

seventh annual 
UNDERGRADUATE RESEARCH CONFERENCE

March 21 + 22, 2014

Nipissing University, North Bay Campus



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Message from the Vice-President, Academic and Research

Hello Students, Visitors, and Colleagues:

Welcome to our conference. We are glad you are here.

This conference is important evidence that teaching and research are inter-related and that they can and do occur at different levels. While some people associate research with graduate level education, Nipissing is rich with opportunities for students to be scholars as they move through their baccalaureate degrees.

Our conference is also a vehicle for students from other universities to visit us and share their scholarship. To those who have traveled to participate in the conference as well as family members and parents who are here to support our student-presenters, thank you for joining us.

To our keynote presenters, many thanks for taking time from your busy lives to share your expertise. I am certain that each of us will gain new insights that will have meaning and application in our own pursuits.

Similar sentiments are extended to the North Bay Regional Hospital and Biomass Innovation Centre for their support of the conference. Partnership and community are core values at Nipissing University. We look forward to other scholarly collaborations in the future.

Finally, I would like to express appreciation to those who have made the conference possible: the faculty who have worked as part of the Faculty Advisory Committee for the conference, other faculty members who have mentored student-presenters from Nipissing and other universities, and the staff in the Centre for Flexible Teaching and Learning and Research Services. You make the difference for students.

Enjoy the conference.



Harley d'Entremont, PhD
Vice-President, Academic and Research

Message from the Chair of the Seventh Annual Undergraduate Research Conference

Welcome Participants and Guests:

It is my distinct honour to welcome you to the 7th Annual Nipissing University Undergraduate Research Conference. I speak on behalf of the conference organizing committee that has worked hard to bring this conference to life. We are proud of all the participants and are grateful to the families and friends who are here to support and cheer them on.

So what is this conference about? Simply put, the conference is a celebration of the research and scholarship being done by undergraduate students in various disciplines and professional programs at Nipissing University and universities across the province. This conference is also a demonstration of our University's commitment to a spirit of inquiry and continuous learning at all levels of the academic and life journey.

In addition to showcasing the work of undergraduate students, the conference is a venue for bringing exceptional guest speakers to the University and North Bay. Let me tell you a bit about this year's special presenters.

As our Friday evening keynote, **Jim Harris** is a leading thinker on change and leadership and was one of the first seven Canadians personally trained by Al Gore to present the slide show for *An Inconvenient Truth*. He is also one of just 12 Canadians licensed to publicly teach Dr. Stephen Covey's work, *The Seven Habits of Highly Effective People*. Jim's talk is going to challenge us to think about change and lifelong learning in the 21st century.

Saturday morning kicks off with a keynote by **Dr. Richard Wiggers** from the Higher Education Quality Council of Ontario. Richard will present a talk on employment and other opportunities for today's university graduates based on current research. This is a talk all of us will want to attend.

Also on Saturday, over the lunch hour, there will be a special guest panel by two doctoral students from Northern Ontario: **Professors Rob Graham** from Nipissing University and **Cindy Peltier** from Laurentian University. In addition to sharing some of their own research, Rob and Cindy are sure to inspire attendees to pursue education and apply a spirit of reflective research in all facets of their personal and professional lives.

I would be remiss if I did not mention a few new features of the conference. These include partnering with the North Bay Regional Health Centre and

Biomass as well as inclusion of the winners of this year's Common Book Common Ground essay-multimedia competition as conference presenters.

We are also proud of the double blind review process used to approve submissions.

Finally, there is a cast of important people without whom this conference would not have happened. Special thanks go to the members of the advisory committee: Steven Arnocky, Maria Cantalini-Williams, Justin Carre, Lanyan Chen, Nathan Colborne, Kathryn Ewers, Scott Fitzgerald, Ryan Graham, Nancy Maynes, Nozwelo Ndebele, Timothy Sibbald, Darius Sookram, Brian Thorn, and Erin Truswell. Sincere thanks for your commitment, energy, and time.

Likewise, the work of the following people has been critical to the success of this conference: Janet Ross from Research Services and the staff in the Centre for Flexible Teaching and Learning including Tom Church, Luke Durrer, Amy Hollingshead, Sam Kurtzer, Paula Millard, and Gavin Park. Without you, the conference would not be this wonderful celebration of undergraduates as thinkers and explorers.

Finally, special thanks are extended to Dr. Harley d'Entremont and the Office of the Vice President, Academic and Research. The support of Dr. d'Entremont is graciously appreciated.

With best wishes for an energizing and engaging experience,

A handwritten signature in cursive script that reads "Lorraine Carter". The ink is dark and the signature is fluid and legible.

Lorraine Carter, PhD

Chair, Undergraduate Research Conference Committee
Director Centre for Flexible Teaching and Learning

Nipissing University's 7th Annual Undergraduate Research Conference Agenda at a Glance

Friday, March 21		
Time	Program	Location
5:30 – 8:00	Registration	Student Centre Hallway
7:00 – 7:05	Welcome – Michael DeGagne, President of Nipissing University and Harley d'Entremont, Vice-President, Academic & Research Presentation of Common Book Award	The Weaver – B200
7:05 – 7:10	Introduction of Keynote Speaker – Lorraine Carter, Director Flexible Teaching and Learning	The Weaver – B200
7:10 – 7:55	Keynote Address – Jim Harris <i>Lifelong Learning: The Learning Paradox</i>	The Weaver – B200
8:00 – 9:00	Poster Presentations	Student Centre Hallway
8:00 – 9:30	Reception	Education Centre Foyer
Saturday, March 22		
Time	Program	Location
8:30 - 3:00	Registration	NU Cafeteria A246
8:45 -8:50	Welcome - Harley d'Entremont, Vice-President, Academic & Research	NU Cafeteria A246
8:50 - 9:00	Introduction of Keynote	NU Cafeteria A246
9:00 - 9:45	Keynote - Richard Wiggers, Higher Education Quality Council of Ontario <i>Learning to Work/Working to Learn: What is the Relationship Between a Postsecondary Credential and a Job?</i>	NU Cafeteria A246

9:45 – 11:00	Concurrent Sessions	
	#1 Student Life	A224
	#2 Aboriginal Culture	A226
	#3 Arts, Culture and Religion 1	A228
	#4 Gender Studies 1	A236
	#5 Citizenship and Civic Life	A242
11:00 – 11:15	Break	
11:15 – 12:30	Concurrent Sessions	
	#6 Math and Theory	A224
	#7 Arts, Culture and Religion 2	A226
	#8 The Mind	A228
	#9 Gender Studies 2	A236
12:30 – 1:45	Lunch with Special Guests Rob Graham, Nipissing University and Cindy Peltier, Laurentian University	NU Cafeteria A246
	<i>Reflecting on the Doctoral Journey: Lessons about Life and Learning</i>	
1:45 – 3:00	Concurrent Sessions	
	#10 Northern Life	A224
	#11 Global Issues	A226
	#12 Arts, Culture and Religion 3	A228
	#13 Geography	A236
	#14 Children and Families	A242
3:15	Closing Remarks and Special Recognitions	NU Cafeteria A246

Nipissing University's 7th Annual Undergraduate Research Conference Agenda - Detailed

Friday, March 21

Time	Program	Location
7:00 – 7:05	Welcome – Michael DeGagne, President of Nipissing University Presentation of Common Book Award	The Weaver – B200
7:05 – 7:10	Introduction of Keynote Speaker – Lorraine Carter, Director, Centre for Flexible Teaching and Learning	The Weaver – B200
7:10 – 7:55	Keynote Address – Jim Harris	The Weaver – B200
8:00 – 9:00	Poster Presentations	Education Centre Hallway

