou, Katelyn Wu, Seungeun (Sophia) Kim, Isabella Ji

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Diabetic foot ulcers (DFUs) are a prevalent and often chronic complication in patients with diabetes, characterized by open sores or lesions on the feet. DFUs can progress from early stage non-infected lesions to late-stage full-foot gangrene. Often, DFUs recur and result in severe complications, accounting for more than 80% of amputations amongst diabetic patients. DFUs are highly susceptible to microbial infections, with *P. aeruginosa*, *E. coli*, *S. aureus* and *C. albicans* being some of the most common bacterial and fungal pathogens identified. Additional factors contributing to the prolonged healing period and high recurrence rate include dry skin and necrosis. Current preventative measures and medical solutions are lacking, causing the average healing period of DFUs to range from 12 to 13 months. Thus, the proposed approach incorporates the mycelium strain *P. ostreatus* with collagen-alginate composite hydrogel to synthesize a novel mycelium-hydrogel scaffold for accelerated DFU healing. Sufficient evidence indicates that *P. ostreatus* exhibits significant antimicrobial properties against common pathogenic species in diabetic foot infections, including *P. aeruginosa*, *E. coli*, *S. aureus* and *C. albicans*. Hydrogel in the scaffold promotes autolytic debridement and maintains a moist environment for cell migration. Integrating collagen and alginate with the mycelium-hydrogel scaffold provides biocompatibility for tissue regeneration and scaffold biodegradation, respectively. *In vivo* experimentation will take place in murine models to test the efficacy of the hybrid hydrogel-mycelium gelation scaffold in the prevention of microbial infections and acceleration of DFU healing. Efficacy will then be evaluated using mathematical models and statistical analyses.



## Presentation Session B: Nursing & Health II

Room 014, Stauffer Library

Thursday, March 7, 1:30-2:30

Moderator: Amanda Ross-White, Health Sciences Librarian

### Cultural Humility- Experience of a Nutrition Student at an African Clinic

Presenter: Youssef Elshaarawi

Faculty Supporter: Dr. Kateryna Metersky, Daphne Cockwell School of Nursing, Toronto  
Metropolitan University

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*Background:* Patients are more likely to adhere to treatment plans within therapeutic relationships when they feel holistically understood by healthcare practitioners, which can be achieved through cultural humility (Parker, 2010). Externships, particularly those with an international focus, present significant opportunities for students to cultivate and enhance cultural humility (Parker, 2010).

*Methodology:* The study utilized the qualitative methodology of Narrative Inquiry, coupled with self-study, to explore the experience of an undergraduate nutrition student's externship during the COVID-19 pandemic at a clinic in North Africa. The Narrative Reflective process was employed to collect data through artistic means.

*Results:* The data generated two narrative threads: self-reflection and care delivery constituents. The self-reflection thread highlights how immersion in a new healthcare setting, different from the participant's own, facilitates deeper introspection, increases awareness of biases, and improves relational practice compared to participating in externships in Canada. The care delivery constituents thread discusses the profound impact the externship had on the participant and the healthcare practitioner they aspire to be.

*Implications:* The research implications show how international externships challenge students to connect with their own culture and the cultures of others while examining preconceived thoughts to deliver quality care.

*Conclusion:* The study underscores the necessity of humility, social inclusion, and understanding one's competencies and abilities that can be gained through externships.

### Intensive Simulation Programs ("Boot Camps") for Health Profession Programs

Presenter: Laura Palermo

Faculty Supporter: Dr. Natalie McGuire, Faculty of Health Sciences

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**Background:** Literature suggests intensive simulation programs, also known as "boot camps," have been an effective way to improve clinical skills, knowledge, and confidence prior to practicing on patients.<sup>1</sup> Historically, much of this work has been completed in medicine.<sup>1</sup> However, with accreditation bodies and organizations expecting interprofessional collaboration in the clinical environment,<sup>2,3</sup> questions have been raised as to whether interprofessional boot camps may also be an effective means to prepare learners to work as a team in the clinical environment.<sup>4</sup>

**Objective:** To explore literature regarding interdisciplinary boot camps in health profession disciplines in North America, including medicine, nursing, physiotherapy, occupational therapy, midwifery, and paramedicine.

**Methods:** A scoping review using the five-stage Arksey & O'Malley framework was conducted.<sup>5</sup> Using PubMed, Omni, and Google Scholar, the inclusion criteria included studies that educated students, were published within the last 10 years, written in English, and based in North America. Articles were screened at the title and

abstract level, and later at full text prior to data extraction.

**Results:** A total of 19 articles were included for analysis. Most literature focused on discipline-specific boot camps in medicine, specifically surgery (n = 13); 5 papers described interdisciplinary boot camps; no papers described boot camps in other health disciplines. Of all the boot camps identified, most focused on technical skills, with only 8 papers (42%) including non-clinical skills. Eight papers (42%) discussed improved short-term student outcomes, while no articles measured long-term learner or patient outcomes. A lack of standardization in boot camp design and implementation was also observed.

**Conclusion:** While some evidence supports discipline specific boot camps, there remains a lack of literature exploring interdisciplinary boot camps. Future research is required to understand if such programs exist; and how those boot camps should be structured to be most effective.

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## **Deciphering the Influence of the Immune Environment on Trained Immunity Induction**

Presenter: Conrad Pietrzak

Contributors: Gabriella Stefan, Vidthiya Jeyanathan

Faculty Supporter: Dr. Eva Kaufmann, Biomedical and Molecular Sciences

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Trained immunity, or innate immune memory, is an epigenetically mediated trait in innate immune cells that leads to enhanced or dampened responses to secondary stimulation<sup>1</sup>. Long-term, epigenetic reprogramming is maintained centrally in hematopoietic stem and progenitor cells (HSPC) that pass it on to their deriving innate immune cells<sup>2</sup>. Importantly, innate immune reprogramming can have beneficial or maladaptive functional effects, depending on the initial stimulus and their initiated cytokine milieu<sup>3</sup>.

To date, the extent to which the host’s steady state immune environment impacts this stimulus-induced cytokine signaling, has not been investigated. The immune environment is determined by host genetics and chronic conditions, such as allergies or parasite infections that are highly prevalent across populations<sup>4,5</sup>.

