

‘Community Oriented Research: Local and Global Communities’

1. Aedon Young

A Curriculum of Fantasy: the Child, Otherness, and Welshness

Engagement with fantasy texts sheds light upon commonalities between the child, Otherness, and Welshness. I begin to examine this juxtaposition by highlighting two uses of fantasy: both as a forum for escapism and as a critical practice. Following the notion of public pedagogy, I propose a curriculum of fantasy in which those who critically engage with fantasy texts recognise the implicit Otherness of both the subjective child and the genre itself. Next, a curriculum of fantasy pursues an examination of a Welsh ‘structure of feeling’, built upon the Welsh concepts of hiraeth, a nostalgic yearning for place or homeland, and hanesion, stories or histories in which Welsh mythology and historical events are intertwined. By considering the Middle Welsh tale “Culhwch and Olwen”, I explore how the Welsh narrative, fundamental to the genre of fantasy, is restrained outside normative subjectivity, resulting in Welshness becoming a locale of Abject desire. The goal of a curriculum of fantasy is praxis--reflexivity and action in consideration of social and political implications of fantasy culture.

Keywords: curriculum, fantasy, structure of feeling, Otherness, Abject

2. Nouf Majed AlKusayer

Psychometric Assessment and Precision Remodelling of the Iowa Infant Feeding Attitude Scale to Improve Clinical Use and Efficacy among Pregnant Women in Canada

Background: The 17 item Iowa Infant Feeding Attitude Scale (IIFAS) has been widely used to assess maternal attitudes toward infant feeding and to predict breastfeeding intention. The IIFAS has been validated among pregnant women located in Newfoundland and Labrador (NL) in Canada, though its length may prove challenging to complete in clinical setting.

Objective: This study aimed to reduce the number of items from the original 17-item IIFAS scale while maintaining reliability and predictive validity.

Methods: The original IIFAS was validated in expectant women in NL (n= 793) and later explored in a large population (n=1283). An exploratory factor analysis (EFA) using principle component analysis with varimax rotation was performed to explore the underlying factor structure of the IIFAS tool. The internal consistency of both the 17-item and reduced 13-item version was assessed using Cronbach’s α and item total correlation. The Area Under Receiver Curve (AUC) and linear regression model were then used to assess predictive validity.

Results: Our findings revealed that a 13-item IIFAS had high internal consistency (Cronbach’s $\alpha = 0.870$). Three themes or factors were extracted from the EFA, resulting in the removal of four items. The reduced 13-item scale demonstrated an excellent ability to predict intent to breastfeed (AUC = 0.914).

Conclusion: The reduced 13-item version of the original IIFAS is a psychometrically sound instrument which maintains its’ accuracy and validity when measuring maternal feeding attitudes during pregnancy and can be more time-efficient in clinical settings compared to the 17-item IIFAS.

Keywords: breastfeeding attitudes, IIFAS , scale reduction, psychometric evaluation, Canada

3. John Heath

The Shortest Fuse to “InflammAging”: Cytomegalovirus, T cells and Telomeres in Chronic HIV Infection

While acute inflammation is an important response to infection, chronic inflammation underlies numerous age-associated pathologies. Those with long-term human immunodeficiency virus (HIV) infection often suffer “premature” age-related illnesses with inflammatory components to their development.

Lifelong cellular turnover equates biological aging with accumulation of senescent cells. Progressive telomere loss drives replicative senescence characterized by cell-cycle arrest and a pro-inflammatory senescence-associated secretory phenotype (SASP). Cytomegalovirus (CMV) infection creates an inflated, potentially senescent, CD8⁺ T lymphocyte population, often magnified in HIV infection. The contribution of senescent immune cells to the inflammatory landscape remains unknown; however extensive accumulation of CMV-specific lymphocytes could introduce a telomere-dependent SASP contributing to aging-associated pathologies.

Plasma and peripheral blood mononuclear cells were collected from 155 HIV⁺ individuals and 40, apparently healthy, controls. CMV-specific CD8⁺ T cell responses and lymphocyte subset telomere length (TL) were determined by flow cytometry. Plasma levels of inflammatory C-reactive protein were measured by ELISA.

HIV⁺CMV⁺ individuals showed greater levels of CRP, compared to HIV⁺CMV⁻ individuals, ($p = 0.019$). In CMV⁺ individuals tested, levels of CRP were associated with magnitude of CMV-specific CD8⁺ T cell responses, ($p = 0.013$). CMV-specific CD8⁺ T cells had shorter telomeres than global CD8⁺ T cells and HIV-specific CD8⁺ T cells, ($p < 0.0001$, 0.0036 respectively). Levels of CRP showed a negative association with absolute telomere length of CMV-specific CD8⁺ T cells ($p = 0.039$).

Our data suggest that in chronic HIV infection, immunological effects related to CMV infection can have a dominant influence on inflammation. Understanding mechanisms behind senescence-associated inflammation, including the role of CMV immunity in driving cellular senescence, could introduce new strategies to address age-related morbidities.

Keywords: Inflammation, Senescence, Immunity, Telomere(s)

4. Ernest Awoonor-Williams

Evaluation of Methods for the Calculation of Cysteine pKa's in Proteins

Methods for the calculation of the pKa values of ionizable residues in proteins is vital to understanding the pH-dependent properties and functional architecture of enzymes and their active sites. Cysteine is unique among the amino acids because of the chemical reactivity of its thiol group (S-H), which is involved in a remarkable range of cellular and biochemical functions. The reactivity of cysteines is quantified by a pKa value, and has been exploited by drug developers in targeting sites in proteins for chemical modification. Despite the plethora of existing pKa computing methods, no definitive protocol exists for accurately calculating the pKa's of cysteine residues in proteins. In this study, the pKa's of cysteines in proteins with experimentally reported pKa values were calculated using standard implicit and explicit solvation methods. It was determined that the explicit solvent methods outperformed the implicit solvent methods for the cysteine test set evaluated. Despite this, further development of these methods is needed in order to obtain more accurate protein cysteine pKa's for drug discovery purposes.

5. Ernest Awoonor-Williams

Advancing Kinase Inhibitor Discovery by Predicting Cysteine Reactivity through Computer Modelling

The protein kinase family of signaling enzymes has over the years become a prolific target of inhibition for anticancer drugs. In effect, many modern anticancer drugs act by inhibiting sites in protein kinases involved in cancer cell proliferation. However, the vast number and structural similarity of protein kinases in the human kinome makes it difficult for drug developers to design anticancer drugs that selectively target particular kinases. Kinase inhibitors typically target reactive cysteines in the active sites of proteins because they are more susceptible to binding. Identifying which cysteines in a given kinase that are most reactive is a major challenge for drug developers. I will present current efforts that I am undertaking to predict the reactivity of active site cysteine residues in protein kinases and how such methods could potentially enhance the discovery of more selective drugs for cancer treatment.

Keywords: Kinase Inhibitor, Cysteine, Cancer, Proteins, Molecular Dynamics

6. Anusree Subramonian

The Effect Of Synthetic Oxytocin Used For Induction Or Augmentation of Labor On Early Breastfeeding Initiation and Continuation: A Systematic Review And Meta-Analysis

Background: Synthetic oxytocin (SynO) is widely used for the induction and augmentation of labor. Several hypotheses suggest that exposure to intrapartum SynO has negative implications on breastfeeding, including delayed initiation and shorter duration. Despite this, no systematic review or meta-analysis has been completed to examine this association.

Objective: We performed a systematic review and meta-analysis to examine the effect of intrapartum SynO on breastfeeding initiation and continuation.

Methods: A systematic search of Medline, Embase, CINAHL and Cochrane databases was conducted. Eligible studies included peer-reviewed, published observational studies performed on pregnant women irrespective of delivery mode with measured breastfeeding outcomes related to initiation and duration. Studies about administration of SynO during the third stage of labor were excluded. Data was extracted from the seven selected articles, including descriptive data and effect sizes. Article quality was rated using Newcastle Ottawa scale.

Results: This review included seven studies, of which four were included in the meta-analysis. The analysis, using random effect, showed that SynO reduces the likelihood of (i) initiation of breastfeeding within 48 hours after birth (OR= 0.70; 95% CI: 0.62-0.78; p<0.0001) and (ii) continuation of breastfeeding for 1 to 3 months (OR=0.5; 95% CI: 0.28-0.88; p=0.02).

Furthermore, SynO increases the risk of formula feeding before hospital discharge (OR=1.77; 95% CI: 1.14-2.77; p=0.01).

Conclusion: We found evidence that exposure to intrapartum SynO negatively affects breastfeeding outcomes. This review recommends both the creation of universal clinical guidelines for regulated oxytocin use during labor as well as larger, prospective studies with better validated outcome measurement.

Keywords: breastfeeding, induction of labor, oxytocin, systematic review

7. Mashrura Musharraf

Using human reliability analysis insights to improve safety at sea

Offshore emergencies are more critical compared to onshore petrochemical plants as

emergency services for assistance cannot be reached immediately. The crisis must be dealt with initially by the installations' own personnel and success often depends solely on the performance of the personnel on board. Post-accident analysis of disasters like Piper Alpha & BP Deepwater Horizon shows that the crisis might have been managed more effectively if the personnel on board could take proper decisions and actions immediately. The analysis also points out that conventional training programs are often too generic and are not designed to identify or tackle the human factors that are critical for an offshore emergency situation. Recognition of the importance of human factors on operator performance raises the need for training that goes beyond the conventional training programs and incorporates non-technical training focusing on moral, motivation, attitude, role awareness, decision making, communication and teamwork. This research aims to improve the offshore emergency preparedness training by using insights from human reliability analysis. The first part of the work focuses on individual training. This involves using a virtual environment to assess reliability of individuals, identify their strengths and weaknesses, and provide direction towards adaptive training to ensure a level of competency. But since the offshore oil industry functions in a team work culture, individual competency is not sufficient, and personnel on board also need team skills. The second part focuses on enabling team training in a virtual environment by using artificial team members.

Keywords: Virtual Environment, Safety and Risk, Human Reliability, Bayesian network, Artificial Intelligence.

8. Jocelyn Barnes

Using novel optical technology to challenge an established view of Alzheimer Disease pathology

The most common neurodegenerative disease, Alzheimer Disease (AD), is characterized by debilitating cognitive impairments. Contributing to memory impairments in AD, a toxic protein termed amyloid beta ($A\beta$) builds up in the brain. Brain cells communicate with each other through synapses, and when we form memories, the synaptic connections between cells are strengthened. The chemicals released by our brain cells must be rapidly cleared by transporters in order to maintain effective communication. The most common chemical released in the brain is glutamate, which can strengthen or impair synaptic connections based on its temporal dynamics; if glutamate is not rapidly cleared by transporters, it will prevent the strengthening of the synaptic connections. It is widely believed that $A\beta$ impairs memory by preventing the rapid clearance of glutamate following release. However, previous studies have used indirect methods to reach their conclusions, and were unable to measure glutamate dynamics in real-time. Using a novel optogenetic technique, we have found that $A\beta$ does not affect glutamate clearance despite impairing the strengthening of synaptic connections. Using a specific glutamate transporter inhibitor, DHK, glutamate clearance is significantly impaired; however, this same concentration has no effect on the strengthening of synaptic connections. This indicates that $A\beta$ must be impairing memories in a way that is not affecting glutamate clearance arguing against a popular view of AD pathology. This insight into the proposed mechanisms of $A\beta$ -induced impairments gives a better understanding of the neurobiology of AD, and will help guide future studies into the disease.