Poster Presentations

Agnew, Jane	<i>Changes to the Leech (Nephelopsis obscura) Neural System in Response to Treatment with (+)-Cinchonine Alkaloid and Three Laboratory Analogues</i>
Albert, Graham	<i>An Analysis of the Effect of Male Vocal Attractiveness on Attention and Memory of Females: It's not just what you say that matters.</i>
Albert, Graham Norris, Kaitlyn	<i>The Wingman and the Mother Hen: Exploring Sex Differences and Individual Differences in Cooperative Versus Competitive Courtship</i>
Baird-Rowe, Colton	<i>Do Testosterone Responses to Competition Influence Ratings of Trust from Emotionally Neutral Faces?</i>

Bird, Brian	<i>Diminishing Mate Value Predicts Aggression Towards an Intrasexual Competitor</i>
Brault, Joshua	<i>How Governments Affect Economic Growth</i>
Cameron, Claire Dolmage, Lindsay Johnston, Madisen Lapensee, Jemanica Solymer, Kirsten Usher, Emily Wills, Meagan	<i>A Collaborative Children's Literature Book Club for Teacher Candidates</i>
Chen, Miao	<i>Determination of Antioxidant Activity in Extracts of Comptonia peregrina Plant Native to North America</i>
Dart, Michelle	<i>Comparative RAPD-PCR analysis of Eriophorum vaginatum and Eriophorum virginicum</i>
Dawkins-Williams, Tanika Lazure, Brittany Vaillancourt, Dana	<i>Discovering Jamaica: A Look into the Tourism Industry</i>
Elliott, Drew	<i>Use of HPLC to Isolate Antioxidant Compounds of Comptonia Peregrina</i>
Ferris, Tyler Grist, Corey	<i>Achieving Success through Social Media: A Jamaican Context</i>
Good, Tyler	<i>Remote Mild Traumatic Brain Injury Exacerbates Normal Age-Related Changes to Memory</i>
Higginson, James Smith, Astoria Twilt, Shelby Vibe, Zach	<i>The Power of Culture and its Impact on Jamaican Business Practices</i>
King, Emily Pomanti, Erin Thompson, Stephanie Cummings, Hillary	<i>Scub' em: Healthy Handwashing Habits for Children</i>
Lartz, Katlyn Forget, Stefane	<i>Journée du Cerveau: Brain Day for French Children</i>
Leung, Robin	<i>Trouble with Face-Name Memory in Normal Aging</i>
Moreau, Benjamin	<i>Incorporation of Salivary Biomarkers in Psychology, Neuroscience and Health Research</i>

Norman, Rachel	<i>Assessing the Relationship Between a Putative Marker of Prenatal Androgen Exposure, Aggressive Behaviour, and Threat-Related Amygdala Function</i>
Paul, Emilie	<i>Resiliency in Children with Concerning Sexual Behaviours</i>
Pearson, Marlena	<i>Age Differences in Processing Facial Expressions During Binocular Suppression</i>
Piche, Tina	<i>Intrasexual Competition Predicts Women's Attitudes and Intentions Toward Cosmetic Surgery</i>
Revell, Angela	<i>Complementary Roles of NADPH Oxidase and Cu/Zn SOD in Wound Response and Locomotor Function</i>
Slivitzky, Kira	<i>In Vivo Efficacy of Sweet Fern & Ginkgo Biloba In a Drosophila Model of Chronic Endogenous Oxidative Stress</i>
Szuchewycz, Tomas	<i>Psychedelic Distortion of Visual Statistical Learning</i>
Topping, Heather-Lynn	<i>Properties of Chaos in Dynamical Systems</i>

8:00 – 9:30	Reception	Education Centre Foyer
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Saturday, March 22

8:30 - 3:00	Registration	NU Cafeteria A246
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8:45 -8:50	Welcome - Harley d'Entremont, Vice-President, Academic & Research	NU Cafeteria A246
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8:50 - 9:00	Introduction of Keynote	NU Cafeteria A246
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9:00 - 9:45	Keynote - Richard Wiggers, Higher Education Quality Council of Ontario	NU Cafeteria A246
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9:45 – 11:00
Concurrent Sessions

Session #1: Student Life A224

- McCluskie,** Quintin The Food and Beverage Purchasing Behaviours of University Students Utilized Through Grocery Receipts
- Guty,** Johanna Changes in Dietary Habits of International Students at Nipissing University

Session #2: Aboriginal Culture A226

- Black,** Christopher The Truth and Reconciliation Commission - An Ontario Perspective
- Johnson,** Anna The Impact of Gladue and Other Criminal Code Provisions on the Sentencing of Aboriginal Offenders

Session #3: Arts, Culture and Religion 1 A228

- Connick,** Sarah Jayne Another Look at Social Comparison Theory: Exploring Valuations from a Symbolic Interactionist Approach
- Hodgson,** Catherine The Physical Impossibility of Death in the Mind of Someone Living
- Hosken,** Tyler The Poem as a Theo-Political Agent: The Sociology of Religion in Owen's "The Parable of the Old Man and the Young"
- Rett,** Lindsay Intimate Stitches: Mediating the Scientific Body through Craft

Session #4: Gender Studies 1 A236

- McKnight,** Stéphanie Deconstructing Social Categories: Objects, Practices and Gender Binaries
- McPhee,** Alicia Pretty, Pretty Princess: The Limiting Nature of the Disney Princess Brand
- Sabo,** Chantal Hegemonic Feminism Through Miley Cyrus

Session #5: Citizenship and Civic Life A242

- McCarthy,** Kylie The Irrationality of the United Nations: Proven Through the Dehumanized Lens of Major-General Roméo Dallaire
- Wynn,** Stefani Vietnam: Adjusting the Lens
- Everts ,** Matthew GI Soldier's Response to the American Military and American Government from 1968-1975: Understanding Why GI Soldiers Wrote Underground Newspapers
- Wilkinson,** Eric A Defence of Canadian Peacekeeping

**11:00 – 11:15
Break**

**11:15 – 12:30
Concurrent Sessions**

Session #6: Math and Theory A224

- Schizkoske,** Introduction to Continuum Theory
Cassandra
- Rotondo,** Devin Understanding Biological Signals through an Information Theoretic
Approach
- Blanchard,** Mathematics of Symmetry
Daniel

Session #7: Arts, Culture and Religion 2 A226

- Hall,** Dylan Examination of Civic Life in Hellenistic Athens and the Wider Greek
World
- Bradford,** Ai Khanoum-The Spread and Mixing of Greek and Local Cultures in
Braden the Frontiers of the Hellenistic World
- Lyons,** In Black and White: Opposing Portrayals of Evil in Peter and Wendy
Stephanie and The Lion, the Witch and the Wardrobe

Session #8: The Mind A228

- Nowaczek,** The Freudian Heterophenomenologist
Aaron
- Zaumseil,** Examining Recontact and Recidivism Among Inmates with
Blake Symptoms of Mental Illness
- Steele,** Myles Barriers to Mental Health Resources for Ontario Youth

Session #9: Gender Studies 2 A236

- McCormick,** #BlurredLines - An Intersectional Analysis of Cyber-Bullying
Makinna Legislature and Rape Culture in Western Society
- Augustin,** Transgressing Through the Circus: Queer Spaces, Historical
Kathleen Identities, and the Body in Djuna Barnes, Nightwood

12:30 – 1:45 Lunch NU Cafeteria A246

Lunch with Special Guests Rob Graham, Nipissing University and Cindy Peltier, Laurentian University