In our study, we aim to elucidate the impact that immune phenotypes have on trained immunity induction by the fungal cell wall component  $\beta$ -glucan. To that end, we use mice with a genetic bias toward proinflammatory immune responses (C57BL/6) and mice with a pro-allergic immunophenotype (BALB/c). We demonstrate that 7-day  $\beta$ -glucan sensitization induces pronounced HSPC proliferation in BALB/c mice. Bone marrow-derived macrophages (BMDM) from  $\beta$ -glucan-sensitized BALB/c mice secrete more IL-6 and TNF $\alpha$  upon infectious and allergic stimulation than BMDM from C57BL/6 mice.

Our findings suggest that the genetically determined immune environment directs HSPC and innate immune responses upon trained immunity induction. Ultimately, understanding the impact of host genetics on innate immune functions will provide important knowledge for the clinical translation of trained immunity-targeting vaccinations.

1 Divangahi et al., *Nat Immunol.*, 2021; 2 Kaufmann et al., *Cell*, 2018; 3 Netea et al., *Nat Rev Immunol.*, 2020; 4 Gueders et al., *Inflamm Res.* 2009; 5 Cunningham et al., *J Immunol.*, 2021.

## **Fitness social media and Performance-enhancing drugs (PEDs): Studying the positive relationship between consuming fitness-related social media and the intent to use PEDs among young men**

Presenter: Rikizo Tamaki

Contributor: Dean Baltiansky, Columbia University

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The prevalence of performance-enhancing drug (PED) use has become an increasing problem, particularly among young men who resort to using PEDs in their quest for the ideal physique. A key factor contributing to this pursuit may be the increasing popularity of fitness-related social media. This poster aims to investigate the relationship between the consumption of fitness social media and the intent to use PEDs among young men aged 18 to 35 in the United States (US). Additionally, attitudes toward muscularity are studied to see whether it has any moderating role in this relationship. Specifically, the study assesses two hypotheses: (1) fitness social media positively predicts the intent to use PEDs; and (2) this relationship is stronger in individuals who value muscularity (i.e., idealized muscle size and definition). Our study examined 149 young men from the US. Data was gathered through a quantitative survey where questions were sorted into four randomly ordered measures where participants indicated (1) the average amount of time they spent on social media; (2) the percentage of social media use that was devoted to fitness-related content; (3) their intent to use PEDs; and (4) their attitudes toward muscularity. They also indicated their age and gender. Intent to use PEDs was measured using the 8-item Drive for Muscularity Attitudes Questionnaire (DMAQ) which is a well validated metric used in past studies, demonstrating good psychometric properties. Results indicated a higher likelihood of intent to use PEDs among young men who consumed fitness social media. However, we did not find that attitudes toward muscularity had any moderating role in this relationship. These findings emphasize the concerning influence fitness social media has on the illicit use of PEDs among young men and can help towards informing and guiding developments of targeted interventions aimed at preventing the harmful usage of PEDs.

### **Presentation Session C: Geography**

**Room 014, Stauffer Library**

**Thursday, March 7, 2:45-4:00**

**Moderator:** Hannah Tanna, Research & Instruction Librarian, Humanities & Social Sciences

## **Seasonal Analysis of the influence of Land-use on water quality parameters in the Grand River Watershed (2017)**

Presenter: Zixin Chen

Faculty Supporter: Dr. Neal Scott, Department of Geography and Planning

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The land use pattern within the Grand River Watershed, ON, Canada has undergone significant changes in the last 19 years as human activities have increased, which may adversely affect natural water bodies' water quality. In this study, the effects of land-use changes during the period 1999-2017 are examined to determine how these changes affect water quality parameters. A statistical analysis of 19 years of data (1999-2017) was conducted using SPSS statistical software, which included 7 water quality parameters recorded by 13 long-term monitoring stations as well as the area of four main land use types (agricultural, urban, mixed, natural). In

addition to the water quality data, the land use data comes from the Grand River Watershed Conservation Authority. The relationship between land use area and water quality parameters was evaluated using the Pearson correlation test. The correlation coefficients between unfiltered total phosphorus and agricultural land and urban area were found to be 0.812 and 0.813, respectively, and the P values were less than 0.001, indicating that the annual average value of total phosphorus increased significantly as agricultural land and urban areas increased. Furthermore, the correlation coefficient between annual mean of temperature and agricultural land area is 0.685, and the P value is 0.001, indicating that the annual average temperature of water increases as agricultural land area increases. Land use type changes, especially the expansion of agricultural land and urban areas, have been shown to significantly influence some water quality parameters in water bodies, according to the study. To maintain the quality of water resources, it is imperative to monitor land use patterns and formulate appropriate environmental management policies.

### **Effect of Peak Winter Snow Water Equivalent on Summer Discharge within the Lower Fraser River Basin**

Presenter: Harrison Morton

Faculty Supporter: Dr. Neal Scott, Department of Geography and Planning

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It is well understood that the patterns of winter precipitation in Western North America have been changing due to climate change. Within the Lower Fraser River Basin (LFRB) in British Columbia, there has been an increase in snow droughts each winter. This has led to increasingly smaller snowpack in the region. This decrease in snowpack is expected to cause changes to summer (June, July, and August) discharge patterns in higher order streams throughout the LFRB. Summer discharge patterns are key to successful spawning of salmon throughout the LFRB, and the expected changes are anticipated to alter these spawning periods. The primary objective of this study is to understand the magnitude of the effect that peak snow-water equivalent (SWE) has on summer stream discharge within the LFRB. The method for this study involves an in-depth analysis of both the peak SWE and average daily discharge for sub-basins of the LFRB. By using public data published by the British Columbia Government and the Government of Canada, the discharge is compared to peak SWE from 1992 to 2023 based on multiple sites around the LFRB. It is expected that the years with lower SWE will have a lower summer discharge, with values decreasing in an exponential manner. The implications of this understanding have vast impacts on the salmon fisheries that rely on spawn in LFRB, as well as the Indigenous Peoples of the area who rely on subsistence fishing.

### **Coastal Erosion on the Atlantic Coastline**

Presenter: Jacob Paquette

Faculty Supporter: Dr. Neal Scott, Department of Geography and Planning

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This research focuses on the coastal erosion of Canada's Atlantic coastline, specifically on the south shore of Nova Scotia. The project was inspired by the urgent worries about how erosion affects coastal communities, especially considering climate change. The goal is to examine trends and gather information to understand the rate of erosion and assess whether the coastline's condition has worsened over the years.