Keywords: Alzheimer Disease, Electrophysiology, Optogenetics, Glutamate, Amyloid Beta

9. Laura Howell

Effects of cyclicity and frequency on formal phonological modelling

The goal of phonological modelling is to develop a formal model which describes, explains,

and predicts the phonological process of how the underlying mental representation of a word becomes the spoken word created by a speaker. For example, there is a phonological process in English called TD deletion. In this process, ‘t’ or ‘d’ is not often pronounced at the end of a word in casual speech; think wes’ side, but west end. In TD deletion, as in many other processes, the rate of TD deletion is affected by lexical word frequency, or the relative frequency of the word, when compared with other words (Bybee 2002; Coetzee & Kawahara 2013). It is similarly affected by cyclic application, or potential repeated exposure to a deletion favouring environment during the transition from mental representation to spoken word (Kiparsky 1985, 2000; Bermudez-Otero 2011; Guy 1991). Simple words with no added parts, like mist, are exposed to such an environment at multiple stages during the transition, with each exposure compounding the effects of the process and increasing its application rate. Complex words with added parts, like miss + ed = missed, are exposed but a single time, because they do not carry the word final ‘t’ or ‘d’ until the very last step of the derivation. This presentation focuses on how factors such as cyclic application and lexical word frequency can be applied to the modeling of phonological processes. This has often been overlooked in formal phonological models.

Keywords: Linguistics, Phonology, Sound Change, Frequency, Phonological modelling

10. Samantha Bokma

“I Used To Be an Adventurer Like You, Then I Took an Arrow in the Knee”: Power, Privilege and The Elder Scrolls: Skyrim

This study seeks to explore how toxic gaming culture is reinforced and potentially challenged by the content within individual games through engagement with them, by the commitments formed around them, and by the way one must interact with or through them. I argue that toxic gaming culture is typically reinforced through game content and issues of equity and diversity need to be addressed in the workspaces that create games. I am proposing to answer this question through a multi-method approach. This includes two components: a case study of the game Skyrim that analyses the game content and an autoethnographic analysis of my personal experience playing Skyrim and other games. My theoretical framework will be drawing on post-colonial and new media theories focusing on white heteropatriarchal colonialism, settler colonialism, race as place, database structure, phenomenal affect, the structure of play and power versus control. This project will explore the thematic connections between post-colonial literature and new media theories by specifically applying them to videogame content and culture.

Keywords: colonialism, new media, videogames, toxic gaming culture, equity

11. Steven Sutherland

Football’s Coming Home: Football, New Labour, and Third Way Social Democracy

Sport, primarily football, has become a more welcomed research source in political science in recent times. However, many of these studies have been conducted regarding theories of nationalism and political economy. This paper seeks to present the role football played in the propagation of Third Way social democracy by New Labour in Great Britain. I argue that football was used as a tool by New Labour through party positions and policy presentations to revolutionize social democratic values. By linking these former studies of nationalism and political economy to public policy and political management, this paper will offer a more nuanced understanding of how the political elite use cultural institutions to further their agendas. The paper will be conducted through qualitative methods that examine past research

on these relationships, while at the same time examining New Labour party doctrine, policy documents, and regulatory frameworks. I will use theoretical structures of nationalism, political management theory, neoliberalism, and Third Way social democracy to present that the use of football by New Labour was purposeful in achieving and maintain power, while at the same time reshaping social democratic values.

Keywords: football, New Labour, Third Way, public policy, cultural studies

12. Seitebaleng Susan Dintoe

Factors Affecting Early Adopters ICT Adoption and Diffusion into Teaching and Learning at the University of Botswana: Context of the Study

The government of Botswana had invested on technology infrastructure to facilitate accessibility of higher education to the people in Botswana. Despite all these investments, the adoption and diffusion of technology use of information and communications technology (ICT) by early adopters at the university was low. This presentation based on Rogers (2003) DoI theory reviews the concepts of policies, accessibility and infrastructure from a social systems, compatibility of technology, and early adopters perspectives. Also the transition process from f2f to the proposed online learning factors affecting or influencing early adopters from adopting and diffusing ICT into teaching and learning were reviewed. The purpose of the presentation is to review factors that affect and influence the adoption and diffusion of technology use by early adopters at the University of Botswana. The secondary sources were reviewed about factors affecting experiences of early technology adopters in using technology for teaching and learning in the university. The key findings were lack of proper communication on ICT policy structures, lack of infrastructure, and lack of accessibility of available technology for lecturers and students in universities. The factors affecting use of technology from a transition process perspective were including insufficient professional and development training, lack of support, time management, increase workload, change of roles, faculty emotions, and teaching strategies. The presentation concludes that having experiences with technology is important insofar as it enabled the lecturers to access the available technology, on the other hand, lack of technology experiences as one of the influencing factor could lead to the decrease rate of adoption and diffusion process.

Keywords: ICT adoption, ICT diffusion, early adopters, Information and communication technology, Botswana

13. Courtney Moddle

Knit Together: A Study of Late Nineteenth Century Knitting Patterns Through Contemporary Eyes and Hands

Despite, or perhaps because of its familiar role in society, knitting has often been considered as little more than a craft or hobby, too mundane or unimportant to study in an academic sense. Yet, it is often these everyday activities, like knitting, that can often provide the most information about society, culture and individuals' lives. Focusing on the connections between past and present, both current knitters and their predecessors, my project examines historic knitting practices through a contemporary feminist lens. My research suggests that a study of knitting books published in the late 1800s can provide new perspectives on women's lives and the knitting culture that they participated in. Furthermore, that a thorough analysis of these texts may change the way modern knitting culture is perceived.

To deepen my understanding of the historic knitting patterns that I am researching, I have

engaged in an autoethnographic knitting project as I knit through historic patterns. This autoethnographic process of using knitting as a method of inquiry has guided my research questions, provided me with new insights into history and has allowed me to make connections between the contemporary and the historic. The primary questions guiding my work are: what can we learn about the embodied lives of women, past and present through the study of knitting culture? How can we understand and discuss historic knitting culture when it is analyzed in light of the current feminist themes, and does this comparison also influence how we view contemporary knitting practices?

Keywords: history, knitting, craft, autoethnography, feminism, social change

14. Evodius Waziri Rutta

Strengthening Community-based Wildlife conservation through youth engagement. A case study of Tanzania, East Africa

In 2006, Tanzania lost over 10,000 African Elephants due to illegal poaching fueled by increased demand for ivory in Asian markets of China and Vietnam. Although several studies have been done to understand the problem of illegal poaching in Africa, most have focused on enhancing wildlife protection through law enforcement and drone technology. Thus, little is known on how to engage and build capacity of communities adjacent to protected areas as a potential solution. This research seeks to explore ways in which youths residing adjacent to protected areas could be engaged to strengthen community-based conservation of African Elephants. The study aims to answer the following questions: How can the government of Tanzania engage its youths in wildlife conservation to address illegal poaching and ensure sustainable conservation of African Elephants in Tanzania.

Selous Game Reserve is used as a case study because it was home to one of the greatest concentrations of African elephants on the continent, but rampant ivory poaching has seen the population reduced by 90 per cent in less than 40 years. The study will conduct field Interviews and Focus Group Discussions to understand better ways to engage youth in community-based wildlife conservation. Youth engagement in wildlife conservation has been recognized as a long term solution to counter poaching in many parts of the developing world. Study findings will inform policy makers in government and NGOs understand how effective to engage youth in conservation efforts as future conservationist of African Elephants and other animal species in danger of extinction.

Keywords: Conservation, Wildlife, African Elephants, Illegal Poaching, Youth Engagement

15. Ifedolapo Mohammed

Examining Inuit people's perceptions of Muskrat Falls' impact on food security

Developing Canadian hydroelectric resources is vital to North American plans for combating future energy demands and international agreements on carbon dioxide (CO₂) reductions. Presently, the construction of a multi-billion-dollar hydroelectric dam is underway at Muskrat Falls on the lower Churchill River in Labrador. However, the Inuit communities in Labrador have expressed strong opposition to the ongoing project. One key concern is that Methylmercury, a neurotoxin linked to heart related issues, intellectual defects in children and other problems, will poison their food supply, especially fish. While much research has been conducted on the Muskrat Falls hydroelectric power development and its impact on Canadian Indigenous communities, limited attention is paid to the opinions and concerns of these communities. I propose that this illuminates environmental racism and (in)justice in Canada. This project seeks to understand the perceptions and concerns of the Inuit people of Nunatsiavut and NunatuKavut related to the ongoing Muskrat Falls project and how it could

impact food security in their communities at various stages of the project. I propose to do so considering existing literatures on environmental justice and racism, relating these concepts to the Inuit struggle and perceptions towards the Muskrat Falls hydroelectric project and its impacts on food security. Secondary data tools such as academic and peer review journals, news articles and archives and scholarly research papers will be instrumental. Primary sources will also be valuable and will be determined after further consultation with the relevant Inuit government authorities.

Key words: Food Security, hydroelectric project, Inuit communities, Muskrat Falls, Methylmercury.

16. Nigar Sekercioglu

A critical appraisal of chronic kidney disease mineral and bone disorders clinical practice guidelines using the AGREE II instrument

Nigar Sekercioglu, Reem Al-Khalifah, Joycelyne Efua Ewusie, Rosilene M. Elias, Lehana Thabane, Jason W. Busse, Noori Akhtar-Danesh, Alfonso Iorio, Tetsuya Isayama, Juan Pablo Díaz Martínez, Ivan D. Florez, Gordon H. Guyatt

Presenter and corresponding author: Dr. Nigar Sekercioglu (Note: this study is a chapter in my PhD thesis).

Background: Patients with chronic kidney disease mineral and bone disorders (CKD-MBD) suffer high rates of morbidity and mortality, in particular related to bone and cardiovascular outcomes. The management of CKD-MBD remains challenging.

Objectives: The objective of this systematic survey is to critically appraise clinical practice guidelines (CPG) addressing CKD-MBD.

Methods/Design: Data sources included MEDLINE, EMBASE, the National Guideline Clearinghouse, Guideline International Network and Turning Research into Practice up to May 2016. Teams of two reviewers, independently and in duplicate, screened titles and abstracts and potentially eligible full text reports to determine eligibility, and subsequently appraised the guidelines using the Advancing Guideline Development, Reporting and Evaluation in Health Care II (AGREE) instrument.