Reflecting on the Doctoral Journey: Lessons about Life and Learning

**1:45 – 3:00
Concurrent Sessions**

Session #10: Northern Life A224

- Feltz, Danielle** Social Dynamics of a Local Coffee Shop
Wegner, Elizabeth The Social Dynamics in Harris Learning Library, North Bay Ontario
Fraser, Johanna Questioning the Social Capital Framework: Trust, Social Cohesion, and Political Participation in Two Northern Ontario Communities
Robinet, Erika The Secret Life of Lingerie

Session #11: Global Issues A226

- Robbins, Julia** Under the Radar: Human Trafficking in Northern Ontario
Varley, Autumn Whose Farm Is It Anyways? A Historical Narrative of Agricultural Developments in 18th and 19th Century Penetanguishene
Elliott, Drew Nutrition and Disease
Taylor, Sara Adaptionist vs. Spandrelist

Session #12: Arts, Culture and Religion 3 A228

- Maxwell, Kaitlyn** The Exploration of the Importance of Isis through the Eyes of Ancient Historians
Chown, Cameron Digital Encoding and Analysis of Hardy's Fiction
Kain, Rebecca
Keifer, Randall
Trump, Tiffany
Wry, Evan

Session #13: Geography A236

Dobbs , Brandon	New Methods for Visualizing Large, Multidimensional Data
Jaynes , Kyle	GeoVisage
Boasman , Christopher	Geographic Information Systems: The Visualization of the Health Of Lake Nipissing

Session #14: Children and Families A242

Sheppard , Amanda	Parental Alienation in the Canadian Justice System
Scott , Jordan	An Empirical Examination of Collective Efficacy and Youth Violent Victimization in Toronto
Milne , Maria	Respite as a Critical Component in Care
Blohm -Gagne, Elise	Developmental Disabilities and the Right to Parent

3:15
Closing Remarks and Special Recognitions
NU Cafeteria A246

ABSTRACTS

AGNEW, Jane

Changes to the Leech (*Nephelopsis obscura*) Neural System in Response to Treatment with (+)-Cinchonine Alkaloid and Three Laboratory Analogues

A mixture of stereoisomers, (+)-cinchonine together with one methylated analogue and one oxidized analogue have been used to treat leech, *Nephelopsis obscura*, in order to understand the effect these chemicals have on movements of the leech in response to changes in potassium levels in the central nervous system of the leech. Methyl iodide was used to methylate the oxygen of the central hydroxy group of (+)-cinchonine. Trichloro-peracetic acid was used to oxidize the terminal vinyl position of the quinuclidine structure. Series dilutions of the cinchonine alkaloids were found to inhibit voluntary movement of leech subjects. The analogues were found to be less effective in inhibiting leech movement with the product of the peracid reaction having little effect. Lucifer yellow CH potassium dye was used to identify the presence or absence of potassium in areas of neural ganglia that had been dissected from treated leeches. These fluorescent dye tests, imaged on a confocal microscope, confirmed the behavioural test.

ALBERT, Graham

An Analysis of the Effect of Male Vocal Attractiveness on Attention and Memory of Females: It's not just what you say that matters

Many experiments have demonstrated that women find lower pitched men's voices to be more attractive than higher pitched men's voices (e.g. Jones, Feinberg, DeBruine, Little, & Vukovic, 2010). However, these studies either measure women's attractiveness ratings of male voices or the relationship between the pitch of men's voices and men's physical characteristics related to mating (Hughes et al., 2004; Jones et al., 2010). The purpose of the current experiment was to determine if the presence of an attractive (i.e., low-pitch) male voice effects women's behavior differently than the presence of an unattractive (i.e., high-pitch) male voice. Participants were young men and women age 18-29. The experimenter used a two phase working memory update task for the current investigation. The first phase of this task was a star counting task (SCT) with irrelevant background speech (i.e., sentences and numbers). In the SCT participants counted rows asterisk and alternated between counting forward or backwards based placement of addition signs and subtract signs in the stimulus display. Women should be more distracted, and take longer to complete the SCT, when sentences said by the low-pitch male voice are presented as irrelevant background speech. The second phase was a speech perception in noise (SPIN) task. In the SPIN task participants were required to identify and state the final word of sentences said in noise. Here women should be better able at identifying the final word of sentences said in noise that were previously said by the low pitched man's voice than they would be at identifying the final word of sentences previously said by the high pitched man's voice or new sentences.

ALBERT Graham; **NORRIS**, Kaitlyn

The Wingman and the Mother hen: Exploring sex differences and individual differences in cooperative versus competitive courtship.

There is a paucity of research exploring individual differences in cooperative mating behavior (i.e., helping friends meeting new romantic partners in social settings, setting friends up on blind-dates, facilitating "hook-ups" etc). The present study asked the question: Who cooperates with members of the same sex by facilitating their romantic interactions (cooperative courtship) and who purposefully impedes such interactions (competitive courtship)? In a sample of 206 undergraduates (Mage = 21, SD = 4), we explored whether mate-value, reciprocity, altruism, intrasexual competition, sociosexuality, and envy predict cooperative and competitive courtship. Results showed that men held more positive attitudes toward cooperative courtship, $t(1, 203) = 1.98, p < .05$, and women held more positive attitudes toward competitive (preventive) courtship, $t(1, 204) = -2.63, p < .01$. Results showed that for men and women, positive attitudes toward cooperative courtship were predicted by their own mate-value (men: $b = .51, p < .05$; women: $b = .34, p < .001$) and by beliefs in reciprocity (men: $b = .41, p < .01$, women: $b = .20, p < .05$). A similar pattern of results emerged for cooperative courtship behavior. Moreover, in women, intrasexual competition marginally-predicted competitive courtship attitudes ($b = .16, p < .07$) and behaviors ($b = .12, p < .07$). Results are discussed from an adaptationist perspective.

AUGUSTIN, Kathleen

Transgressing through the Circus: Queer Spaces, Historical Identities, and the Body in Djuna Barnes' Nightwood

The circus plays a crucial role in Djuna Barnes's modernist novel, *Nightwood*, by acting as a frontier for its main characters. Baron Felix Volkbein, Dr. Matthew O'Connor, Robin Vote, and the circus performers experience oppression from the viewpoints of hegemonic heteronormative society. These characters are categorized in society as an "other" based on their marginalized identities. The circus populace provides opportunity for the misfits to transgress social boundaries, however, not all of them are able to overcome the pressure and end up alienating themselves more than before. These characters experience social oppression based on their race, sexual orientation, class, and gender and until they find refuge within the queer space of the circus, they suffer. Felix is the only character who is unable to transgress within the circus and therefore he becomes the ultimate "other" who does not fit into any spaces of society. The circus performers use their physical bodies to overcome their alienation and by doing so, they challenge heteronormative society. Dr. O'Connor, a transvestite, and Robin, a lesbian, challenge socially accepted behaviours during the nighttime. Overall, this paper argues how the immense pressures placed on society to conform to the acceptable and normative standards create alienation and how through the circus, transgression is possible.

BAIRD-ROWE, Colton

Do Testosterone Responses To Competition Influence Ratings Of Trust From Emotionally Neutral Faces?

People reach consensus about what a trustworthy vs. untrustworthy person looks like – even based on emotionally neutral facial photographs. There is also evidence indicating that a single administration of testosterone influences ratings of trustworthiness from emotionally neutral faces. Specifically, women administered testosterone rate faces as significantly less trustworthy compared to placebo. In the current study, we examined the extent to which testosterone responses to a competitive interaction would predict ratings of trust from facial photographs. Men and women made trust ratings of emotionally neutral faces before and after a competitive task. Saliva samples were also collected before and after the competitive task. Our analyses will focus on examining whether changes in endogenous testosterone concentrations during the competitive interaction predict decreases in trust ratings. These findings have the potential to inform our understanding of the role of context dependent changes in testosterone in modulating social perception.