Because hurricanes and tropical storms primarily affect the Atlantic provinces, attention has been focused on the Atlantic coastline rather than the Pacific or Arctic. These storms' formation and movement are influenced by natural elements like the rotation of the Earth and ocean temperatures, which may have an impact on erosion rates. Certain towns and villages on Nova Scotia's south shore are reliant on fishing and tourism for their economy, and they have a rich maritime history. These places will be important research areas. With issues like sea level rise and coastal erosion, the area needs to have its vulnerability carefully assessed.

The thesis statement centers on the analysis of erosion patterns in Canada's Atlantic coastline, emphasizing the need to understand contributing factors, assess community impact, and formulate effective mitigation strategies. Research questions delve into historical erosion patterns and projected sea level rates, utilizing Geographic Information System (GIS) and aerial imagery to analyze the south shore's erosion trends over the years.

Data from multiple sources, such as historical documents, satellite images, and aerial photos, are gathered for the methodology. GIS analysis will make it possible to quantify erosion trends and track how the shoreline has changed over time. The project's goal is to illustrate the extent of erosion, and its expected results will provide information regarding the harm that rising sea levels cause, which will be useful for environmental conservation and community planning.

### **Analyzing Land Cover Dynamics and Carbon Flux: A Case Study of Ontario, Canada**

Presenter: Sophie Whitehead

Faculty Supporter: Dr. Neal Scott, Department of Geography and Planning

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Ontario has undergone significant land-cover transformations driven by urbanization, agricultural expansion, and natural processes. Land-cover change CO<sub>2</sub> emissions, primarily stemming from deforestation, were most pronounced in Ontario and Quebec during 2010-2015. During these five years, 1150 km<sup>2</sup> of forest was converted to cropland or settlement in Ontario and Quebec, representing 38% of Canada's overall deforestation (<https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/land-use-change.html>). These changes have implications for CO<sub>2</sub> emissions and sequestration and could influence Ontario's greenhouse gas emissions profile yet are not currently reported at the provincial level for recent years. Understanding the regional interplay between land-cover change and CO<sub>2</sub> flux to the atmosphere is therefore necessary for informed environmental management and policy development in Canada. This study investigates the impact of land-cover change on Ontario's carbon budget from 2015 to 2020. Using historical land cover data, satellite imagery, and carbon flux models, this research reveals patterns, drivers, and change hotspots in Ontario's carbon budget. In 2015-2020, Ontario represented 10% of Canada's gross forest CO<sub>2</sub> emissions (MgCO<sub>2</sub>) but accounted for 18% of Canada's average annual carbon sequestration (forest carbon gross removals, Mg CO<sub>2</sub>/year) between 2001-2022 while both experienced a net negative flux (sequestration) of CO<sub>2</sub>. From 2015-2020, Timiskaming and Sudbury counties saw the greatest per hectare forest CO<sub>2</sub> emissions as well as the greatest tree cover loss. Haliburton and Nipissing counties sequestered the most CO<sub>2</sub> per hectare in this period. By integrating remote sensing and field-based data via GIS, this project offers valuable insights into Ontario's ecosystem services, facilitating targeted national-level mitigation efforts that include land-cover change impacts on net greenhouse gas emissions. When combined with land use change knowledge, these results can guide land management decisions and support programs such as Forests Recovery Canada who aim to enhance provincial carbon capture.

### **Evaluating Urban Expansion and Land Cover Dynamics in Canada: A Landsat Time Series Analysis (1985-2023)**

Presenter: Tianshu Yin

Faculty Supporter: Dr. Neal Scott, Department of Geography and Planning

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Since 1980, Canada has experienced a remarkable population growth, escalating from 25 million to over 40 million within four decades. Concurrently, urban areas have expanded significantly, outpacing population growth, particularly in its six largest cities: Toronto, Montreal, Vancouver, Calgary, Ottawa-Gatineau, and Edmonton. This rapid urbanization has led to substantial environmental changes, including the loss of prime farmland and open spaces, potentially heightening food insecurity risks. Despite the well-documented impact of urbanization on land conversion, methods for mapping regional-scale land transitions remain limited. This

study leverages Landsat time series data to investigate peri-urban land use transitions and assess urban expansion's spatiotemporal patterns and associated land cover changes in Canada's Census Metropolitan Areas (CMAs). Utilizing the Google Earth Engine (GEE) platform, this research constructs a 38-year time series (1985-2023) using spectral indices such as the Normalized Difference Vegetation Index (NDVI), Normalized Difference Built-up Index (NDBI), and Built-up Index (BUI) derived from Landsat 5, 7, and 8 data. These indices facilitate a detailed examination of urban sprawl's impact on converting farmland and natural landscapes into urban built-up areas. The study addresses two primary questions: the extent of peri-urban land cover type changes within CMAs and the quantity of high-quality agricultural and natural lands transformed into built-up areas. Findings reveal that over 50% of new urban and peri-urban growth from 1985 to 2023 occurred on agricultural land in Canada's six largest CMAs. Through the application of zonal statistics methods, this study successfully identifies predominant land cover classes, enabling a comprehensive understanding of landscape transformations and urban development dynamics. The use of GEE and Landsat time series data proves effective in continuously monitoring land cover dynamics with high accuracy, highlighting the critical role of remote sensing in urban planning and environmental management.

End of Day 1

## Presentation Session D: History & Religion

Room 014, Stauffer Library

Friday, March 8, 9:05-10:20

Moderator: Nathalie Soini, Education Librarian

### Reading Arabic Love Poetry as a Source of Social History: A Study of Ibn Hazm's *Ring of the Dove*

Presenter: Mariana Garic

Faculty Supporter: Dr. Mehmet Karabela, Department of History

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This paper examines the eleventh century Andalusian Muslim polymath Ibn Hazm's *Ring of the Dove*, and his use of love poetry to portray forbidden and unachievable romantic relationships, particularly between individuals from different ethnicities. Through this medium, Hazm expresses a deep yearning for Islamic culture in Al-Andalus as well as genuine sentiments about love. Along with primary source material, this paper incorporates modern scholarship that illustrates how Arabic poetry can be utilized to analyze *Convivencia*. Furthermore, by employing themes such as nostalgia and longing resulting in suffering throughout their literary narrative arc - often attributed to tribulations experienced within intense emotional connections - these poems serve not only artistic but societal purposes too. Therefore, I approach literary texts not solely as pieces of intellectual history but rather tools through which we can examine social history of the Iberian Peninsula.