Results: Sixteen CPGs published from 2003 to 2015 addressing the diagnosis and management of CKD-MBD in adult patients (eleven English, two Spanish, one Italian, one Portuguese and one Slovak) proved eligible. The National Institute for Health and Care Excellence (NICE) guideline performed best with respect to AGREE II criteria; only two other CPGs warranted high scores on all domains. All other guidelines received scores of under 60% on one or more domains. Major discrepancies in recommendations were not, however, present, and we found no association between quality of CPGs and resulting recommendations.

Conclusions: Most guidelines assessing CKD-MBD suffer from serious shortcomings using AGREE criteria although limitations with respect to AGREE criteria do not necessarily lead to inappropriate recommendations.

Keywords: Chronic Kidney Disease, Clinical Practice Guidelines, Mineral and Bone Disorders

17. Obafemi McArthur Okusipe

The Indigenes, their Environment and Environmental Justice in Lagos Metropolis

The sanitary condition of a settlement has far reaching effects on its inhabitants, their

liveability and resilience to the settlement. It is therefore necessary to address political and environmental processes to improve quality of living and the environment. Discharging urban functions without conscious considerations for the indigenes, their environment and environmental ideology would create complex problems (social, economic and environmental).

This research addressed environmental justice as regards the location of landfill sites and the sanitary conditions of indigenous settlements in Lagos Metropolis. The research analysed inequalities in the provision of, access to and use of environmental services (sanitary facilities) and identify resultant environmental challenges.

The research applied empirical approach discussing indigenous people, their environment and environmental justice while applying secondary data sources to explore the relationship between communal income level and location of landfill sites. It highlighted literature/policy debates on indigenes' environment. Research findings revealed that landfills are considered nuisance; location of landfill sites at proximity to low income indigenous communities have resultant effects and negative externalities; leaching poses serious environmental quality and public health issues to potable water supply in indigenous communities and there is inequality in the distribution of environmental costs and benefits.

Keywords: indigenes, environmental justice, landfill sites

18. Abdul-Rahim Abdulai

Seeking Effective Approaches to Rural Food Security: Community Food Security in Newfoundland and Labrador in Perspective

Though food is a basic need, food insecurity has become one of the most talked about challenges in the world today. The fact that food is needed for survival has led to continues search and application of diverse approaches to ensuring food security in different places. After several years of emphasis on household and national food security approaches, the concept of "Community Food Security" emerged in the agenda as a viable approach, especially in rural areas, where togetherness is a strength. Being relatively new to food security discourse and practice, there has been little done on its manifestations in many places including Newfoundland. Using literature review, content analysis, and interviews, the study examines the rise of community food security approaches and its manifestation in Newfoundland. The research examines the evolution of food security literature, focusing on the emergence of community food security and the drivers of this new approach in food security promotion. Using gray literature, the concept will be positioned in the context of food security promotion in rural Newfoundland, where ongoing efforts and their effectiveness will be examined. The project is expected to reveal successes or failures of community approaches to food security promotion in Newfoundland. This will provide important inputs to policy and planning towards food security as the Province continue to pursue general food security in the face of a challenged agriculture industry.

Keywords: Food Security, Community, Rural, Newfoundland, Approaches

19. Lesley Derraugh

Hegemonic Masculinities and Rape Culture: Negotiating Manhood at a Canadian University

This ongoing research is prompted by the current crisis in North America of campus rape culture and grounded in the need to identify solutions to the rate of sexual violence occurring in university communities. Using in-depth qualitative interviews with young, male-identified individuals recruited from the Memorial community, this project examines how men negotiate

the complexities of hegemonic masculinity in a society in which that masculinity is inherently violent. I will explore these main questions: 1) How do male-identified individuals understand and negotiate the intricacies of multiple masculinities and societal expectations of what it means to “be a man”? 2) To what extent do participants identify with hegemonic notions of masculinity, and why or why not? In other words, what developmental experiences have most influenced their self-identification (either positively or negatively) with traditional masculine norms – and how? 3) How is rape culture understood, perceived and perpetuated (or challenged) by male-identified university students? Drawing on the theoretical work of gender researchers such as Raewyn Connell and Michael Kimmel this presentation will include insights into the ways in which masculinities are being reproduced, challenged and resisted.

Keywords: Masculinities, Violence, Rape Culture

20. Murtada Elhaj

Control Requirements for Automatic Managed Pressure Drilling System (MPD) using MATLAB

Murtada Elhaj and M. Enamul Hossain

The increase in oil price in years of 2005 until 2008 gave an incentive for petroleum companies to start research programs to develop equipment and systems that would enable the petroleum companies to reduce the drilling cost. Sometimes, bad things come with valuable things. In our case, unless increasing in oil price in 2005 till 2008, maybe the drilling industry will not open its eyes to the potential of automatic control of drilling operations. Automatic control solutions for drilling are expected to become widely used in the future. There is a great economic potential for the introduction of automatic control providing reduced drilling time, increase regularity, and improved performance, especially for wells with very narrow pressure margins. One of the major challenges has been related to the narrow wellbore pressure profile gap between the formation collapsed pressure profile and the formation fracture pressure profile. The petroleum industry is currently developed and testing new technology, such as Managed Pressure Drilling (MPD) technologies, where new equipment and automated procedures are utilized to reduce the drilling cost.

Introducing the MPD for petroleum drilling industry will have a considerable cost saving potential when drilling geothermal wells. In this short study, automated drilling is discussed in general with an overview of what automatic control tools can offer in the future drilling operations. A simple nonlinear hydraulic model capturing only the main pressure and flow dynamic was developed and applied for controller development, tuning, and analysis.

For the future recommendations, our work is still in the beginning and need more modifications and adjustments to deal with complex situations.

Keywords: Drilling Engineering, Pressure Margins, Automatic Control

21. Jacob Henry

Feeling Local, Crossing Borders: Revealing Touring Tactics

Decades of research on tourism reveals a persistent theme: tourists want to authentically ‘feel like a local.’ Without consulting the academic literature, tour guides in Chicago intuitively include the promise of, “becoming a real Chicagoan in no time,” in their half-day neighborhood walking tours. Of course, it is impossible to understand a local host community after a single tour, but the guides do convey cultural cues and local insights. The tourist, armed with these cues, may feel like a quasi-insider for the remainder of their stay in the city—at least that’s the guide’s hope. The walking tour (and my participant observation) occurs in a liminal zone in which guides facilitate a cultural border crossing. Tour groups all start as outsiders but some cross the border and become perceived insiders. These tourists are attentive

and document their experience while tourists who question their guide's ability to facilitate the border crossing become disengaged and may disregard the narrative of place presented. This research identifies three tactics (agent alignment, urban alchemy, and material action) guides use, with varying levels of success, to facilitate the transition and help the tourists 'become local.' These findings invite dialogue about tour guides as urban localizers and advocates of distinction rather than homogeneity in North American cityscapes.

Keywords: Walking Tourism; Urban Tourism; Tour Guides; Localization & Identities.

22. Tanyan Ye

Chinese New Year's Eve Dinner: Memories, Tradition and Identity of Chinese Community in Newfoundland

Since their first presence in Newfoundland and Labrador in 1895 as laundry and commercial workers, Chinese immigrants have become a significant part of the population of this province, so that they now comprise one of its largest minorities. However, the culture and tradition of this community to large extent remains "invisible" for the mainstream culture. With few exceptions, little research has been done on this group of people in Newfoundland and even less attention has been paid to their food culture, though it is an important aspect of their culture and tradition.

Studying the food of the Chinese community in Newfoundland and Labrador promises to be an effective and practical way to understand how Chinese-Newfoundland identity has been reshaped, and how Chinese traditions evolve in new cultural contexts. This paper will explore the maintenance and evolution of Newfoundland Chinese community's identity and tradition by exploring its food culture. Because of the diversity of the Chinese community and its respective food cultures that are too broad to be covered in a short paper, the article focuses mainly on Chinese New Year's Eve dinner which is the annual epitome of those groups' food culture. By examining and comparing the different food Chinese immigrants have for the celebration before and after their immigration, and by analyzing the reasons and motivations behind the differences, the paper will explore how the Chinese groups conserve their identity while at the same time adapt to the new cultural and material contexts.

Key words: Chinese New Year, foodways, identity, tradition

23. Justine Ammendolia

Low-pressure tolerance of shallow-water echinoderms suggests limited success of climate driven deep-sea migrations

Oceanic temperatures are increasing at an alarming rate due to climate change. Shallow-water areas specifically are becoming more difficult habitats for animals to occupy. It has been predicted that animals will make downward-vertical migrations to depths with more stable conditions. Hydrostatic pressure is one of the major abiotic factors that can both drive and/or limit such migrations. Overall our understanding of species' tolerances remains rudimentary. In this study, two IPOCAMP™ pressure systems were used to create high-pressure conditions. We examined the pressure tolerances of shallow-water echinoderms ubiquitous to the North Atlantic: the green sea urchin (*Strongylocentrotus droebachiensis*), polar sea star (*Leptasterias polaris*), and orange-footed sea cucumber (*Cucumaria frondosa*). Species were exposed to pressures within and beyond their natural bathymetric distributions over experimental durations that were both acute (24 h) and long (72 h). Tolerances were measured by assessing feeding indices, mobility (righting response), and anchorage. Exposure to high pressure resulted in reduced mobility or ability to anchor for all of the species.

Mobility was most negatively affected for *S. droebachiensis* following the longer exposure durations. By contrast, this trend was not apparent in *C. frondosa* and *L. polaris*. Overall, high pressure reduced the ability to feed in *S. droebachiensis* and *C. frondosa*. The results suggest that exposure to pressures beyond species' natural habitats can have deleterious effects on adults of cold-water echinoderms, which may limit their capacity to undertake vertical migrations in response to rapid ocean warming.

Keywords: Climate change, marine biology, deep sea, hydrostatic pressure, echinoderms

24. Richard, Nyiawung Achankeng

Eco-Labeling: “A Policy Convergence or Policy Transfer Ideology” in Environmental Policy

Eco-Labeling is a market-oriented environmental policy tool to encourage responsible Sustainable, Consumption and Production (SCP) practices (GEN, 2004). Ecolabelling was identified at the UN Conference of Environment and Development in 1992 as an important mechanism to achieve sustainable development in Agenda 21. It has subsequently witnessed enormous adoption and implementation within various multinational, national, and international realms like the EU Label, Environmental Choice (Canada), Eco-mark (Japan), and the African Ecolabelling Mechanism (Africa). This study, which is based on a review of more than 20 articles, critically looks at the way this initiative has been adopted in countries and various regional bodies. Theoretically, it analyzes eco-labels using two political ideologies: 1) Policy Convergence – the adoption due to similarities in economic, social, and political institutions and 2) Policy Transfer – where bureaucrats and politicians, with the aid of international agencies or NGOs, imitate, harmonize, penetrate or diffuse initiatives into their countries or regions based on lessons drawn (Dolowitz and Marsh, 1996, 2000). These varying approaches has led to success stories (case of the EU-Label) or coercive and challenging implementation (Case of the African Eco-Labeling Mechanism) with varying institutional setups.