BIRD, Brian

Diminishing Mate Value Predicts Aggression Towards an Intrasexual Competitor

Researchers have linked low mate-value (MV) to aggression in males, but typically these studies are correlational in nature and with proximate indicators of MV (e.g., low SES, low intelligence). In the present study, we extended this research to experimentally manipulate self-perceptions of mate-value in 60 undergraduate males. Participants—under the impression that they were taking part in a study for a high-profile dating website to compare their paper-based versus new computerized matchmaking techniques—completed a series of three questionnaires (2 paper-based and 1 computerized). Participants received a randomly assigned bogus mate-value score (Hi = 92 out of 100; Low = 17 out of 100) for the computerized portion of the task after answering a variety of questions and submitting fictitious photos of themselves for facial symmetry analysis. Willingness to aggress against an intrasexual competitor was subsequently measured. We also examined the moderating roles of narcissism and self-esteem in predicting two forms of aggression (indirect or physical) in this competitive situation. Results indicated that males in the low MV condition were more indirectly and more physically aggressive than males in the high MV condition, regardless of baseline narcissism and self-esteem scores. These relationships were moderated by narcissism such that males in the low MV condition who were also high in narcissism, were the most likely to aggress. Results are discussed from an evolutionary perspective on aggression as a tool for mating competition.

BLACK, Christopher

The Truth and Reconciliation Commission - An Ontario Perspective

The Truth and Reconciliation process is an attempt to move forward from the devastation caused by the Residential Schools that were instituted in the 1870s. The schools were set up in an attempt to remove Indigenous culture and traditions from the upbringing of Aboriginal children. A key factor in this process involves the apologies extended to Indigenous people from the various parties responsible for the oppressive and abusive treatment and the subsequent intergenerational effects created by the Residential School experience. This paper will focus on the horrendous impact of the Residential Schools on Canada's Indigenous people, with a specific focus on Ontario. The apologies given by the various parties responsible will be closely examined and critiqued. There will be a discussion of the events that have

occurred since these apologies were extended and whether or not they are in keeping with the spirit of the Truth and Reconciliation process. An overall review of the Truth and Reconciliation Commission, its findings, and its recommendations will be completed. The paper will conclude by making some recommendations regarding how best to move forward as Canada tries to rectify the damage caused during one of the most shameful periods in its history.

BLANCHARD, Daniel

Mathematics of Symmetry

My paper is on the Mathematics behind Symmetry with relation to types of symmetries, magic's theorem, plane versus spherical symmetry, classification of symmetric surfaces and more. Under the guidance of Dr. Alex Karassev, I will be using John H. Conway's book *The Symmetries of Things*, and other various papers, to attempt to explore the various mathematical concepts involved in symmetry with great detail with various visual representations.

BLOHM-GAGNE, Elise

Developmental Disabilities and the Right to Parent

While society has begun to accept developmental disabilities to a greater degree, stigmas still predominate the discussion of sexuality and the parenting rights to persons with disabilities, thereby serving to invalidate disabled persons' reproductive rights, which is a key aspect of what it means to be an equal member of society. Within the paper I will examine the transition from institutionalization to integration; sexuality and reproduction in the framework of developmental disabilities; and historical sterilization policies and how they affect current practices of forced sterilization and abortion in persons with developmental disabilities. Using a Foucauldian analysis of disability theory, this paper will argue that this stigma is indicative of a wider attempt to eradicate developmental disabilities by preventing people with them from reproducing due to a fear that they will produce children with the same disabilities. Yet, despite attempts to eradicate developmental disabilities through the maintenance of stigmas and policies with regard to sterilization and forced abortion, the right to parent of developmentally disabled persons is increasingly being defended and protected by social scaffolding and the social safety net, and going forward we need to increase these scaffolding practices to ensure the full acceptance of persons with developmental disabilities in our society.

BOASMAN, Christopher

Geographic Information Systems: The Visualization of the Health Of Lake Nipissing

Lake Nipissing is an important lake in the province of Ontario and it is important to maintain the health of this lake for the reaping of its many benefits. Not only does this lake help keep the city of North Bay strong, through tourism and recreational activities, but it allows for many species of flora and fauna to flourish. Geographic Information Systems can be great tools to help the public gauge the health of an important lake such as Lake Nipissing. Geographic Information Systems will be used to help the public learn as much as they can through the visualization of the scientific data of the lake. It is the purpose of this paper to demonstrate the application of a Geographic Information System so that it can help the public understand hidden

correlations between different types of data. This was done through different methods of Scientific Visualization. The most important of which is multi-variate data Visualization. Using this method of Scientific Visualization and the Visualization Tool-Kit I was able to construct an application that is robust enough to give a user a both intuitive and knowledgeable experience in their journey to save Lake Nipissing.

BRADFORD, Braden

Ai Khanoum-The Spread and Mixing of Greek and Local Cultures in the Frontiers of the Hellenistic World

The intent of this paper is the exploration of the dissemination of Greek culture in the easternmost reaches of the Greek world in the Hellenistic period as well as the fusion of local cultural elements to the newly arrived Greek culture. To this end, the ancient city known now as Ai Khanoum is used as a case study based on the material culture found during the excavation of the site, most importantly art, architecture and numismatics. Due to the scarcity of materials from Ai Khanoum, and the lack of scholarly works dealing specifically with this subject, an examination of certain relics from the surrounding region of Bactria is also included in the interpretation of the cultural features of the site. Based on the evidence discovered, this paper argues that there was, without a doubt, a significant Greek presence at the Ai Khanoum site. Moreover, there was also a great degree of non-Greek cultural elements present as well, combined into a cultural melting pot of sorts. This paper then serves to expand the scholarly discussion on both Ai Khanoum and Bactria as a whole, while also shedding light on the cultural features present at the farthest reaches of the known world during the Hellenistic period, which is an area of study that was, until recently, seldom examined by historians.

BRAULT, Joshua

How Governments Affect Economic Growth

My research began as an inspection of how government influenced markets with regards to growth. It has since grown into a much more broad scope analyzing how governments can affect growth. The study uses cross-sectional time series analysis to examine a multitude of qualitative and quantitative factors and how they affect economic growth. I began by using a yearly report known as the Economic Freedom Index produced by the Fraser Institute, which is a combined measure of several variables denoting the degree to which an economy is a market economy. From there other independent measures were tested against growth. These include; Freedom House's measure of political and civil liberties, Transparency International's Corruption Perceptions Index, Societal-Systems Research measure for polity which ranks countries from autocratic to democratic, and finally using civil conflict data to measure the impact of war on growth. All models feature a series of control variables that include; average years of schooling, size of country, whether a country is landlocked, distance from equator, and the continent. All results were obtained using a variety of regression analysis models. The nature of the research has also warranted a significant sub-section to missing data analysis, which experimented with interpolation, imputation and multiple imputation methods. There has been a range of results specifically regarding the subjective variables (Economic Freedom, Political and Civil freedoms). While statistically significant results have come from logical sources such as civil war and corruption.