The literary genre of love poetry has been characterized by suffering arising from unfulfilled nostalgia and longing. Within this tradition, Hazm's poetic oeuvre established archetypes such as love as an affliction or a hidden passion, and the link between desire and sin. Although many of Hazm's works are concealed in metaphors, my paper will attempt to deconstruct these figures of speech by placing them within the historical context of Medieval Iberia--specifically between the eleventh century until Muslim rule ended. I demonstrate how there was an intense desire in the medieval Al-Andalus to experience relationships with people who belonged to different races, suggesting that miscegenation had become prevalent in the eleventh century.

### An Empire Built Behind Closed Doors: An Examination of Spanish Diplomacy in the Sixteenth Century and the Making of Catholic European Hegemony

Presenter: Joshua Kautto

Faculty Supporter: Dr. Mehmet Karabela, Department of History

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This paper examines the aim of 16th-century Spanish diplomacy and shows how it aimed to dominate European Catholicism. Specifically, it focuses on King Charles V and King Philip II's reigns during this period as they provide prime examples of Spain's strategic plan to control both the papacy and broader ecclesiastical landscape in Europe. Through the research question "How can one evaluate the ambitions of Spanish diplomacy in the sixteenth century and its effect on European ecclesiasticism and politics?", this paper examines political changes occurred while analyzing its impact across Europe's religious-political landscape during that period.

Acknowledging that a basic analysis of sources would not suffice to produce original and valuable scholarship, I cross-examine and synthesize my primary and secondary sources by adhering to historical research procedures. Through careful examination of sources, this paper aims to demonstrate that Spanish diplomacy ambitions extended beyond church hierarchy status quo pursuing their hegemony through diplomatic channels which reshaped global Catholicism.

This research offers a new perspective on this topic that has not been extensively explored in the past. It will shed light on how Spanish diplomacy operated and redefined perspectives concerning the papacy's control

over Catholic nations during the sixteenth century. Previous studies tend to portray the relationship between Catholic nations and the Papacy as unchanging, with respect for papal centrality being their highest priority; however, they fail to acknowledge divergent perceptions of power dynamics within devoutly Catholic countries. Therefore, through this study, I aim to challenge such notions by illustrating how even staunchly Catholic countries sought power over Rome itself - an aspiration interwoven within these powerful empires' discourse about global dominance alongside faith supremacy. Furthermore, holding diplomatic authority over the papacy not only provided an avenue toward global Catholic supremacy but also served as a potential goal for mighty Catholic empires - something previous scholarship have underestimated until now.

### **The El Libro Verde de Aragón and the El Tizón de la Nobleza: The Catholic Church's Political Leverage Against the Spanish Monarchy**

Presenter: Molly McGill

Faculty Supporter: Dr. Mehmet Karabela, Department of History

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On the subject of church and state interaction in late medieval Spain, this essay will attempt to argue that the many genealogical records kept by the Catholic Church served as their political weapon against powerful adversaries. The Church kept vast records of Spanish genealogy for the purpose of cataloguing Semitic heritage, or as they were concerned with, Semitic blood. These files were systematically used by the Church against Christians accused of heresy during Inquisition trials and, as primary sources will show, against royal political opponents. El Libro Verde de Aragón (The Green Book of Aragon), a manuscript written in 1507 by an unknown employee of the Church listed the bloodline of the Aragonese nobility, highlighting their Semitic heritage, among other topics. El Tizón de la Nobleza: O Máculas y Sambenitos de sus Linajes (The Stain of the Spanish Nobility: Or the Blemishes and Disgraces of Its Lineages) written by Cardinal Francisco Mendoza de Bobadilla in 1560 is a similar work to that of El Libro Verde de Aragón, except it exclusively deals with the lineage of King Philip II of Spain, highlighting his family's Semitic heritage. These manuscripts will be analyzed with an informed understanding of the social and political history of late medieval Spain, contextualized through the converso experience. Primary sources that were published by the Spanish Monarchy, the Catholic Church, and employed official historians will be referred to, as well as secondary sources on official histories, Spanish literature, the Jewish experience, Inquisition records, genealogical works, and *limpeiza de sangre*. Although many of the genealogical works produced by the Church were collected and destroyed in the seventeenth century, the surviving manuscripts certainly demonstrate that the church had immense autonomous power, riveling that of the King.

### **Plague and Historical Memory: The Impact of the Black Death on Jewish Communities in Europe during the 14th century with a focus on the Poison Theory**

Presenter: Emily Scott

Faculty supporter: Dr. Mehmet Karabela, Department of History

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The Black Death, also known as the Bubonic Plague, ravaged Europe from 1347 to 1351 and had catastrophic effects not just on physical health but also on social structures, economies, and belief systems. One theory about what caused this pandemic is that it was spread intentionally by poisoning wells, thus leading to widespread blaming and persecution, particularly targeted towards Jewish communities who were falsely accused of being responsible for spreading disease through their alleged expertise with poisons. As a result of these accusations against Jews across Europe during the Black Death era, they suffered violence.

This paper will examine various geographical perspectives on the Black Death and utilize Bubonic Plague origin theories, which have had a negative impact on collective historical memory. Moreover, it will delve into the



religious, economic, and societal implications faced by Jewish communities in the past and how they manifest in contemporary historical narratives such as COVID-19. By adopting this approach, the objective of this paper is to draw a connection between the aftermath of the Black Death and how Jews were made into scapegoats, leading to increased hostility and oppression towards Jewish communities in the Medieval Mediterranean. This approach highlights similarities with victimization experienced by Asian communities during COVID-19.