Keywords: Eco-Labeling, Policy Convergence, Policy Transfer, and Institutional Settings.

25. Sahel Mahdavi

Comparison of Various Synthetic Aperture RADAR (SAR) Images in terms of Wetland Monitoring

Wetlands are important components of the environment. They play a pivotal role in purifying water, controlling natural hazards, conserving soil and water and recreation. Currently, 14 per cent of Canada is covered by wetlands. However, these natural resources are rapidly altered or destroyed as a result of industrialization, urbanization and the advancement of agriculture. Newfoundland and Labrador is no exception in this regard. Although a considerable part of NL is covered by wetlands, no significant effort has been made to map wetland within the province until present. Since the advent of Synthetic Aperture RADAR (SAR) sensors, they have been employed extensively in wetland classification. SAR sensors, with their day and night, all weather acquisition capability, their penetration depth and their sensitivity to the moisture, are valuable tools for wetland mapping and monitoring. Currently, there are several active sensors on board which are different in terms of their wavelength, revisit time and accessibility. Therefore, it is important to realize which sensor is more suitable for wetland classification. This study is a comparison between various on-board sensors in terms of their potential in wetland mapping. The result of this research can be applied in future operational wetland studies for better monitoring of these valuable natural assets.

26. Alex Norman

Enhanced Recovery After Surgery

Newfoundland and Labrador has the highest incidence rate of colorectal cancer in Canada, the highest mortality rate from colorectal cancer in the country, and the highest rate of familial colorectal cancer in the world. Each year approximately 150 elective colorectal surgeries are performed at St. Clare's Mercy Hospital alone. In 2014, the median length of stay in hospital for an elective colorectal surgery was 7.24 days. The estimated cost of hospital stay is \$1968 per day. Enhanced Recovery After Surgery (ERAS) is a set of 20 perioperative guidelines of best practice in surgery. Chart reviews were performed on the 2014 colorectal surgeries, and determined that ERAS guidelines were followed with 49% compliance. In 2016, a quality improvement program was implemented by a regional health authority whereby these guidelines would be followed for all elective colorectal procedures with a targeted 80% overall compliance. Six months of this intervention data has been obtained and in the intervention year, median length of stay decreased to 5.44 days. The guidelines were followed with 77% compliance. The purpose of this study is to demonstrate that a change in surgical practice can significantly decrease length of stay in hospital for elective colorectal surgeries at this site. The primary outcome of this study is length of stay. Three secondary outcomes are complication rate, 30-day readmission rate, and 30-day mortality rate. Each of the secondary outcomes decreased (complication rate: 45% to 41%; 30-day readmission rate: 12% to 10%; 30-day mortality rate: 1.9% to 1.1%), but these changes were not statistically significant.

27. Julia Brennan

The Unlikely Activist: Community Memories and Archaeology on Birch Island

Birch Island started as a small settlement in the area of Happy Valley-Goose Bay during the 1940s, when military bases were being constructed in the area of Lake Melville, Labrador. The community continued to exist until resettlement in the late 1960s. As part of a greater tourism, conservation, and economic development push within the Upper Lake Melville region, the community group Healthy Waters Labrador has begun conservation efforts in the area of the settlement and requested archaeological work be done on the site in order to inform their plans for historical interpretation and commemoration at the site. People's memory of their past reflects on their identity in the present. Accordingly, archaeology is in a unique position to renegotiate the past and reconcile it with the present dominant history narrative, thus creating a space where archaeology is a form of activism. Through the case study of Birch Island, this paper will explore how archaeology enables alternative narrative.

Keywords: Community Archaeology, Memory, Activism, Oral History, Happy Valley-Goose Bay

28. Christopher J. Lively

An Assessment of Courtroom Questioning Practices

During investigations of wrongdoing, it is imperative that those in the criminal justice system (e.g., police officers, lawyers) utilize appropriate questioning practices so they are able to obtain reliable information from interviewees. Research has shown that police interviewers rarely use the best questioning practices during interrogations. Lawyers, often with much glee, point out these flaws during trial and poorly executed interviews can be a factor in acquitting defendants. However, no studies appear to have analysed the questioning practices of lawyers to determine if the questioning standards that are applied to police officers are applied to

lawyers during examinations of witnesses on the stand. Eighty-eight unique court transcripts were analyzed. Every utterance in each transcript was coded for the frequency of question types being asked (e.g., open, probing, closed, leading, opinion), type of lawyer (crown vs. defence), and type of examination (direct vs. cross examination). Results show that approximately 80% of the questions asked are inappropriate for gathering reliable information. No statically significant difference was found between crown or defence lawyers regarding the proportions of different types of questions asked. However, there was a significant statistical difference in some question types as a function of examination type. Specifically, direct examinations contained more open-ended and probing questions, whereas cross examinations contained more leading questions and expressions of opinions. These data suggest that the vast majority of courtroom questioning practices run counter to the truth seeking function of the judiciary. Implications for the role of these questioning practices in the courtroom are discussed.

Keywords: Lawyers, Questioning practices, Truth seeking, Courtroom, Criminal Justice System

29. Arlan Vriens

Performing Early 19th Century Violin Music: Posture, Sound, and Gesture

Western mainstream classical music performance relies heavily on received traditions of playing techniques. For centuries, classical performers have learned primarily through one-on-one studies with teachers of the previous generation, who in turn learned from their teachers in the same way. Over time, this knowledge transmission process obscures past performance practices, as changes are made by performers according to personal biases, cultural aesthetics, politics, or simple accidents. As a result, most modern performances of Beethoven or Mozart, for example, would both sound and appear quite foreign to the composers themselves.

In an effort to more clearly understand how those iconic composers and their contemporaries experienced violin music, my research examines the ways in which early 19th century violinists physically held and manipulated the violin and its bow in performance. Inasmuch as the violin's sound profile responds very strongly to minor changes in playing posture, understanding how performers physically interfaced with the instrument clarifies which types of sound and movement they were interested in producing.

In addition to traditional research methods, my work also involves physically adopting the postures in question, based on a number of exceptionally demonstrative primary sources from the early 1800s. By actually attempting these postures, I am able to contrast their outcomes with those of my own contemporary training as a professional violinist.

My presentation, which will include live performance on an original violin from the late 1700s, will illustrate the impact of these postures, and discuss the implications for today's performers and audiences.

Keywords: Music, History, Performance, Violin, Romantic Period

30. Liqiu Zhang

Integrated Assessment of Freshwater Resources of Boreal Ecosystem: Case Study of Newfoundland and Labrador

World's climate is changing at a fast pace which is obvious through various manifestations and impacts. Climate change impacts on hydrological processes have been observed already and further changes are projected. Various climatic and human induced drivers of ecosystem have consequences on freshwater ecosystems as they impact on their services in diverse ways.

Many studies have been carried out to assess the vulnerability of water resources around the world, however, variation in characteristics in different places calls for more context specific research in this regard. With no known indices, or comprehensive tool for assessing vulnerability, resilience, and adaptation of freshwater resources in boreal ecosystems, this study seeks to understand and develop appropriate ways of undertaking such assessments to inform decision making. The research will examine sensitivity, vulnerability, and adaptive capacity of freshwater resources in boreal NL; assess measures taken by government to solve the problem of vulnerability of freshwater resources, and develop a framework to be used by communities to assess their relative vulnerability to factors influencing freshwater resources. To develop an integrated assessment tool, existing assessment indices will be modified to appropriately reflect the needs of boreal forest dependent rural communities, hence, a socio-ecological framework will be applied after extensive review of options to understand watershed vulnerability. This is aimed at developing context specific indices for assessment of vulnerability of watershed in boreal ecosystems, towards protection of this important natural resources against the rigors of climate change.

Keywords: Vulnerability, Watersheds, Socio-ecological Framework, Boreal ecosystem, Climate Change

31. Abd Al-Aziz A

Abu-Saleh Computational Study of the Deamination of Melamine

(Abu-Saleh, A. A.); Almatarneh, M. H.; Uddin, K. M.; Poirier, R. A.; Warburton, P. L.) A detailed computational study of the deamination reaction of melamine by OH⁻, nH₂O/OH⁻, nH₂O (where n = 1, 2, 3), and protonated melamine with H₂O, has been performed using density functional theory and ab initio calculations. All structures were optimized at M06/6-31G(d) level of theory, as well as with the B3LYP functional with each of the basis sets: 6-31G(d), 6-311G(d), 6-31G(2df,p), and 6-311++G(3df,3pd). B3LYP, M06, and xB97XD calculations with 6-31+G(d,p) have also been performed. All structures were optimized at B3LYP/6-311G(d,p) level of theory for deamination simulations in an aqueous medium, using both the polarizable continuum solvation model and the solvation model based on solute electron density. Single point energy calculations have been conducted at G4MP2 and CBS-QB3. Fifteen different mechanistic pathways were explored. Most pathways consisted of two key steps: formation of a tetrahedral intermediate and in the final step, an intermediate that dissociates to products via a 1,3-proton shift. The lowest overall activation energy, 111 kJ mol⁻¹ at G4MP2, was obtained for the deamination of melamine with 3H₂O/OH⁻.

Keywords: melamine, density functional theory, deamination, solvation models, transition state optimization.

32. Emadeddin Hussein

Design of Renewable Energy System for a Mobile Hospital in Libya

Renewable Energy Systems are becoming a common choice for small communities around the world. Recently the United Nation efforts to provide field hospitals have decreased in areas that face a high risk in transportation, lack of power and lack of security for field officers. In this paper, a PV hybrid system is being considered for supplying an electric load of a mobile hospital in an area where there is no grid. An optimal configuration has been determined by taking the total cost as the objective. In a world where civil wars are increasing, lack of aids and health resources have a major effect on people lives. A hybrid system is a cost effective solution to power a mobile hospital. Furthermore, it is expected that the proposed system will

help communities to provide uninterrupted power for their sites to accommodate a doctor and two nursing staff in remote areas.

33. Yanxiao Ma Focalization in Verb Gapping Construction

It has been observed that verb gap exists in the second conjunct in the following sentence (cf. (1)), which is known as verb gapping construction in English.

(1) a. John likes apples and Mary e oranges. (Johnson 1994)

b. John saw Mary and Bill e Susan.

However, it is controversial whether English-like gapping constructions are licensed in Mandarin Chinese. Some linguists (Li 1988, Tang 2001) claim that English-like canonical gapping constructions are prohibited in Mandarin Chinese, as seen in (2), while some others (Paul 1999, Li 1998) argue it is allowed, as presented in (3).

(2). *Zhangsan xihuan pingguo, Lisi e juzi. (Ai 2014)

Zhangsan like apple Lisi e orange

‘Zhangsan likes apples and Lisi e oranges.’

(3). Zhangsan chi-le san-ge pingguo, Lisi e si-ge juzi. (Li 1998)

Zhangsan eat-ASP three-CL apple Lisi four-CL orange

‘Zhangsan ate three apples, and Lisi four oranges.’