CAMERON, Claire; **DOLMAGE**, Lindsay; **JOHNSTON**, Madisen; **LAPENSEE**, Jemanica; **SOLYMAR**, Kirsten; **USHER**, Emily; **WILLS**, Meagan

A Collaborative Children's Literature Book Club for Teacher Candidates

This poster session shares the process taken and insights learned amongst 7 teacher candidates exploring children's literature through an extra-curricular book club. The theoretical framework that guides this work is a sociocultural one that considers Cambourne's (1998) conditions of learning, specifically immersion in texts, as well as the important role of social contexts in developing shared meanings around texts. As such, the goal is to document the journey of this volunteer children's literature book club as teacher candidates aim to foster a love of reading in learners, a goal set forward by Bainbridge & Heydon (2013). The methodology used is qualitative in nature, drawing on participatory action research (Kemmis & McTaggart, 2005) and taking a case study approach to sharing the "case" of this collaborative children's literature book club. The main question asked is "What role does a children's literature book club serve for teacher candidates?" Data sources include: online wiki reflections, hand-written journals, book club discussions and observations. Seven focus children's texts also served as the inspiration for the journals and ongoing discussions. While analysis is ongoing, initial themes arising include: (i) moments of connection, both personal and intergenerational; (ii) moments of disconnection, where expectations did not resonate with personal beliefs; (iii) literary observations leading to 'aha' moments; (iv) awareness of big ideas to foster discussion and lead to authentic meaning-making opportunities; (v) artful inspiration and attention to artistic details. Educational importance and connections to the literature will also be highlighted as teacher candidates bring together theory and practice.

CHEN, Miao

Determination of Antioxidant Activity in Extracts of *Comptonia peregrina* Plant Native to North America

Introduction: *Comptonia peregrina* is also known as Sweet-fern. This fern-like plant is a native deciduous shrub growing in dry sandy regions of eastern North America. It is widely used by aboriginal people as tea and spice, and it has also been historically recorded for its medicinal uses for preventing cardiovascular disease and used as a blood purifier. Objective: The antioxidant activity of methanol extract from Sweet-fern is evaluated using DPPH as a free radical and Trolox as a standard antioxidant. DPPH assay is based on the scavenging of the relatively stable purple DPPH converting it into a yellowish product. The degree of this decolorization reflects the amount of DPPH that has been scavenged and can be determined spectrophotometrically. Method and Material: The air-dried and powdered plant materials were extracted with methanol (CH₃OH) by Soxhlet extraction for 4 to 8 hours. Sweet-fern extract and Trolox were diluted with serial dilution technique, and concentrations used for both assays were 7.8 to 1000 µg/mL. Trolox assay results were used to create a standard calibration curve for measuring antioxidant activity for Sweet-fern extract. Result: In comparison with Trolox, the Sweet-fern extract showed higher DPPH radical scavenging activity. The concentration of extract required for EC₅₀ is 500 µg/mL. The Sweet-fern extract has higher percentage absorbance compare to Trolox. Conclusion: This result indicated that Sweet-fern extract has higher antioxidant activity compare with Trolox at very

low concentration and potentially biologically important antioxidant benefits can be demonstrated in future experiments.

CHOWN, Cameron; **KAIN**, Rebecca; **KEEFER**, Randall; **TRUMP**, Tiffany; **WRY**, Evan

Digital Encoding and Analysis of Hardy's Fiction

This project is a Digital Humanities project. Each student has been assigned two of Hardy's novels: one to read and one to not read. The goal of the project is to determine what information can be collected about the novels that are not read by designing text analysis tools for the novels that have been read. Each student prepares an encoded edition (using TEI-XML) of his/her first novel. We collectively have designed tools based on these five encoded novels to aid in the advanced study of the novels. These tools are then applied to the other set of five novels to determine the degree to which the tools can be used to yield insightful information about the texts. Some of the tools include a mapping of geographic locations in the novel based on important plot points. A complete physical and narrative map can be constructed of the novels we have read. By applying these tools to the novels we have not read we may successfully map the plot locations of these novels as well. Another tool involves occurrences of the names of characters. Finding that Hardy mentions his main characters with a high frequency in the parts of his books that have major turning points, we have developed a tool to help identify where the highest concentration of main characters' names are and tag it as a potential important plot point. The presenters will present the methodologies used, the problems encountered and solutions to the problems, and the degree to which the tools can be used for the advanced study of Hardy's novels and other English novels.

CONNICK, Sarah Jayne

Another Look at Social Comparison Theory: Exploring Valuations from a Symbolic Interactionist Approach

The theoretical concept of Inverse Designation Effects (IDE) is introduced through a critique of existing social comparative research. Despite the success and utility of social comparison theory, it has remained largely psychological. The idea that comparisons are highlighted or downplayed based on the intentional manoeuvrings of actors to meet specific goals is never considered in an explicit way, which from a Symbolic Interactionist approach, raises several questions. How do actors draw attention to oppositional comparisons, especially those where the disparity is wide, in an effort to send an intended message of valuation to others? How do actors manipulate the natural inclination for social comparison to make relative designations in effective ways? The theory of IDE explores the possibility that experimental studies may uncover dynamic social mechanisms that individuals in-group life enact as a means to send valuations through inversely implied signals and messages, in different directions, through the interaction order. Keywords: Inverse Designation Effects, Social Comparison Theory, Self-appraisal, Other-appraisal, Symbolic Interactionism,

DART, Michelle

Comparative RAPD-PCR analysis of *Eriophorum vaginatum* and *Eriophorum virginicum*

Random amplified polymorphic DNA polymerase chain reaction (RAPD-PCR) is a form of polymerase chain reaction wherein random sequences of genomic DNA are amplified through the use of arbitrarily selected oligonucleotide primers. RAPD-PCR analysis has been applied to assess genetic diversity of *Eriophorum vaginatum* (hare's tail cottongrass), a sedge native to Northern Hemisphere wetlands and tundra, which may possess potential for use in phytoremediation projects due to its ability to uptake heavy metals from soil. Previous research conducted at Nipissing University concluded that *E. vaginatum* plants selected from eight separate populations in New Brunswick, Quebec and Ontario were genetically identical, through the results of RAPD-PCR analysis. However, these results may have occurred due to binding of the selected RAPD primers to genomic sequences which happened to be identical between otherwise genetically non-identical individuals. Using the same 20 decamer primers and the same optimized PCR protocol as this previous research, I am performing a RAPD-PCR analysis on DNA samples extracted from both *Eriophorum vaginatum* and *Eriophorum virginicum* (tawny cottongrass), the latter being a species that has never before been analyzed using RAPD-PCR techniques. Following RAPD-PCR, 1% gel electrophoresis will be performed on the amplified DNA, and banding patterns for each primer compared between the two species. If it is found that banding produced by the selected primers does not allow one to reliably distinguish between *E. vaginatum* and *E. virginicum*, it is unlikely that these particular primers would allow one to draw accurate conclusions as to genetic diversity within *E. vaginatum*, suggesting that the previous research in this area should be reassessed.

DAWKINS-WILLIAMS, Tanika; **BRITTANY** Lazure & **DANA** Vaillancourt

Discovering Jamaica: A Look into the Tourism Industry

After remittances, tourism is one of Jamaica's largest sources of foreign earnings and one of the main reasons why the economy is afloat today. Despite years of negative or stagnant economic growth and the still prevalent consequences of the global economic crisis, tourism in Jamaica has remained resilient and, in fact, continues to grow from year to year. Within the broad spectrum of tourism, Jamaica is home to not only the all-inclusive resorts that tourists travel to by the thousands, but also eco-friendly options where tourists can be more in touch with nature, local culture, and promote sustainability. This poster will compare two of many resorts that Jamaica offers including Great Huts, an eco resort located in Port Antonio, and the Sunset Jamaica Grande in Ocho Rios, one of Jamaica's first and largest all-inclusive resorts. Taking a look at the location of these resorts, their business models, customer service as well as the atmosphere they provide, one can see that despite vast differences, they both offer an experience that keeps tourists coming back for more.