### **Remembering al-Andalus: The Legacy of Islamic Spain in the Cultural Products and Traditions of the Spanish Caribbean**

Presenter: Thinugi Wickramasinghe

Faculty Supporter: Dr. Mehmet Karabela, Department of History

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The year 1492 marked the beginning of one Spanish conquest and the end of another: that of the Americas and al-Andalus, respectively. Although the Spanish conquistadors made many efforts to restrict Muslim immigration to the Americas — it was believed that their presence would impede Catholic evangelization efforts — Moriscos still managed to establish a significant presence in the New World. Although Latin America is, at present, predominantly Catholic, Islamic influences manifest in art and architecture produced throughout the region and by its diaspora. Many Muslim converts of Spanish Caribbean heritage see themselves as descendants of the Moriscos and enslaved African Muslims; they view their conversion as a reversion to the religion of their ancestors. This narrative presents a Muslim-centred historiography of Latin America. While scholars such as Christina Civantos have touched upon how al-Andalus is memorialised in Latin American literature, Arab and Spanish narratives are typically pushed to the forefront of discourse surrounding the collective memory of Islamic Spain. My research aims to illuminate the often understated connection between the Spanish Caribbean and al-Andalus by examining works of literature from the 19th, 20th, and 21st centuries, contemporary hip-hop songs, and a festival that has been celebrated in Latin America since the arrival of the Spanish. All of these products of culture and tradition make reference to Islam, Arabs, al-Andalus, or all three. They reveal not only that the legacy of al-Andalus manifests within them, but that it has imparted a cultural image that remains fixed in the historical memory and identity of these communities that have had no direct interactions with it.

### **Presentation Session E: Music & Drama**

**Room 014, Stauffer Library**

**Friday, March 8, 10:35-11:20**

**Moderator:** Cory Lavery, Research & Teaching Librarian: Art, Drama, and Music

### **Analyzing Compositional Style in the Music of *The Legend of Zelda: Ocarina of Time***

Presenter: Dominic Everitt

Faculty Supporter: Dr. Stephanie Lind, DAN School of Drama and Music

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The soundtrack of *The Legend of Zelda: Ocarina of Time* is rife with innovative musical techniques which facilitate player engagement and interactivity. The composer Koji Kondo's unique style, which often includes the use of modes, chromatic harmony, parallel motion, and proximal voice leading, differentiates this game from others of the same era and efficiently communicates narrative information like emotion, setting, and trope. These musical topics make Kondo's works distinct and recognizable and contribute to the game's overall goal of immersion. Analyzing several of Kondo's works as case studies, similarly effective stylistic topics can be

implemented in original compositions to accomplish the same feats. The purpose of the project is to develop my personal compositional style which is audibly identifiable while also functioning as nuanced game music. Some of these nuances include the added challenges of player engagement and the necessity of continuous music; the duration of the music is not predetermined like a live performance or film score. Achieving this goal involves the analysis and recreation of Kondo's original works, including simulating the limitations of the 1990s game console hardware. Also, to modernize the findings of this project, similar analysis and experimentation is applied to works of other composers, exploring the growth and changes in game music composition throughout the past several decades. The culmination of this research is my own body of original compositions, including both acoustic and digital pieces of music and a live interactive suite for medium ensemble, which aim to achieve the goals outlined above.

### **The Mixed-Race Baby: The Possibility for Queer Futurity in East-Asian Canadian Drama**

Presenter: Benjamin Ma

Faculty supporter: Dr. Anthea Fitz-James, DAN School of Drama and Music

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The performance of racial difference at the intersection of global emergency (the pandemic) and fear (mis and disinformation) has (re?)invigorated an industry-wide audit of the Western theatre canon to investigate the assumption of Whiteness and patriarchal power systems in performance. The Western theatre canon is largely comprised of stereotypes of the exoticized, feminized, and conquerable East compared to the heroic, paternalistic, expansive West (Said, Tian, and Lim). To make sense of this, this paper puts my own lived experience (as a gay, half-Chinese, and cis-gendered settler), in conversation with the re-displacement of *Madama Butterfly* through colonial re-telling (*Miss Saigon*) and East-Asian clap-backs (*untitled f\*ck m\*ss s\*\*gon play, M. Butterfly*). Although the *Madama Butterfly* narrative has been analyzed in other works (Hwang, Lee), this paper investigates the often ignored mixed-raced baby as a symbol of queer futurism. In each rendition of *Madama Butterfly*, the offspring between the Asian woman and white man serves as nothing but a plot device or prop, the product of the West's violent exploitation and exploration of the East. Narratively and in theatre theory, the baby is left to suffer a fate like his mother: unwritten and unimportant. In this paper, I will turn to the history of East-Asian representation (and diaspora) in North America to understand how historiography has failed to account for the wholly intersectional and complex character that grows up to be the mixed-race baby. Ultimately, this paper explores the baby as an image of queer futurity (following Jose Muñoz), to open a space for intersectional identities (specifically queer, mixed and Chinese) in performance and representation. This research is especially timely given the recent rise in both anti-Asian and queer hate.

### **Narrative, Ironic, and Aesthetic Applications of Pre-Existing Music in Video Games**

Presenter: Avery Marcella

Faculty supporter: Dr. Stephanie Lind, DAN School of Drama and Music

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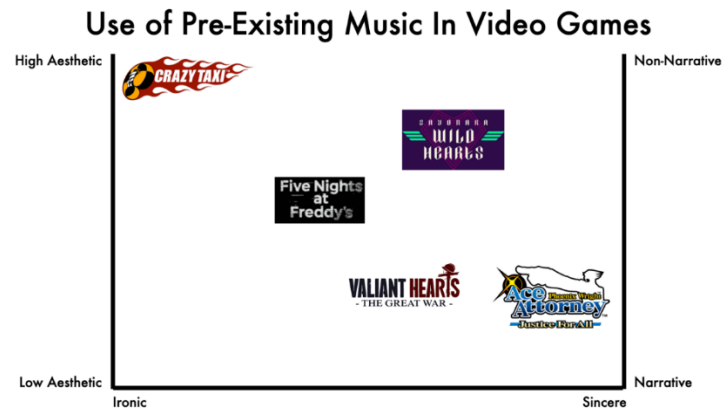
According to William Gibbons, video game designers often choose pieces to convey the right information to players. While frequently accomplished with newly composed music, pre-existing music is often employed in ways that aid our comprehension of the game's themes, whether or not players understand the full context.<sup>1</sup>