Differing from the canonical gappings in English, which are created by V-to-T movement (Johnson 1994, 2009), verb gappings in Mandarin Chinese are mainly analyzed as verb raising sentences (Paul 1999), based on Johnson’s ATB movement (Johnson 1994) or empty verb sentences (Tang 2001).

An alternative analysis is adopted in this proposal. The object-NP in the target gapping clause is proposed to undergo focalization, within the sentential (IP)-internal domain. Following the VP-internal subject hypothesis (Fukui & Speas 1986), the subject-NP then moves from Spec-vP to Spec-IP, motivated by EPP-feature for left peripheries. The remnant constituent vP is hypothesized with deletion at the PF-interface, giving rise to the surface “Subject-NP + Object-NP” order. This assumption theoretically confirms the ‘parallelism’ between the multiple fragment clauses in gapping constructions. It is also empirically consistent with the prosodic stress in the target gapping clause.

Key words: gappings, focalization, parallelism

34. Ema Kibirktis Icotourism in St. John's: Exploring Intersections of Tourism, Authenticity, and Drink

In 2015, tourists spent almost half a billion dollars (Government of Newfoundland and Labrador). A summer Visitor Exit Survey for Newfoundland and Labrador revealed that in St. John’s 32% of tourists frequented a bar, 21% attended concerts, and 16% participated in local festivals (Government of Newfoundland and Labrador 2010), demonstrating that many tourists flock to the province to participate actively or passively in local drinking culture.

Scholarship on Newfoundland and Labradorian foodways generally, and culinary tourism more specifically, has emphasized food over drink. Despite the wealth of scholarly information, many visitors travel to St. John’s for the promises of what geographer David Bell defines as “alcotourism” (2008). Just as culinary tourism is thought to bring an authentic cultural experience through food, alcotourism considers alcohol as the vehicle for visitors to learn about culture, for example, buying lederhosen and flying to Munich, Germany to celebrate Oktoberfest. My research aims to distinguish how alcotouristic activities fulfill a tourist’s “search for authenticity of experience” (MacCannell 1973: 589) in St. John’s,

Newfoundland and Labrador. My study will examine three “stages” in St. John’s where alcotourism is performed, each of which potentially involves different types of tourists: microbreweries and locally produced liquor, the George Street bar district, and the Screech-In ceremony.

35. Brennan Lowery

Participatory community governance through sustainability indicators: An analytical framework

The proposed poster presentation will display an analytical framework for the analysis of participatory community governance through the use of sustainability indicators. As a synthesis of existing relevant literature, the proposed framework is part of the presenter’s doctoral research, which evaluates the ability of projects to measure and monitor community and regional well-being through indicators to lead to more inclusive local governance. Sustainability indicators (SIs) are an often-used tool of community sustainability planning, evolving from technical indices to community-based tools for identifying visions for progress in a community and providing a common framework for designing and evaluating new development. SI initiatives have been undertaken in many communities in Canada and internationally, helping to foster greater communication, trust, and relationship-building among diverse stakeholders while improving understanding of key trends related to local sustainable development. However, despite these “soft impacts”, the potential of SIs to impact long-term community governance is unconfirmed. Additionally, the primarily urban application of SI tools has overlooked whether they can be useful for rural and natural resource-dependent communities, which have generally been left out of the discourse on sustainable community development and often face specific challenges. Thus, the proposed poster presents a new analytical framework for assessing the integration of SI initiatives into community and regional governance, using criteria informed by research on collaborative governance, interactive governance theory, communicative action theory, and social learning. **Keywords:** participatory governance; rural development; sustainable community development; sustainability indicators

36. Jacinda Miriam

Sinclair Excavating Arvertok Again: How Practices in Inuit Archaeology have Changed since the 1930s

In 1934, the American archaeologist, Junius Bird, surveyed five Inuit archaeological sites along the Labrador coast. A foundational project in arctic archaeology, the effects of Bird’s work continue to be felt today. However, Bird’s influence carries a mixed legacy and his research is now regarded as theoretically and methodologically problematic. An archaeologist of his era, Bird excavated at an accelerated rate and is thought to have discarded European-derived artifacts, because they did not, in his mind, represent “authentic Inuit” material culture. Of Bird’s sites, Arvertok, “the place of whales” is perhaps the most important. With the reputation of having been an “Inuit Paris or London,” it was an important center of Inuit whaling and trade in the 17th and 18th centuries with Inuit traveling along the Labrador coast to reach it. Today, Arvertok lies beneath the town of Hopedale, capital of the Nunatsiavut Government. Despite this, no significant archaeological work has occurred at the site since Bird’s original excavation. 2017 is a celebratory year in Hopedale, marking important anniversaries such as Canada’s 150th anniversary and the 200th anniversary of the town’s oldest wooden Moravian building. As part of these celebrations, the local community has requested a formal archaeological revisit of Arvertok to be carried out under the Tradition and

Transition partnership between MUN and the Nunatsiavut Government. Working approximately 80 years after Bird, how have the theory, methodology, and ethics of Inuit archaeology changed and what will this mean for the 2017 Arvertok excavation and the community which requested it?

Keywords: Inuit, Archaeology, Labrador, Tradition and Transition, Nunatsiavut Government

37. Navjotpal Kaur

Effects of chronic pain perceptions on quality of life among four ethnic groups

A large body of literature conducted in the past few decades suggests that biological, psychological, and sociocultural factors account for ethnic/racial differences in the experience and management of pain. However, a significant proportion of this research is focused on Western industrialized countries, particularly the USA, with little information from transitional countries such as India. This paper fills an important research gap by examining the effects of respondents' perceptions of chronic pain due to arthritis (N=998) collected by WHO(SAGE). Given that pain is interpreted differently by men and women, we estimated gender-specific models to capture these nuances. Multivariate results showed that there were clear differences between ethnic groups on how they let pain interfere with affairs of their daily life. Females belonging to scheduled tribes (STs) were more robust than females from other ethnic groups as they experienced minimum impact of pain on their physical and psychological health, social cohesion, and independence, used as proxies for quality of life in this study. While results for males also followed similar trend, there were exceptions in physical health and level of dependence as results were not consistent with the anticipated outcomes. ST males suffering from chronic pain reported more physical health problems and high level of dependence than males belonging to other ethnic categories.

38. Katie Flood

Ballet and Girlhood

Many young girls dream of becoming a professional ballerina and having a wardrobe full of beautiful tutus, pointe shoes and tiaras. A ballerina is an exquisite combination of an athlete and an artist. Ballerinas are dedicated individuals driven to their profession to which they give both their body and soul. Girls aspiring to become a professional ballerina begin the many years of training at a very young age; however, boys can begin later in life and still have professional careers. Only a handful of young ballet girls from around the world will be accepted into the institution of a professional ballet school. Here they are cut off from wider society for an appreciable amount of time and together lead an enclosed formally administered life (Goffman, 1961, xii). Much of the literature on ballet and females is negative. Dance academies are graduating "more ballerinas than there are jobs, which has resulted in a highly competitive culture and marketplace" (Kelly, 2012, p.153). Ballet and feminism have had a long and complicated relationship. Germaine Greer once reportedly called ballet a "cultural cancer" and saw it as the personification of a sexist culture, a culture that stems from a patriarchal society" (Carter, 2001).

39. Bonita McCuaig

Understanding the Relationship Between *Thyasira cf gouldi* and its Symbiont Through Genomics

Six families of bivalves host chemoautotrophic bacteria on their gills. *Thyasira cf gouldi* is a

small clam that lives in the sediment of Bonne Bay, Newfoundland. Previously they have been shown to host three strains of symbiotic bacteria. This study describes the genomic characteristics of these symbionts, all sulfur oxidizing gamma-proteobacteria, hosted extracellularly on the gill filaments. The host is capable of deposit feeding and the symbionts provide supplemental nutrition. Bacteria matching the symbionts have been identified in sediments, and presumably inoculate clams each generation.

Sequencing was conducted on DNA extracted from thyasirid gills containing symbionts. Each symbiont phylotype was sequenced to allow comparison of gene content. Sequencing was conducted on an Ion Torrent PGM. Reads were assembled using Spades, and annotation was done using the MG-Rast pipeline and PROKKA. A supplementary study sequenced 16S rRNA and RuBisCo genes from 45 host individuals to measure the diversity of the symbiont population.

Assembly resulted in fragmented draft genomes. 16S rRNA and RuBisCo revealed that individual clams can host more than one strain of bacteria, with low host-symbiont specificity. Genomic analysis showed no signs of the genomic reduction often observed in bacteria that are restricted to life within a host. Most of the genes identified were shared by all three genomes, although each contained unique genes as well. Thyasirid symbionts maintains diverse metabolic capabilities. This facultative relationship varies greatly from that in obligate symbioses and may allow insights into the establishment of symbiotic relationships.

Keywords: Symbiosis, genetics, host-symbiont interaction, evolution

40. Olivia F. Vila

The Unexplored Potential of Natural Climate Variability in Social Science Climate Change Research

While there is evidence that a person's climate and weather experiences can influence their attitudes towards climate change, current research typically focusses on a very limited fragment of personal climate and weather experiences. Longer-term climate variability has mostly been neglected in this context; this presents a problem, because longer-term variability can obscure or amplify perceived change in any particular region over the course of multiple years to several decades. The purpose of this research is to obtain detailed descriptions of personal experiences of climate variability and to begin to identify the language that individuals use to conceptualize and describe climate variability. Through in-depth one-on-one interviews and focus group discussions, this research will provide insight into the experiences of local climate variability among long-term residents of Newfoundland and Labrador. This research will be a step towards understanding the extent to which variability should be considered in human dimensions of climate change research, and provide a necessary foundation for other social scientists to further explore this topic. Ultimately, through an improved understanding of variability perceptions and effective communication schemes, this research will provide guidance for discussions about climate change that are more meaningful and relevant to the public. Project goals and preliminary interview results will be discussed, along with proposed communication approaches for the focus group discussions.

Keywords: climate variability, climate change, perceptions, language, local experiences, community, weather, qualitative research

41. Melissa Cook

Improved PAH extraction: a journey from Soxhlet to ASE

Lukas Kohl, Geert Van Biesen, Chris Parrish, & Penny L. Morrill

I will present a new method for extracting organic contaminants from harbour sediments that are suspected of being contaminated with crude oil.

A certified sediment standard with known polycyclic aromatic hydrocarbon (PAH) concentrations was used to test and optimize organic extraction methods. Three different techniques were tested: Soxhlet extraction, accelerated solvent extraction (ASE) with an external silica gel column, and ASE with an internal silica gel column.

It was determined that the ASE with the internal silica gel column had the greatest recoveries, was the most reproducible, required the least amount of solvent, and was the most time efficient. This method was then applied to sediment samples collected from two different bays on the west coast of Newfoundland. There have been reports of several abandoned oil wells in the Port au Port Bay that are leaking an oily substance; therefore, sediment samples from Port au Port Bay and St. George's Bay, as a background site, were collected. These sediments were extracted using ASE with the internal silica gel column for PAH and alkane identification and quantification to determine if hydrocarbon contamination from the leaking oil were contaminating the sediments in the bay. While alkanes were detected in the sediments, PAH concentrations were all below detection limits.