DOBBS, Brandon

New Methods for Visualizing Large, Multidimensional Data

It is not uncommon for scientific studies to generate very large quantities of data. Nipissing University in particular performs many geographic studies, creating huge amounts of data. A vital step in the interpretation of large data sets is visualization. However, traditional methods of visualization are often inadequate when dealing with big, multidimensional data sets. Simple scatter plots and spreadsheets lose much of their clarity when they are used to represent too much data. Many solutions to this problem have been developed, focusing on interactivity and alternative visualization

techniques. We present some alternative methods for big data visualization, with an emphasis on interactivity. These techniques allow for a more effective and intuitive approach to gaining insight on large data sets. As a demonstration of the effectiveness of these methods, the paper presents a visualization application that displays data collected through Nipissing University's Callander Bay Buoy Pilot Study. In the study sensors connected to a buoy took various readings from nine different depths over a long period of time. The developed application utilizes an interactive parallel coordinates plot and an interactive 3-dimensional graph to visualize the sensor data in an intuitive and interactive manner. Using these techniques the application takes a large, multidimensional data set and presents it in a way such that researchers can easily gain important insights on the meaning of the collected data. Interactive techniques and other non-traditional techniques of data visualization greatly increase the ability of analysts to interpret big data.

ELLIOTT, Drew

Use of HPLC to isolate antioxidant compounds of Comptonia Peregrina

Sweet fern (*Comptonia peregrina*) is an herb that is used in traditional medicine by indigenous peoples for a variety of ailments from illness to food preservation. Sweet fern has demonstrated antioxidant activities in lab, and has retained its antioxidant capabilities when metabolized by an organism. The antioxidant species present in the plant is unknown, along with all other compounds that compose the plant. High performance liquid chromatography (HPLC) was used to isolate the compounds of a methanolic extract to determine how many compounds were present. The fraction was radiated with differing wavelengths for optimal peaks. Another fraction was taken from the most promising peaks and further segregated for compound isolation. The isolated compounds of these experiments can be examined in further research to identify the metabolically active species of sweet fern, which can be used in medicinal research and development.

ELLIOTT, Drew

Nutrition and Disease

The science of nutrition is a reputedly complex study and has many associative factors that contribute to the overall nutritive health of an individual. North Americans are battling a rise of epidemics, including heart disease, cancer, diabetes and more, all of which have strong correlations to poor nutrition. Research seems to be leading to the possibility that physiological dysfunction is the result of malnutrition. Lobbyists of industrial and corporate interests heavily influence the public's awareness of health and nutrient recommendations. As well, dietary trends that are elicited by self-proclaimed health specialists heavily market claims that have little to no scientific justification. These are both factors of a gross distortion of general perspectives of wellness. It is my belief that a poor education in nutritional health is a main factor of disease prevalence in the human population. The physiological effects of food and how this translates into disease will be discussed by briefly exploring immunology, disease pathology and whether or not we really are what we eat.

EVERTS, Matthew

GI soldier's response to the American Military and American Government from 1968-1975: Understanding Why GI Soldiers Wrote Underground Newspapers

Between 1968-1975, American GI soldiers were at the height of resistance during the Vietnam War. This paper looks at how the GI underground press was instrumental in shedding light on the injustice of the American Military during the Vietnam War. Through an examination of many GI underground newspapers, this paper will answer why soldiers felt the need to write their opinion of the American military and government in these newspapers. The other part of this paper will be to address whether or not, American soldiers were actually still considered American citizens upon returning to the United States. In general these newspapers tell us that American soldiers during the Vietnam War felt that the American government was too focused on their imperialistic war, instead of trying to help their veterans back into American society.

FELTZ, Danielle

Social Dynamics of a Local Coffee Shop

As part of my Sociology and Anthropology qualitative research class, I undertook a qualitative research project on space and place in North Bay, Ontario. For my project I examined the social dynamics of a local coffee shop. I became interested in this topic because I wanted to study the way people interact at a coffee shop because it's such a friendly environment. My methodology included 15 hours of participant and interviews. This research reveals wider cultural norms about our society, such as our immersion in consumer culture, but also that we gather at coffee shops for wider social interaction.

FERRIS, Tyler; **GRIST**, Corey

Achieving Success through Social Media: A Jamaican Context

Gaining publicity and awareness of potential clients is a struggle that any organization may experience through their operations. Exercising the ability to connect with individuals locally to globally is indispensable to expanding the success of a business that can be attained through powerful social media tools. Through the Nipissing University School of Business iLead Jamaica Expedition, we consulted with an eco-tourism resort and a not-for-profit rehabilitation centre in Jamaica on how the utilization of social media can expand their reach and be used to help achieve each organization's distinct goals. Our research will focus on how these two organizations can maximize their use of social media tools to promote awareness and positive publicity that will augment their objectives. We will use our hands on experience at each organization in Jamaica and academic research to support our position on how utilizing the power of social media and effective implementation can offer tremendous benefits and return to both of the establishments.

FRASER, Johanna

Questioning the social capital framework: trust, social cohesion, and political participation in two Northern Ontario communities

The social capital framework has increasingly taken the place of the concepts trust and social cohesion. A major aspect of the social capital thesis is the expected

positive correlation between social capital proxies—trust and social cohesion—and political participation. The following paper seeks to explore this relationship and test whether the conclusions of social capital theorists, like Robert D. Putnam, hold true in North Bay and Callander, Ontario via comparative data collection and the use of telephone surveys. This is a pressing problem because despite recent slight gains in voter turnout in the most recent federal election, the general trend in the Canadian democracy of a declining voter turnout lines up with the state of democratic participation in most modern democracies; Political participation is waning. In terms of testing the social capital hypothesis, which states that higher levels of trust and social cohesion will lead to high levels of political participation, the results of the current project are mixed. For example, despite the disparity in levels of trust between North Bay and Callander, Ontario, levels of political involvement are comparable. And, though correlations were noted between trust and political participation in North Bay, there was little to no similar correlations in Callander. The study has a number of weaknesses, but these do not discount the research as a whole; rather, they point to a need for a more comprehensive study within these communities and Northern Ontario as a whole. No comprehensive research has focused on the problem of social and political behaviour in Northern Ontario. Further, this project influenced a deeper look at the effectiveness of the research methods used in this study, and motivated a more theoretical look at trust and social cohesion in relation to political behaviour.

GOOD, Tyler

Remote mild traumatic brain injury exacerbates normal age-related changes to memory

Informed by previous research suggesting similar white matter damage, the current research examined whether older adults and those who have suffered a mild traumatic brain injury (mTBI) display similar cognitive profiles. Memory was compared in 10 healthy older adults, 10 older adults with a remote mTBI, 10 healthy younger adults and 10 younger adults with a remote mTBI across a modified autobiographical memory interview (AI), a semantic priming task, and free recall of 16 unrelated words. In the AI participants were asked to recount events from their past in detail. These were subsequently transcribed and coded for proportion of episodic (specific in time and place) and semantic (general information) details included. We predict an additive interaction, such that both mTBI and older groups provide less episodic detail in their recollections, but mTBI aggravates existing age effects. We expect no differences in semantic content. Free recall and semantic priming tasks were included to provide converging evidence of this relative preservation of semantic compared to episodic memory. Results indicated that even though the groups were matched on the Mill Hill vocabulary scale, the mTBI participants in both age groups displayed no priming effect. Healthy older adults showed a muted priming effect as compared to healthy young. The older mTBI group displayed worse recall performance than its healthy counterpart and was the lowest scoring group overall. Results provide preliminary evidence that people who have suffered an mTBI display similar patterns of memory decline and preservation as older adults.