For instance, as shown in the chart below, rhythm game *Sayonara Wild Hearts* (2016) uses *Clair de Lune* in a clearly aesthetic fashion to build the ethereal nature of the gameworld. *Phoenix Wright: Ace Attorney – Justice for All* (2002), meanwhile, employs Bach's *Tocatta and Fugue in D Minor* purely as a sonic signifier, minimizing any attempt at building aesthetic. *Valiant Hearts: The Great War* (2014) uses *Hungarian Dance No. 5* as a sincere

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<sup>1</sup>Gibbons, *Unlimited Replays*, 23, 106.

method of raising tension during a chase sequence, while *Crazy Taxi* (1999) implements popular 90s grunge music to parody contemporaneous racing games. In terms of narrative, however, *Crazy Taxi* has little to none. Contrastingly, *Phoenix Wright* uses the *Toccatina and Fugue* almost exclusively as a narrative tool. Its tutorial case features Bach's work as both a one-measure chiptune ringtone and an abridged organ piece. Its usage is narrative, signifying the antagonist's faux intellectualism and impending doom. Additionally, its application is mostly sincere, with a hint of situational irony due to its incongruity with the setting and rest of the soundtrack. These axes will provide a point of comparison for discussing the narrative function of game music in differing contexts.



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## Presentation Session F: History II

Room 014, Stauffer Library

Friday, March 8, 1:00 -2:00

Moderator: Jesse Baker, Research, Instruction & Online Learning Librarian

### The Historical Erasure of the W8banaki Nation in the Eastern Townships of Quebec

Presenter: Arianne Ettehadieh

The history of the W8banaki Nation, semi-nomadic hunters, fishers, and gathers from the Algonquian language family, has been frequently misrepresented by colonial-era histories. The Ndakina, which means "our territory," in the W8banaki language, includes what is today known as Quebec, Maine, Vermont, New Hampshire, and parts of Massachusetts and New Brunswick. However, European colonization condensed this vast homeland into two separate reserves in southeastern Quebec. One of these is Odanak, a 6km<sup>2</sup> parcel of land on the shore

of the Saint-François River, near Drummondville. The second reserve, Wôlinak, is situated 50km farther east on the Bécancour River.

Some historians today do not consider southeastern Quebec the ancestral territory of the W8banaki Nation. They believe that eighteenth-century colonial wars, disease, and famine drove the population to seek “refuge” north of their well-documented territories in Maine and New Hampshire. This project will question the historical erasure of the W8banaki Nation in Quebec using historical research and a multidisciplinary approach. European travel narratives are examined to retrace W8banaki subsistence patterns, alliances, conflicts, and locations through the eyes of European explorers and missionaries.

In conjunction with these descriptions, recent archaeological discoveries show that the network of rivers and lakes within the Ndakina were well-traversed by the W8banaki before European contact. The toponyms associated with these important waterways in Quebec, closely resemble W8banaki language terms, indicating the W8banaki Nation’s long-term presence in the area. Additionally, important frameworks established by Indigenous historians recognize the important cultural kinship ties between the W8banaki, Haudenosaunee, Anishinaabe, and Innu peoples. The proximity and overlapping territories fostered ancient relationships seen in their parallel subsistence patterns, trade networks, and conflicts. Overall, this project brings to life the very real and legitimate ancestral presence of the W8banaki Nation in southeastern Quebec, while also enlightening the reader on Canada’s colonial roots.

### **The Real Housewives of the Confederacy: How the United Daughters Kept “The Cause” Alive**

Presenter: Reagan Feld

Faculty Supporter: Dr. Rosanne Currarino, Department of History

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Throughout the United States South, there are numerous references to the Confederacy. The credit for these lay with a group of white women, the United Daughters of the Confederacy. Established in 1894, the UDC’s emergence did more than reinforce memories of battlefield heroics and care for the men who were credited for them. The UDC amplified the political voices of married white women in the South, at a time when women were barred from voting. As we will see, they represented empowered voices of women – in a sense feminist voice – through their message was how best to build an infrastructure of racism.

What developed was an iron triangle of white supremacy – culture, law, and power – and it was the Daughters who connected the vertices through a combination of white militant feminism and genteel persuasion. This research paper will examine how the UDC effectively marshaled women’s extra-political power to deny rights to Black Americans and strengthen white supremacy in the South. By studying the UDC’s empowerment of white women, this study contributes to the histories of modern feminism. By following the UDC’s program of educational reform and public memorialization, this study furthers the understanding of cultural power in America. Given the changing political landscape of the US, it may be surprising a group that operated without the vote, contributed to Jim Crow, sought to memorialize “the Lost Cause” still exists. As we see in state education plans and fights over street names, the UDC cause is hardly lost at all.

### **Love Between Women: An Exploration of Friendship and Lesbianism Between Eighteenth-Century Noble Women**

Presenter: Joelle Lepage

Faculty Supporter: Dr. Anthony D’Elia, Department of History

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Female friendship norms in the eighteenth-century are fairly dissimilar from those in the twenty-first century. So too were laws against, and methods of hiding, lesbian relationships. With this in mind, the following questions

have both guided my research and formed the purpose of this presentation: What differentiated eighteenth-century female friendships from lesbian relationships? And why were some platonic friendships accused of being homosexual (i.e. as a method of slander), while actual lesbian relationships could pass for friendship and escape exposure. In both my past and ongoing research I have concluded that the socio-political climate of a state and the public's opinion of the ruling family ultimately determined how relationships between noble women were perceived. For example, on the eve of, and during, the French Revolution Marie Antoinette was attacked by multiple slanderous pamphlets fallaciously accusing her of engaging in homosexual acts with her favourites, the *princesse de Lamballe* and the *duchesse de Polignac*. In contrast, *Isabelle de Bourbon-Parme*—first wife of Holy Roman Emperor Joseph II—and her sister-in-law, Archduchess Maria Christina, had a romantic affair between 1760 and 1763. Their relationship is documented in 200 extant letters written by Isabella—some of which I am currently translating from French into English; in them, Isabella's love for her sister-in-law transcends the bounds of friendship and enters the realm of the romantic. Yet, despite the intensity of Isabella's three years in Vienna (in a political, social, and personal sense), her relationship with her sister-in-law was never exposed, and even after her death their 'friendship' was admired by those who were close to them. Therefore, using these historical examples of friendship and lesbian relationships between eighteenth-century noble women, I will argue that socio-political climate ultimately influenced the reaction to and perception of (platonic or romantic) love between women.