Keywords: Oil, hydrocarbon contamination, alkanes, PAHs

42. Leanna Butters

Identifying the Built-space Impacts of Fly-in/Fly-out Mobility in Deer Lake, NL

With the growth of mobility studies in the social sciences, employment-related geographic mobility (E-RGM) has been subject to much attention. In particular, long-distance commuting (LDC), such as fly-in/fly-out (FIFO) mobility, has been recognized as impacting the patterns, nature and growth of mobile work in resource sectors internationally. With this recognition, a new community type, 'source hub', has been identified, adding to the complexity of LDC and FIFO studies. Existing literature suggests that comprehensive studies on FIFO source hub communities are lacking; however, it appears that built space, such as airport infrastructure, affordable housing, and access to services and/or amenities, may be key characteristics in the functioning of these communities. This presentation presents the community of Deer Lake NL as a potential source hub community. It also discusses built space change in Deer Lake attributed to FIFO E-RGM from 2000-2016 and perspectives on how these changes have impacted the community. Overall, it argues that the study of source hub communities and built space change in this context may contribute to regional development, planning and policy discussions and is thus worthy of consideration.

Keywords: Fly-in/fly-out, community impacts, built space, employment-related geographical mobility

43. Amita Goyal

Assessing leisure time physical activity among people with Spinal Cord Injury (SCI): Methodological issues and their implications

The proposed presentation will highlight the methodological issues identified in the literature related to the methodology and measurement of leisure time physical activity (LTPA) among people with spinal cord injury (SCI). People with SCI are one of the most inactive segments of

society. Research has indicated that people with SCI are vulnerable to poor physical and psychosocial health due to the disability associated with SCI; physical inactivity further contributes to poor health. These findings increased the interest in LTPA promotion to improve overall well-being of people with SCI; however, the focus of this area of research is on structured physical activity rehabilitation, not LTPA. LTPA has been a relatively unexplored area of research in this population. The following methodological issues were identified in a review of literature: 1) lack of tools specific to the SCI population for the measurement of LTPA; 2) specific operational definitions of physical activity are very broad and inconsistent; and 3) lack of LTPA guidelines for people with SCI. Together these issues lead to an inaccurate picture of levels of LTPA in general, irrelevant comparison of research findings, lack of distinction between different types of physical activities and thus, lack of understanding of their distinct effects on health and quality of life outcomes. The most important implication of these methodological limitations is that LTPA is still not well understood for its benefits and is not promoted as a health promoting intervention. These methodological issues, their implications and solutions will be discussed.

Keywords: Leisure time physical activity, Spinal cord injury, physical activity, methodology.

44. Elnaz Bodaghkhani

Climatological Perspectives on Fog from the Hibernia Platform

Frequent regional advection fog exerts a significant impact on the Grand Banks of Newfoundland, and this impact increases with growth in local offshore oil developments. These fog events pose a significant hazard to marine and aviation activities. Improved understanding of regional fog process, climatology, and predictability could offer significant economic and safety benefits. Although this regional advection fog issue has been recognized for generations, efforts to fully assess the scope of the issue and reduce its impacts have been limited by a lack of long-term, reliable observations of the ocean environment. The advent of offshore oil platforms can help us address this data gap. These platforms provide stationary offshore observations, as they are required to collect visibility data in support of the marine and air traffic that service them. Operational marine weather reports in the form of MANMAR codes from these platforms provide a record from 1998 to present. These reports form the primary source of data for our research, and have been used to establish a detailed climatology of fog within the Grand Banks, including annual analyses, exploring seasonality and diurnal variability. By treating low visibility events as a point process, we further examine the climatology of fog event characteristics. Event duration, persistence of fog cover and coincident weather conditions are considered. These considerations help identify and classify distinct fog event types as well as provide a preliminary synoptic climatology. Results inform parallel efforts to develop fog identification and prediction tools for the Grand Bank region.

Keywords: Economic and Safety hazard, Marine Fog, Fog Climatology, Synoptic Climatology, Fog predictability

45. Anaer Nulahan Kazakh

Vowel Harmony in Optimality Theory

Vowel harmony is a well-known phonological process where the distribution of vowels is restricted to some extent within a domain. It has been idealized as a symmetrical system where a harmonic feature spread from one vowel to the next. However, even harmonic languages do have some irregular or disharmonic patterns. However, the topic has been rarely researched in

detail. This is especially true in less-documented languages.

In this paper, I will present original data from contemporary Kazakh (one of Turkic language), analyze backness harmony and rounding harmony under the framework of Optimality Theory. The paper aims to bring forth various issues surrounding the mechanism. We will explore Kazakh vowel harmony in terms of three sets of issues: First, what drives vowels to harmonize, and consider which vowel quality or position controls harmony. Second, how vowel harmony is halted, focus on neutral vowels in opacity and transparency. Third, how vowel harmony propagate in roots and suffixes. The goal of this paper is to illustrate surface disharmony is also a natural and expected component of harmonic systems, which contribute to the understanding of the nature and dynamics of phonological representations and processes.

Keywords: Vowel harmony; Kazakh; Backness harmony; Rounding harmony; Optimality Theory

46. Monuara Bagum

Air Pollution Control Acts/Policies in the US, EU and Canada: A Review

M. Bagum, T. Husain and M. Enamul Hossain

Air pollution is a direct health-related global environmental issue that also affects the living organisms, vegetation, water sources, even historical buildings (e.g. Taj Mahal, India) and certain air pollutants are liable for the climate change. The effects of air pollution to the green environment and human health are the most concern to the environmentalists over the world. The air s can be subdivided into four categories to understand its impact. Therefore, the legislative bodies feel the necessity to reform major policies/regulations over the world in the last few decades. The EU (European Union) and the US (United States) are pioneers targeting to control the air pollution. This paper offers a comprehensive review of air pollution control rules and regulations and the agreements among different countries including Canada. The comparison is discussed in accordance with the related factors among those countries. Generally, after taking proper actions against the air s, it shows the significant improvement by reducing the air pollution. In addition, the countries which are affected by the neighboring countries also have some noticeable progress in controlling air pollution after the proper agreements were set up among them. The comparative analyses of the data on air quality after the implementation of the new acts/regulations show the success of air pollution reduction strategies. This comparative observation helps the policy makers to take the proper steps for the future. This study facilitates to the policy makers of other effected countries about initiating proper acts/regulations towards the development of air pollution reduction.

Keywords: Acts and regulations, air pollution control strategy, air pollutants, ambient air quality, environment.

47. Vashti Campbel

Comparing psychiatric care in Newfoundland & Labrador with emerging best practices to address structural and systemic barriers to mental health for communities of colour

Newfoundland & Labrador's (NL) mental health care (MHC) system faces unique challenges with very high rates of schizophrenia, depression, suicide and substance abuse. With increasing refugee and newcomer populations who often lack social networks and have limited resources MHC systems must adapt to meet these needs.

Indigenous, immigrant, refugee, ethno-cultural and racialized (IIRER) groups experience language barriers, racism, higher rates of poverty and isolation and each have unique experiences of colonization and settlement. When combined, these experiences contribute to

negative mental health outcomes. While each IIRER group is culturally distinct, they face similar systemic challenges in MHC.

My research examines systemic racism in MHC – nationally and in NL – through transcultural frameworks, institutional policies and diagnostic texts from the perspectives of MHC providers and IIRER patients.

I will 1) analyze demographic and diagnostic data in Canada to understand rates of diagnosis and potential transcultural practice issues; 2) conduct a scan of policies and diagnostic methods related to MHC of IIRER populations and compare these with leading, evidence-based practices; and 3) examine personal narratives of patients and MHC-providers related to quality of culturally-based care in MHC settings.

Contributing to improved understanding of the effects of organizational culture on patient experiences, my findings will advance best practices for transcultural MHC, focusing on structural and systemic barriers in the clinical encounter. I will illuminate processes of social exclusion within MHC, and will examine best practices for NL and within Canada. Nationally, this work will advance policy discourse related to human, and health care rights.

Keywords: Newfoundland, Mental Health, Cultural Competence, Psychiatry, Qualitative Methods

48. Hope oludeko olusanya

Assessing the climate change vulnerability of freshwater fish species in Newfoundland and Labrador

Freshwater fish are rapidly declining in freshwater ecosystems in Canada making them vulnerable species. Climate change is expected to exacerbate this crisis in complex ways that could undermine current conservation efforts. Future climate change projections for Newfoundland and Labrador's freshwater systems, under worse case emissions scenario, predict increases in temperature and precipitation. This could promote physiological and behavioral responses that may drive some freshwater fish species to the point of extirpation or extinction. Adaptation planning usually involves setting goals to minimize species loss from climate impacts; however, the task of achieving these goals are usually shrouded with uncertainty and limited empirical data. This research aims to improve the decision-making process by providing a better understanding of which species are relatively more vulnerable and options to enhance adaptation. Vulnerability will be represented as freshwater fish's exposure and sensitivity to climate change. This research will employ a systematic assessment method which uses expert's knowledge as a supplementary knowledge base to characterize vulnerability. Secondary sources such as peer-reviewed literature and scholarly journals will be used to develop vulnerability metrics relevant to freshwater fishes. 20 experts from industry and academia will be engaged using an online questionnaire assessment to score each vulnerability metrics for individual freshwater species. Quantitative analysis tools such as univariate analysis will be employed to analyze and interpret expert scores. The findings will have implications for the adaptation of freshwater fishes to climate change.

Keywords: Freshwater, fish, climate change, vulnerability, conservation

49. Ayotunde Omosule

Exploring the water insecurity situation in Canadian Indigenous Communities; the efforts of the Flat Bay Indian Band in resolving its water crisis

Even though water is linked and connected to human survival globally, there are communities across Canada that do not have access to clean, safe drinking water, particularly, in many

Indigenous communities. The narratives on water insecurity in Indigenous communities in Canada have largely focused on the challenges and impediments to water security in such communities, leaving out the steps and efforts undertaken by Indigenous communities at addressing their water challenges. It is fundamental to understand the efforts undertaken by Indigenous communities at resolving their water challenges so that other smaller and rural communities may gain ideas and insights on how to resolve their water challenges. It is against the backdrop of this research gap that this proposed study seeks to show via a single case study approach how one of such Indigenous community in Canada; the Flat Bay Indian Band, Newfoundland, is approaching and resolving its water challenges. The lack of potable water in Indigenous communities in Canada suggests important inequities which might be better understood via the lens of environmental justice. Taking into cognizance the above, this study seeks to adopt the theoretical framework of environmental justice as a potential factor for investigating the water insecurity in the Flat Bay community.