GUTY, Johanna

Changes in dietary habits of international students at Nipissing University

Background: Dietary acculturation has been defined as the process that occurs when members of a minority group adopt the food choices and eating patterns of the host country (Holmboe-Ottesen, G., Wandel, M., 2012). With a huge number of immigrants entering Canada as permanent residents, as well as for temporary study purposes, the health status of racial/ethnic minorities is an increasingly important public health issue. Past research has reported that the diets of temporary students are often adapted to the prominent diet in the host country, which could result in negative effects on health. Purpose: To determine the influence of studying abroad on dietary acculturation. Methods: International students (N=17; 10 females, 7 males) participated in 5 focus groups and completed a survey pertaining to their dietary habits (e.g. preferences, barriers to healthy eating, and cooking habits). Focus group questions were centered on the changes students have experienced in their dietary habits upon coming to Canada, barriers to healthy eating, and the availability of the foods they would normally eat in their home country. Discussions were audio recorded and transcribed verbatim. Qualitative data was analyzed using content analysis. Descriptive statistics were used to analyze the quantitative data. Application: This research can be used to help understand the factors that influence dietary acculturation of temporary migrants to Canada and then intervene successfully. For example, study abroad programs can develop strategies to ensure students are meeting their nutritional and cultural needs while abroad.

HALL, Dylan

Examination of Civic Life in Hellenistic Athens and the Wider Greek World

The purpose of this paper is to explore the nature and evolution of citizenship and civic engagement in the Greek Polis during the Hellenistic period. It aims to use the Hellenistic polis of Athens as a case study for the wider Greek world, in order to contest claims made by those scholars who argue that the civic engagement of a polis' citizenry began to decline or die off entirely in the Hellenistic Period, and that the Greek polis system began to crumble as a result. Indeed, this paper will provide a myriad of examples from the polis of Athens in order to argue just the opposite — that while the nature of citizenship did, indeed, continue to evolve in accordance to the environment around it, civic engagement remained a priority for the citizens of a Greek polis. It will also argue that Alexander's crossing of the Hellespont, and the influx of Eastern culture that supposedly resulted from it, had little to no affect on civic engagement in the Greek polis, other than to alter its nature. This paper will also attempt to explain why some scholars maintain that civic engagement was choked off by the events of the Hellenistic period, as well as to show that while the acts of the ordinary citizens were eclipsed by the acts of extraordinary monarchs of the Eastern Successor kingdoms, they were neither invisible nor inconsequential.

HIGGSON, James; SMITH, Astoria; TWILT, Shelby; VIBE, Zach

The Power of Culture and its Impact on Jamaican Business Practices

For this project, we have researched the key differences between the working environments of Canadian and Jamaican organizations. We have analysed topics such as cultural differences, motivating staff, training, recruitment & selection, and efficiency. We collected this information through secondary research, and primary

research through observation and interviews conducted at a small eco-resort and a Homeless/Rehab Shelter while in Jamaica on the iLead Jamaica Expedition 2014. We will compare and contrast business practices at these two operations to the business practices and culture we are familiar with in Canada. We will use comparative measures such as the Hofstede Cultural Dimensions Theory and Trompenaars' Seven Dimensions to help illustrate how culture can create such different business environments.

HODGSON, Catherine

The Physical Impossibility of Death in the Mind of Someone Living

In this presentation I discuss Damien Hirst's work *The Physical Impossibility of Death in the Mind of Someone Living*. I propose to answer the question if Hirst's piece is art or not. I look at historical perspectives and definitions of art. Starting with Winckelmann's and early perspectives of art as imitation going through formalism, Marxism and up to Conceptualism. I argue that even though this work of art may be difficult when you first approach it, this work does fit many ideas of what art is throughout the history of the study of art history.

HOSKEN, Tyler

The Poem as a Theo-Political Agent: The Sociology of Religion in Owen's "The Parable of the Old Man and the Young"

This paper places the theories of Max Weber's *The Sociology of Religion* within the context of Owen's poem to better grasp the efficiency of Owen's commentary on the contradictory relationship between WWI English Nationalism and Christian ethics. Owen uses the analogy of the Akedah, or "The Binding of Isaac", to make clear the precise divergence between the wartime (necessary?) Nationalist ethic and Christian morality. In 16 lines, Owen covers the issues of vengeance, sacrifice, and violence, and how the nations' treatment of these issues ignores what ought to be self-evident morality. My paper analyzes the poem based on its omissions and subtle alterations to the primary text (King James Version) with Weber's observations and theories providing supplementary commentary. While it is clear what Owen's intentions were in writing this poem, it is his execution I dissect and examine to the smallest detail.

JAYNES, Kyle

GeoVisage

This research is a continuation of previous investigations into geospatial imagery, environmental monitoring, image analysis, and decision-support algorithms for precision agriculture in Northern Ontario. This region poses unique challenges for environmental monitoring due to rapid weather changes and distinct microclimates. This interdisciplinary project involves the departments of Geography and Computer Science and Mathematics at Nipissing University. The research includes imagery such as unmanned airborne vehicle (UAV) imagery, soil maps; drainage maps; infiltration maps; satellite and yield maps, real time data from sensors on seven stations placed throughout the region, and algorithms to compute historical metrics such as growing degree days (GDD); crop heating units (CHU), and kriging, which is a geo-statistic technique for sparse geospatial interpolation that was used for interpolating and visualizing data between weather stations. The imagery, weather data, and historical comparisons are available through GeoVisage (<http://geovisage.nipissingu.ca>), an

interactive web-based front end. As an example of new technologies explored in this research initiative, yield maps which measure the productivity of small plots of land, are analysed. There are potential problems with yield maps due to an inaccurate measurement and improper use of technology, as described in previous studies. As a result, one of the focuses of the research is to determine the applicability of the data gathered through this method and whether it can be used in other ways that do not heavily rely on accuracy but still meets the needs of precision agriculture. Ultimately it is hoped that this research will benefit Northern Ontario producers, provincial and federal government agencies, and agricultural scientists in accessing crop productivity and broadening the knowledge, implementation, and usefulness of precision agriculture in this increasingly important region.

JOHNSON, Anna

The Impact of Gladue and other Criminal Code Provisions on the Sentencing of Aboriginal Offenders

Over the past several decades, the overrepresentation of Aboriginal offenders in Canadian prisons has escalated leading to several sentencing reforms. The recognition of this overrepresentation has led to the government's first sentencing reform with the introduction of Bill C-41 and the codification of section 718.2(e) in the Criminal Code of Canada in 1996, which encourages sentencing judges to consider alternative sanctions to incarceration when sentencing Aboriginal offenders and to consider the special circumstances and systemic issues Aboriginal peoples often face (Welsh & Ogloff, 2008; Pfefferle, 2006). In 1999, in *R. v. Gladue*, the Supreme Court of Canada provided clarification and framework for judges to interpret and apply s. 718.2(e) when determining an appropriate sentence for an Aboriginal offender (Pelletier, 2001). This research will evaluate whether these provisions are effective at reducing the overrepresentation of Aboriginal offenders in Canadian prisons by examining the sentencing of Aboriginal offenders in the province of Manitoba from 1990 to 2012. By examining sentences both before and after the 1996 provision, it will be possible to identify if the provision had an effect on how judges sentenced Aboriginal offenders. In order to examine the effect of s.718.2 (e) on sentencing, data was collected from reported Manitoba homicide cases on the Quicklaw database. The results of this data collection will allow conclusions to be drawn regarding the effectiveness of the current provisions aimed at reducing judges' use of incarceration and will allow a better understanding of whether or not judges weigh Aboriginal status as directed by s. 718.2 (e) and the Supreme Court ruling in *Gladue* when determining a proper sentence for an offender.