### **On The Edge of Seventeen: An Examination of the Transition Into Adulthood For Young Women Under Stalin (1920-1930)**

Presenter: Emily Poltorac

Faculty supporter: Dr. Rebecca Manley, Department of History

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This research paper presentation proposal is for an undergraduate history thesis discussing the transition into adulthood for young women under Stalin's regime in the 1920s and 1930s. This is done by discussing the everyday life of young women, including their social world (such as relationships with friends, family, boyfriends, spouses, and children), education and academics, and work lives and opportunities. These three prisms are chosen for their frequent mentions in the primary and secondary literature of the time period, explicitly drawing on diaries and memoirs. These prisms are also critical in showing how, despite the gravity of these young women's political and economic situations under Stalin, their daily lives continued, and their transition into adulthood occurred and occupied primary parts of their consciousness. However, this presentation also takes great care to acknowledge the political ramifications of the time period and expand on how they affected elements of everyday life, such as admission into educational institutions and the relationships between family members and spouses following arrests. To achieve this, this presentation will also provide a quick but comprehensive explanation of the time period, including cultural phenomena such as Soviet purges and repression, and relevant legislation such as the Family Codes of the 1920s. Lastly, the presentation will discuss why this topic has been overlooked thus far and offer potential theories for the oversight.

## Presentation Session G: Culture & Society

Room 014, Stauffer Library

Friday, March 8, 2:15-4:00

Moderator: Alyssa Conlon, Metadata and Discovery Librarian

### Opportunity or Obstacle: Museums in Kingston During the COVID-19 Pandemic

Presenter: Rehleigh Giesl-Butler

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The purpose of my research study was to determine the effects of the COVID-19 pandemic, and subsequent virtual transition, on the public outreach of museums in Kingston. While preliminary secondary research findings were indicative of a growing body of research on the topic of museums during COVID-19, very little focused on Canada, and less so on Kingston. The existing body of research was thus used to highlight the general importance of museums before, during, and after the pandemic in addition to their significance as vessels for community interaction. The main method for collecting research was through structured interviews with museum professionals in Kingston. Each individual interviewed provided a unique insight into the obstacles and opportunities that resulted from the pandemic at a number of museum institutions in Kingston.

In a virtual world, the COVID-19 pandemic offered some museums a chance to catch up. Whether that meant creating their own website or utilizing social media platforms, the strategies museums implemented in the wake of the virtual transition proved to be beneficial and necessary to their survival. What were originally obstacles (i.e., lack of technological skills, and digital presence) were effectively and creatively transformed by museums into opportunities - opportunities to expand with their audience and connect in new ways. Overall, this research emphasized the resilience and perseverance of museums as they uphold their significance and relevance as members of the local Kingston community.

### High Value Men and The Ubermensch: How Social Media Edits Are Indoctrinating Boys and Men into Nazi Ideology

Presenter: Constance Moseley

Faculty Supporter: Dr. Sharday Mosurinjohn, School of Religion

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The rise of social media platforms has given rise to a new form of fan created content: the edit. An "edit" is a compilation of video clips cut against a piece of music or a voiceover. Research into online hate groups has shown that members get radicalized as social media algorithms reward their engagement, while also isolating users from their real life communities.

Using an ethnographic approach, I set out to observe the usage of edits by the far right to determine its potential effects on young men. This led me to narrow my focus from far right "manosphere" groups at large (ie: incels, pick-up artists) to self appointed "High Value Men" or "volcels" (*voluntarily celibate*.) I then inductively compared my results to past research done on similar groups.

Edits use three main pools to build their content: shared interest in particular fandoms, self-help content, and motivational videos. The main ethos these videos is the idea that there are "good" people and there are "bad" people. Like the Nazi dichotomy of the Ubermensch and the Untermenschen, they have divided society into "High-value men" and "degenerates". These characters are edited to show off desirable physical features or personality traits. Videos claim that America (and the world at large) is constantly on the precipice of becoming a dystopia, precipitated by the degenerates outnumbering the high-value men (and women).

Online content creators are reinterpreting Nazi propaganda through “edits” to help them reach a broader audience, particularly targeting teenage boys. Whether fictional or real, characters in edits serve as the equivalent of the idealized Hitler youth in Nazi posters, repackaged for the TikTok era. Like Nazi propaganda, edits are being used in the modern age to normalize the belief that the extermination of a group of people is not only acceptable but necessary.

## **The Garden of Forbidden Fruits and the Laws of Cosmic Consciousness: Exploring Psychedelic Aesthetics, Altered States, and their Political Contexts through the lens of Printmaking**

Presenter: Kelby Paquette-Anderson

Faculty supporter: Alejandro Arauz, Fine Art

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*The Garden of Forbidden Fruits and the Laws of Cosmic Consciousness* (2023) presents a series of mixed-media artworks that delve into the visual aesthetics and the modalities of altered states of consciousness, along with the political dimensions surrounding psychedelics and their users. This thesis explores the conceptual underpinnings, viewing experiences, tensions, and socio-political implications inherent in the artworks, utilizing the themes and theories of phantasmagoria, enantiodromia, and post-structuralism to provide a distinct perspective. The study examines the interplay between printmaking processes and the expansive, explorative nature of psychedelic experiences, shedding light on the tensions between control and surrender in both realms. Furthermore, it examines the artworks' visual strategies to convey the optics of tripping on multiple psychedelics simultaneously while critiquing societal stigmas associated with drug use.

*The Garden of Forbidden Fruits and the Laws of Cosmic Consciousness* (2023) explores the convergence of visual aesthetics of psychedelics, altered states of consciousness, and their political contexts in a series of mixed-media artworks including digitally edited drawings and photographs, photographic CMYK screen prints, and stone and waterless lithographs. The series aims to both visualize and aestheticize the physiological and psychological effects of poly-drug-induced states while exploring the complex relationship between control and surrender in both printmaking processes and psychedelic experiences.