Keywords: Water insecurity, Indigenous communities, Environmental justice, Inequities, Flat Bay Band

50. Ling Li

The Nature of Parent-child Storybook Reading and its Effects on Children's Language and Literacy Development

Parent-child storybook reading refers to an early childhood practice in which parents read storybooks with their child or children by various strategies. The first characteristic of this practice is that it is filled with social interactions between parents and their children. Observational studies have shown that parent-child interactions during storybook reading are highly regularized. Several didactic skills are frequently employed in storybook reading, such as labeling, pointing, reading, or questioning. Parent-child interactions during storybook reading are also progressive. The conversational devices varied from simple labeling, to labeling questions, and then to more eliciting dialogues. These high interactive and progressive features give parents good opportunities to define or explain new knowledge to their children and could also keep children active in their learning. Apart from the interactive quality, other characteristics, like rich of rare vocabulary and repeated exposure, are also indicated by researchers of making parent-child reading a rich context for oral language learning. In addition, children who received more storybook exposure in their early years tend to read more for pleasure in the future. Yet, parent-child reading is not panacea. Extant literature has shown that parent-child storybook reading has limited effects on children's early literacy development unless the reading process involves a print focus. This presentation provides an overview of the nature of the parent-child storybook reading and its effects on children's literacy and language development with an emphasis on the mechanism of the effectiveness of this early childhood practice.

Keywords: parent-child storybook reading; language; literacy; mechanism

51. Adam May

A study of hydrocarbon contamination originating from an abandoned oil exploration well in the Port au Port Bay, NL

Adam May, Melissa Cook, and Penny Morrill

A source of petroleum hydrocarbons has been noted seeping from an abandoned oil exploration well along the Shoal Point Peninsula in the Port au Port Bay on the West Coast of

Newfoundland. The petroleum hydrocarbon seepage has resulted in a visible oil sheen dispersing in the marine environment, which is believed to have originated from a damaged well casing buried along the shoreline. Due to shoreline erosion, the well casing is currently located in an intertidal zone, in which the source of the seepage is exposed during low tide and submerged during high tide.

A temporary well capped was commissioned by the Government of Newfoundland and Labrador Department of Environment and Conservation, yet the temporary well cap only seems to limit the seepage into the marine environment. It was previously noted the seepage rate was approximately one litre per hour. Since the well capping, the oil seepage is still present at a reduced rate, resulting in interspersed droplets of an oily sheen substance on the surface of the water.

Our objective was to investigate the hydrocarbon contamination radiating from the leaking well. The oil sheen, surrounding water, and shoreline sediment samples were collected at predetermined coordinates extending outward from the seeping oil well. Our research will examine the extent of the seepage, the chemical composition of the oil sheen, and the surrounding sediment and water.

52. Taylor Mooney

A community-based employment program for former prisoners: Strengths, weaknesses, and moving forward

Former prisoners tend to face barriers in their search for work that the general population does not. However, relevant programming can help mitigate these barriers. Participants in this study indicated that institutionally-offered programming was often not available to them and when it was, it tended to lack quality – perhaps due to a lack of personnel or budgetary restrictions. In light of this, community-based employment programs may be an effective response to helping ex-prisoners find work. This paper explores the strengths and weaknesses of a community-based post-incarceration employment program in Ontario and draws on in-depth, semi-structured longitudinal interviews conducted with 24 parolees over a three-year period. I reviewed any barriers former prisoners identified having faced in attempting to find work, and outlined facets of the employment program participants found helpful and unhelpful.

Consistent with the literature, I found that ex-prisoners appreciated the opportunity to learn strategies for job searching and resume construction and to participate in practice interviews. A large number of participants also identified a need for strategies to proactively disclose their criminal histories to potential employers. My intent is for the findings of this research to inform the development of employment programming, and as part of my presentation, I will outline my plans to apply these findings to existing employment programming offered in St. John's through working with community partners including the John Howard Society and Her Majesty's Penitentiary.

Keywords: employment reintegration, community re-entry, work transition, desistance, parole

53. Annika Beate Anderer

Food and political conflict

The American Revolution – crowds repeatedly lay siege on shop owners. (Smith 1994). 2007 - Mexicans take to the streets in protest over the price of Tortillas. (Keleman, Rañó 2011) These two examples are separated by centuries but showcase two common denominators of all communities throughout history: The vital role of food and the presence of conflict. The relationship between the two is the focus of this research, which pursues two very basic

hypothesis: First, food shortage creates a need of action. Those suffering from it need to change this condition in order not to starve. Two –sometimes overlapping- lines of action are possible: Trying to obtain resources from other actors. Or trying to rectify the cause of the scarcity, for example by pressuring their government to limit food prices. At this point the indispensability of food forces new actors to enter the political game and take agency in shaping their respective communities.

A second axiomatic assumption is that, in order to lead a conflict people need food. Consideration about food resources will therefore likely shape the strategies of conflict parties. These strategies can inflict food shortage on other factions, creating new cause for unrest as outlined above. So food cannot just be the cause but also both the result and “fuel” of conflict. A factor that is vital in the emergence of conflict is education about the food system – since only more in depth knowledge allows people to really take agency in shaping that system.

Keywords: Food - scarcity- social conflict – political agency - education

54. Daniel Sivira

Fluid-Rock Interaction between Silicon Dioxide (SiO₂) Nanoparticles and Standard Cores Mimicking Hebron Field Conditions for Enhanced Oil Recovery Application

Economically suitable and innovative techniques are becoming a main objective in the oil and gas industry. Adding SiO₂ nanoparticles to water for enhanced oil recovery (EOR) has been gaining grounds during the last few years because of the favorable laboratory results; however, field applications have yet to be tried. A goal of injecting nanofluids is to promote fluid-rock interaction; therefore, determining the level of interaction between the two is a key factor. This research aimed to study interaction between three SiO₂ nanofluids concentrations and standard cores through contact angle experiments; mineral liberation analysis (MLA); scanning electron microscopy (SEM); and inductively coupled plasma optical emission spectroscopy (ICP-OES), to predict EOR mechanisms using SiO₂ nanofluids in Hebron field. Standard cores were selected to represent the mineralogical compositions of Ben Nevis Formation, which is the most important reservoir in Hebron field. The SiO₂ nanoparticles were dispersed in seawater from offshore Newfoundland, and the oil used was from offshore Newfoundland. The contact angle measurements at Hebron Field temperature and pressure (62 °C and 19.00 MPa) showed that the maximum decrease occurred after 6 hours of aging the core plugs in nanofluids at 62 °C. Though adsorption of nanoparticles is believed to be responsible for changing the wettability of the rock, SEM images reveal that there is no evidence of SiO₂ adsorption on the rock surfaces. MLA and ICP-OES results also support that there is no adsorption.

55. Jenny Kim

Experimental Investigation of Enhanced Oil Recovery by Injecting Silicon Dioxide (SiO₂) Nanoparticles as Water Additive with Application to the Hebron Field, Offshore Newfoundland, Canada

The use of silicon dioxide (SiO₂) nanoparticles for enhanced oil recovery (EOR) is novel, and is attractive because of the cost effectiveness considering low concentrations required for enhanced oil recovery technique, and its surface-active properties for both interfacial tension reduction, and possible wettability alterations. In this study, the potential of injecting SiO₂ nanoparticles as water additive is experimentally investigated for EOR application in Ben Nevis Formation from Hebron Field, offshore Newfoundland and Labrador, Canada. Only 30% of its crude oil in Ben Nevis Formation from Hebron Field is projected to be recoverable. Therefore, the investigation of EOR method requires attention now, since first oil is expected in 2017.

The experiments for this study are designed to be as realistic as possible. Unique from the previous laboratory investigations that used deionized water or simple synthetic brine as a medium to disperse nanoparticles, the SiO₂ nanoparticles are dispersed in seawater obtained from Grand Banks, offshore Newfoundland, of which nanoparticles will be added to in the Hebron field. Interfacial tension, contact angle, and coreflooding experiments are conducted at Hebron field temperature and pressure (62 °C and 19.00 MPa). The results showed that the SiO₂ nanofluids decrease interfacial tension and contact angle, indicating positive impact on the oil recovery. Coreflooding experiments conducted using 0.01 and 0.03 wt% SiO₂ nanofluid with Berea standard cores confirm these results, as 0.01 and 0.03 wt% SiO₂ nanoflooding both increased additional recovery by 3.3% and 9.3%, respectively.

Keywords: Enhanced Oil Recovery, SiO₂ nanoparticle, Coreflood

56. Zhenlong Cheng

Yin and Yang: negative and positive regulations of COR-like phototoxin in plant pathogen, *Streptomyces scabies*

Streptomyces scabies is a Gram-positive bacterium that serves as the main causal agent of potato common scab disease in North America. Among the known or suspected virulence factors produced by *S. scabies* is coronafacoyl-L-isoleucine (CFA-Ile), which is a member of the coronafacoyl family of phytotoxins produced by several different plant pathogenic bacteria.

The biosynthetic gene cluster for producing CFA-Ile consists of genes encoding enzymes for metabolite production as well as genes encoding two regulators, CfaR and ORF1. CfaR, a PAS-LuxR family transcriptional regulator, binds to the promoter region of the biosynthetic genes and activates their expression. The DNA binding activity of CfaR was shown to be inhibited by small molecule(s) produced by *S. scabies*.

ORF1, whose gene is co-expressed with the *cfaR* gene, shows some similarity to the *E. coli* ThiF protein, which catalyzes adenylation of target molecules. Overexpression of *orf1* itself does not increase the production of CFA-Ile; however, overexpression of both *orf1* and *cfaR* significantly increases production, with levels higher than that observed when *cfaR* alone is overexpressed. Moreover, deletion of *orf1* decreases CFA-Ile production, suggesting that *orf1* plays a positive role in the production of CFA-Ile. Current efforts are focused on how ORF1 functions together with CfaR to activate phytotoxin production in *S. scabies*.

Keywords: coronafacoyl phototoxin, *Streptomyces scabies*, potato common scab

57. Lisa Fang

Inflammation-dependent activation of MCH neurons promotes obesity

The incidence of obesity is steadily increasing, affecting a fifth of Canada's population. During obesity, chronic inflammation in the region of the brain that regulates body weight, the hypothalamus, promotes increased weight gain; however, how this inflammation causes weight gain is not fully understood. A population of brain cells within the hypothalamus known as melanin-concentrating hormone (MCH) neurons have been implicated in obesity. Therefore, it is possible that inflammatory processes affect MCH neurons to promote obesity. To test this hypothesis, we fed rats a high-fat diet (HFD) or a control diet and recorded the activity of MCH neurons. We found that these brain cells are activated when rats are fed a HFD, leading to subsequent weight gain. This shows how MCH neurons link HFD intake to obesity. Next, we tested whether MCH neuron activation was a result of inflammation within the brain by applying an inflammatory molecule, prostaglandin E₂ (PGE₂), to rats fed a

control diet. In support of our hypothesis, PGE2 was able to activate MCH neurons similarly to a HFD. Moreover, this activation can be reversed in HFD-fed rats by inhibiting PGE2 production. Further work in our lab has determined the specific receptor that PGE2 acts through to activate MCH neurons.

In conclusion, HFD-induced activation of MCH neurons appears to be mediated by PGE2, implicating the role of hypothalamic inflammation in obesity. This project has elucidated the receptor required for MCH neuron activation, which can provide a novel target and insight into new therapies for individuals with obesity.

Keywords: obesity, hypothalamic inflammation, electrophysiology

58. Vincent Chireh

Trading water for gold; artisanal/small-scale mining along the pra river in ghana

Extraction of natural resources and its consequent implications for meeting basic human needs has been a subject of debate in the world for long. In Ghana, over 80% of the population is served with safe drinking water mainly from the White Volta and other river basins. The pollution of freshwater sources from minerals (gold, etc.) extraction through artisanal/small-scale mining in and around freshwater bodies threatens sustainable drinking water supplies. Artisanal/small scale mining hitherto seen as a traditional activity involving rudimentary means of mineral extraction by local people and reserved for them by the Minerals and Mining Act, 2006 (Act 703), has recently witnessed the influx of large foreign miners with modern mining equipment mining within water bodies for gold with/without legal operational certification. This research paper focused on the environmental justice implications of artisan/small-scale mining with emphasis on socio-economic and environmental impacts on water quality and communities within the Pra river basin. As an arm-chair research paper using the internet and library, literature was reviewed from journal articles, academic thesis, government documents and media publications. The paper discovered the use of mechanized galamsey operational methods with its ravaging environmental consequences of high levels of pollution to freshwater bodies and negative social impacts on communities along the Pra river basin and the country at large. Some recommended interventions including further research, policy and practices are therefore made to enhance effective supply of drinking water for communities along river basins.

59. Ukachi Lily Okpara

Analysis of the Impact of Land Dispossession in Africa

The concurrence of the world economic crisis coupled with the global food and energy crises has set off land grabbing hysteria in Africa, accelerating trends of large scale commercial farming and tenure re-arrangements favoring international agribusiness. This process raises a host of issues concerning the contemporary restructuring of agrarian relations and the recurring ways in which states use cosmographies of power and terra nullius narratives to remake places identified as empty, underutilized or underproductive (Raffles,2002).

Land dispossession is the wrongful, nonconsensual ouster or removal of a person from his or her property by compulsion, misuse of law, whereby the violator obtains actual occupation of the land (Legal dictionary, 2016). The environmental policies justifying enclosures is moving from conceptual mapping to a physical representation of development strategy (Raffles, 2002). According to a study by the World Bank over 70 percent of the large-scale land deals have been in Africa. Many of these countries are host to what is widely called “land grabbing,” or the aggressive foreignization of land and resources through a suite of land transactions and in

the name of food and fuel security (Zoomers, 2010). In this study, I review 8 articles of land dispossession impacts across Africa and examine the dynamics of large-scale land alienations through the lens of state projects and environmental policies.

Keywords: Africa, dispossession, enclosure, cosmographies of power, terra nullius.

60. Jenna MacKinnon

Effects of temperature and pCO₂ on essential fatty acid and energy supply at the base of marine food webs

Fatty acids are powerful indicators of energy efficiency moving throughout marine food webs. Among them are essential fatty acids (EFAs), a vital dietary requirement, as they cannot be produced by animals. My thesis project will identify EFAs in phytoplankton and zooplankton samples from the Canadian Arctic and Sept-Iles (QC), and I will use lipid class and fatty acid analyses to trace energy transfer and EFA composition changes between trophic levels. I will determine the significance of environmental stressors (temperature and pCO₂) on lipid and fatty acid composition, and hypothesize reasons for observed changes in composition. Ocean warming and acidification have negatively affected growth, reproduction, and survival of several marine species, as stressful environmental conditions can lead to changes in energy usage and transfer efficiency.

Lipids will be extracted from filtered plankton samples using a chloroform-methanol method, followed by lipid class determination and quantification using flame ionization detection (FID) (Iatroscan). Part of the lipid extract will be derivatized to isolated fatty acid chains, which will be identified using gas chromatography with FID. Compound Specific Stable Isotope Analysis of derivatized extracts will be used to determine specific isotope ratios of fatty acids.

By monitoring the effects of environmental stressors on EFA transfer efficiency in plankton, I can explain how zooplankton diet may be changing due to climate changes, therefore affecting the higher trophic predators. Marine EFAs, the omega-3 fatty acids, have important human health benefits, aiding in fetal cognitive development and cardiovascular health, emphasizing the importance of continues research in this field.

Keywords: Essential Fatty Acids, Environmental Stressors, Marine trophic Ecology, Plankton

61. Abigail Oppong

The Paris agreement and the regulation of international maritime transportation

The Paris agreement is viewed as the turning point in the multilateral fight against climate change yet the agreement was without reference to the regulation of international maritime transport which is one of the major sources of global Carbon dioxide (CO₂) emissions. This development raises questions about world climate change governance that need to be explored. However, this issue has received scant attention in the climate change governance literature. Understanding reasons and issues around exclusion of the shipping industry is important in making informed decisions in the future. This study therefore seeks to wage into debates about world climate change by answering the questions, what is the history of the debate around inclusion or non-inclusion of the shipping industry in international climate policy, particularly Kyoto? What are the driving factors for the exclusion of the regulation of maritime transportation within the Paris Agreement? And what would be the environmental implications of this exclusion for climate governance? The study will help contribute to understanding power plays around world climate change governance.

Keywords: International regime, Climate change, Paris agreement, Governance, Maritime

transportation.

62. Azam Sayadi

Improvements in fuel cell technology

The world is facing serious problems with the energy crisis in recent years. Fossil fuels are non-renewable and limited natural resources of energy, and their consequent pollution has become a very serious concern. The desire to improve urban air quality has led to the considerable development of fuel cell (a device which converts chemical reaction energy into electricity [1]) technology over the last 25 years. However, there are some imperfections in this technology, which decrease the energy efficiency, such as incomplete electrocatalytic oxidation of fuels. A better understanding of the electrocatalytic oxidation mechanisms and interaction of catalysts and fuels, and determination of the average number of exchanged electrons in terms of fuel cell efficiency will be effective approaches to deal with these sorts of problems and enhance the energy efficiency of them.

In our research, rotating disc voltammetry (RDV) and steady-state measurements have been applied to study the electrocatalytic oxidation of methanol and ethanol as fuel cell fuels. Since RDV emulates the hydrodynamic conditions of a fuel cell anode, it provides a less expensive, reliable, and controllable situation for study purposes. Our results showed that this technique could be applied to provide accurate stoichiometric and kinetic parameters, which are crucial for fuel cell applications [2, 3]. As a result for the first time, we showed that this method could also be a convenient and effective technique for estimation of the average number of the electrons involved in methanol and ethanol oxidation.

Keywords: Fuel cell, electrocatalytic oxidation, rotating disk voltammetry.

63. Meghann Livingston

Où la France rencontre l'Amérique du Nord: Archaeology of 18th Century Life at Anse à Bertrand, Saint-Pierre et Miquelon

French migratory fishing and the history of “Terre-Neuvas” ships leaving French port cities annually to fish cod in the waters off Newfoundland, has captivated the general public, historians, and archaeologists alike, yet the importance of Saint-Pierre et Miquelon has continuously been overlooked. Saint-Pierre’s sheltered harbour, among other geographic features, made this small archipelago an ideal place for carrying out fishing activities. Until the 19th century, Saint-Pierre et Miquelon experienced numerous changes in governance as a result of European geopolitical conflict. British settlers occupied the islands on several occasions throughout the 18th century but this is an aspect of the past neglected by historians. The primary objective of this research is to document both French and British occupations and lifeways in Saint-Pierre et Miquelon throughout the 17th and 18th centuries. Using methods of historical archaeology, including excavation of the site and archival research, this study of Anse à Bertrand in Saint-Pierre will investigate the occupations in relationship to changes in governance. While aspects of this research are already well underway, the excavations of the site will take place during Summer 2017 under the Memorial University of Newfoundland Department of Archaeology’s field school. Residents of Saint-Pierre and the surrounding community will be invited to join in this dig. At the foundation of Saint-Pierre et Miquelon’s first multi-year archaeological endeavour, this research will reinforce historic links between the archipelago and Newfoundland. It will engage the modern communities in collaborative fieldwork activities and enrich current understandings of the shared cultural heritage within the region.

64. Sean Manners

Climate Mitigation, Democracy and Human Rights: A Comparative Case Study Approach to Identify Key Democratic Principles for REDD+ Implementation

There is, by now, much to suggest that stronger and more tightly coordinated global climate policy is on its way resulting from the waning carbon budget which the IPCC reports the world to be on track to depleting in just three decades (2014); and the China-U.S Climate agreement committing both countries to transitioning to low carbon economies; and most importantly the Paris Agreement which “stresses the urgency of accelerating the implementation of the convention and the Kyoto Protocol in order to enhance pre-2020 ambition” (CP21, 2015). Among proposed climate policies, market mechanisms look set to take a dominant role. One such mechanism is REDD+ which has been endorsed by the Paris climate agreement as a viable way of fighting deforestation and reducing GHG emissions. The literature on human rights and climate change has been highly critical of the policy tool itself, this research will be shifting the focus from the policy mechanism to analyzing the political systems of the host states in order to identify gaps in their ethical and democratic principles which make them susceptible to human rights violations within the context of REDD+ implementation. This study will focus on two countries (Brazil & Indonesia) with the most REDD+ projects with the expectation is to provide a new perspective on how the existence and operationalization of democratic principles may contribute or prevent human rights violations within this context.

Keywords: Climate Policy, Human Rights, Ethics, Democracy, Internationalization

65. Leila Ziamajidi

Aspectual system in the verbs of Luri

Aspects are different ways of viewing the internal temporal constituency of a situation (Comrie, 1976:4). Aspect is one of the characteristics of the verb which is discussed in many languages in relation to tense and mood. In this paper we are going to analyze the aspectual system of one of the dialects of Luri, a west Iranian language which is spoken in south western Iran. The dialect which is discussed here is Luri of Doroud, one of the cities in Lorestan Province of Iran. Despite their similarities to standard Persian, the Luri dialects share features that set them apart as a group from the standard language (MacKinnon, 2011). In this dialect, we see some influences of Persian, the standard language of the country. The aspectual system in Luri of Doroud can be described by the ternary division between Perfective, Imperfective and Perfect aspect, like many other Indo European languages (see Hewson & Bubenik, 1997). Verbal constructions are based on two stems: past/ perfective stem (in the past tense, and perfect constructions), and present/ imperfective stem (in non-past tenses).

	Perfective	Imperfective	Perfect
past	emæm	dašt-æm mi-m-æm	ema-m-æ ema-m bi
Non- past	bi-ya-m	y-æm dar-em y-æm	

Table 1: The Aspectual system for the verb “to come” in Luri of Doroud

The result of this research shows the distinction between three different types of aspects in verbal system in Iranian languages, like many other languages of the world. These typological findings show the universal characters of different languages.

Keywords: aspect, perfective, imperfective, perfect, Iranian language.