## **Personifying the Archives**

Presenter: Patricia Roussel, Marissa Little

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This presentation addresses the common misconception of archival material being stagnant and all-telling pieces of historical truths. As such, this presentation will narrativize imagination's inseparable place and capability within the archives through the case study of the late nineteenth-century friendship of two middle-aged women living on remote Wolfe Island near Kingston, Ontario. The imagined conversation that archivally revived this friendship stems from the 25 diaries of Irene Bamford housed in Queen's University Archives, which have been scanned, read, and transcribed by HIST501 Archives Internship students. This presentation will engage the full scope of this project with the experiences of Fall 2023 intern Patricia Roussel (Arts '24) and current Winter 2024 intern Marissa Little (Arts '25, ConEd '26). During the last term, Roussel integrated her archival study of Irene's diaries into her 'Historical Imagination' seminar, which challenged the concept of history's chronological cataloging. Together, these perspectives launched this project to present historiographic and archivally engaged believable truth of Irene's neighbour, Sylvia Woodman in her imagined responsive diaries. In their external research, Roussel and Little consulted with Queen's Archivists and the Wolfe Island Historical Society. This communal effort in narrativizing Irene's diaries to imagine her unrecorded friendship with Sylvia showcases the diverse applicability of archival material through their personification. Roussel shared her insight of bringing imagination to the personification of Irene's diaries with incoming Winter Archive interns, which Little has integrated into her diary transcriptions. This experience has since inspired

Roussel and Little to continue their archival studies in Professor Steven Maynard's upper-ear archives seminar. Thus, this presentation will illustrate the power of imagination and personification within archival material, exemplified by the presenter's perspective of studying Irene's diaries; hence detaching the archives' historical value to chronological recollection and bringing its contents to unending bounds to present interpretation and narrative engagement.

## **Our Savages: Eurocentrism in Canadian Media Coverage of Military Occupations**

Presenter: Kai Siallagan

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The renewal of hostilities between Israel and Hamas in October 2023 inaugurated an upsurge in Canadian media interest in the region. My research is a comparative analysis of Canadian media coverage of the occupation of the Palestinian territories of Gaza, the West Bank, and East Jerusalem (1967–present) against occupations in other regions of the Global South. Subjects were selected due to the relative similarity in the natures of the occupations, therefore permitting a meaningful comparative approach. No such endeavour exists in the literature. The analysis comprises both quantitative and qualitative surveys of articles pertaining to the occupations between January 1, 2013 and September 30, 2023 in four Canadian online news outlets: The Toronto Star, CBC News, The Globe and Mail, and The National Post. The quantitative survey demonstrates a disparity in volume of articles produced between the occupation of Palestine and other occupations. This disparity indicates a significantly greater degree of media interest in Palestine over other occupations. The qualitative element examines differences in language and framing, suggesting a tendency to humanise Palestinian subjects to a greater degree than their counterparts in other contexts. Drawing from the work of André Gingrich, Gerd Baumann, and Slavoj Žižek, I argue this dramatic difference in representation is the product of a self-critical modality of Eurocentrism underscoring Western engagement with foreign political conflict. This research thus questions the ways in which the Western political imaginary assesses, evaluates, and represents the oppression of the Other according to implicit Eurocentric logics.

## **Tracing the Provenance of Sir Isaac Newton's Copy of the *Annals* by Tacitus Which Now Resides at Queen's University**

Presenter: Haley Svensrud

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An acquisition made by Queen's University through the generous donation of the Bader Philanthropies, Inc. contained a volume of Tacitus's *Annals* with unconfirmed provenance, but the potential of it originating from the library of Sir Isaac Newton. After his death, his library was purchased by John Huggins, and gifted to his son, Charles Huggins. Over the decades the library's whereabouts became obscured and it was assumed lost. In 1920, a portion of Newton's library was sold off piecemeal at an auction held at Thame Park. At the time, it was not known that the books once belonged to the English polymath, although, a few of the books sold bore his signature. It is at this point in the history of Newton's library that I believe the *Annals* were separated from the rest of the books. John Harrison's work, *The Library of Isaac Newton*, laid the foundation needed to confirm the provenance of the *Annals*, which now resides at W.D. Jordan Rare Books & Special Collections Library. Queen's University acquired the *Annals* from Mr. Michael Hatcher, who purchased it from Hodgson's Auction Rooms in London in 1964. The auction catalogue which documented the sale of the Tacitus volume aided in establishing the near-continuous line of provenance I have established for the book. The volume discussed in this paper is the only one of the two books by Tacitus that Newton owned which has since resurfaced since Harrison compiled his bibliography of the library. The materiality of the book and the way Newton read may provide



insights for Newtonian scholars into how the *Annals* aided him in writing his works focusing on chronology.

## **Bloodlust and Blood Loss in Carmilla: Menstrual Madness and Nymphomania in the 19th Century**

Presenter: Lauren Waters

Faculty supporter: Dr. Brooke Cameron, English

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In Sheridan Le Fanu's *Carmilla*, Laura's continuous night terrors and chronic exhaustion, as well as Carmilla's excessive sexuality, fall outside of normative Victorian behaviour for young women. On a full mooned night, Carmilla's entrance into Laura's life prompts Laura to lose blood nightly as the vampire feeds on her – which results in fatigue, melancholy, and a pallid appearance. Laura's descent into illness evades the doctor's diagnosis and presents a medical ambiguity similar to the medical enigma of the female body in the 19th century. Specifically, Laura's symptoms mirror menstruation, a female condition that was under much debate, and many doctors linked it with psychosis. Alternatively, Carmilla's hypersexuality, bouts of hysteria, and intense affection present as an illness – a similar pathologization to Laura's illness. Carmilla presents symptoms of nymphomania, an excess of sexuality specifically within women that arose in the 19th century. In the text, Laura and Carmilla's bodies become the site of medical ambiguity and anxiety, paralleling how 19th century medicine held female bodies as a place of morals, criminality, and fear.

My research paper will investigate Carmilla and Laura as character foils connected through the motif of blood; as Carmilla lusts for blood, she feeds on Laura who consequently loses blood. *Carmilla* explores blood as a sexually charged liquid – related to menstruation and sexual passions. Further, seeing blood raises anxieties as it signifies making what is internal–external; similarly, *Carmilla* brings the repressed sexuality of women to the forefront of the novel. Ultimately, *Carmilla* centers women's bodies as a site of the unknown and illness; connected through the motif of blood, Carmilla exhibits nymphomania, and Laura presents menstruation, illustrating how medicine and morality combine to provoke Victorian anxieties surrounding female sexuality.

**End of Day 2**

## Acknowledgements

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# Thank You!