KING, Emily; POMANTI, Erin; THOMPSON, Stephanie; CUMMINGS, Hillary

Scub' em: Healthy Handwashing Habits for Children

Hands are important; they help children to eat, play and have fun. But it is important for children to wash their hands because every year, thousands of school days are lost due to illness. It is estimated that this number could greatly be reduced if children washed their hands regularly. Good hand hygiene in children will help to prevent the spread of germs that cause common illnesses, such as colds and stomach upsets, both at home and at school. Recent studies have shown that hand washing is by far the best way to prevent the spread of many illnesses. It is for this reason that we are working with with the North Bay Parry Sound District Health Unit and elementary schools to educate children on the importance of adopting good hand

hygiene practices in order to keep both themselves and others healthy. Not only are we educating the children; we are teaching the upper grades how to teach the younger grades so that there is total school uptake of the healthy hand washing habit.

LARTZ, Katlyn **FORGET**, Stefane;

Journée du Cerveau: Brain Day for French Children

Brain Day is an informative half-day injury prevention program for grade 4 to 6 students that has a focus on protecting the brain with a properly fitted helmet. Brain Day is a hands-on program, which includes activity booklets, helmet fitting guidelines, and creative activities that is presented cross Canada. Students learn about different parts of the brain, basic neuroscience vocabulary, and how and why it's important to protect their brain and spinal cord. By bringing this program into the classroom, community health nursing students are giving elementary students a new awareness of the brain and spinal cord, and providing them with simple strategies to prevent injury. Community Health Nursing students in partnership with Parachute and Connecting Community Partners in Injury Prevention developed and implemented a French Brain Day program. This not only involved creating a presentation to be utilized provincially, but also a mentorship program within the French school system which encourages high school students, who volunteer in the No Regrets program, to mentor and teach grade 4 -6 students. Reaching the francophone community is a critical step in educating ALL Canadian elementary school students about brain injury prevention.

LEUNG, Robin

Trouble with Face-Name Memory in Normal Aging

Remembering people's faces and names is a major concern for older adults. Proficiency appears to be linked to one's ability to form associations between units of previously unrelated information. Memory performance also depends on the degree of environmental support available to help encode and retrieve target information. Past studies used static photos and visually or auditorily presented names as the to-be-remembered stimuli and have shown a significant age-related decline in performance. Such studies may be overestimating the age-related deficit as there is little environmental support offered during encoding. We examined whether presenting face-name pairs within a more dynamic and real-world context during encoding could alleviate age-related memory deficits. In order to afford a richer encoding experience we presented faces within video clips in which individuals introduced themselves to the participant. Younger and older adults were introduced to 20 face-name pairs presented one at a time sequentially, and made either gender decisions or subjective judgements about whether the face matched the name as a manipulation of the level of processing at encoding. On a later recognition test, participants identified face-name pairs as correct or incorrect. Incorrect pairs were recombination of studied faces or names with new faces or names. Older had a poorer hit-rate compared to younger adults. Both age groups false-alarmed more when the lure pair consisted of a new face recombined with a studied name. Results suggest age deficits persist even when environmental support is rich. The level of processing during encoding does not influence this pattern.

LYONS, Stephanie

In Black and White: Opposing Portrayals of Evil in Peter and Wendy and The Lion, the Witch and the Wardrobe

This essay examines alternating depictions of evil in children's fantasy. Through a close critique of J. M. Barrie's *Peter and Wendy* and C. S. Lewis's *The Lion, the Witch and the Wardrobe* this paper articulates how the presence of villains provides children with an early social awareness and understanding of consequences to corresponding actions. Using the tropes discussed in Northrop Frye's essay "The Archetypes of Literature" the classical paradigms of good and evil are presented in the two texts in conjunction with allusions to Biblical mythos. This merging of pagan and Judeo-Christian lore uniquely positions the novels to be accessible to a broader readership. The authors additionally utilize the imagery of the epic in contrast to the realistic elements in order to affix the connection between the tangible and intangible. Through complimentary uses of death imagery and a strong sense of the other both Lewis and Barrie illuminate the adult world for a child's eyes.

MAXWELL, Katlyn

The Exploration of the Importance of Isis through the Eyes of Ancient Historians

This paper discusses the use of Isis in ancient authors, specifically Herodotus, Arrian, Aeschylus, and Plutarch. The exploration led to the conclusion that the theory of Hellenization as a forced agenda may not work when discussing ancient Egypt. The cult of Isis was wide spread and recognized by major Greek authors before there was a large Greek population in Egypt, and this information points to the fact that religious culture was already mingling in the Classical period. Aeschylus and Herodotus wrote about the princess Io who was turned into a cow by Hera and chased by a gadfly. The belief was that Io ended up in Egypt and settled there, and the cow horns that Isis is often depicted with indicated that the two may have been the same person. This explanation would have been enough to make the Greeks comfortable with the idea of Isis before the Hellenistic age began. There is also a significant amount of discussion about Isis after the end of the Hellenistic period, which leads one to believe that the cult survived and even thrived rather than being assimilated into Greek culture. Arrian tells of the fact that Alexander built a temple to Isis in Alexandria, and Plutarch writes an entire biography on the goddess and her husband. In this period, Isis is related to Demeter, the Greek goddess of the harvest, rather than Io. These facts seem to indicate that religious culture interacted and blended to some extent to create the circumstances of Hellenization.

MCCARTHY, Kylie

The irrationality of the United Nations: proven through the dehumanized lens of Major-General Roméo Dallaire

The United Nations makes two major claims. The first claim is that the United Nations has helped approximately thirty-six million refugees avoid war, famine, and persecution (The United Nations at a Glance 2013). The second claim the United Nations makes is that it protects and promotes the human rights of individuals in person and through the use of eighty treaties and declarations (The United Nations at a Glance 2013). Therefore, the United Nations is delineated as a rational system used to protect the rights of individuals by instilling and keeping the peace at a global level. However, through the use of George Ritzer's work on the irrationality of rationality, and the combination of Max Weber's views on dehumanization with those

of Ritzer's, the United Nations can be seen as an irrational organization that has inflicted a great amount of harm. This claim can be proven specifically by the United Nations lack of involvement in Roméo Dallaire's quest to prevent the Rwandan genocide from occurring.

MCCLUSKIE, Quintin

The Food and Beverage Purchasing Behaviours of University Students Utilized Through Grocery Receipts

Background: University students have been stereotyped as having unhealthy eating habits such as high intakes of processed and convenience foods and increased alcohol consumption. This is concerning given the increased risk of developing diet-related chronic disease later in life. Objective: To characterize the purchasing behaviours of university students. Methods: Male (n=3) and female (n=15) students (Mage 20.56 ± 1.17 years, 78% upper year) completed a pre-collection survey asking questions about the amount of money spent on various food and beverage purchases, adequacy of resources, eating habits, as well as standard sociodemographics (e.g. age, program, year, living arrangements). Students collected itemized grocery receipts for two weeks, then completed a follow up survey related to their grocery receipts (e.g. lost receipts, who the food was purchased for). The data was analyzed using descriptive statistics. Results: The average participant spent \$136.96 ± \$67.29 over a two week period. The mean amount spent at each type of store included grocery (\$33.29 ± \$31.92), restaurant (\$14.05 ± \$7.02), fast food (\$6.08 ± \$5.86), Liquor Control Board of Ontario [LCBO] (\$28.93 ± \$18.64), cafeteria (\$5.46 ± \$3.37), and other (\$10.12 ± \$4.00). The cost of various types of foods purchased from the grocery store revealed participants spent on average \$11.39 ± \$9.36 for fruits and \$14.43 ± \$12.17 for vegetables over the two week period. Implications: The results from this study can be used to help inform campus health initiatives, to promote healthy purchasing habits and to help improve the overall health of the students.

MCCORMICK, Makinna

#BlurredLines - an intersectional analysis of cyber-bullying legislature and rape culture in Western society

Over the last decade, there has been an alarming increase in the number of legal cases involving youth based sexual assault and rape in North American communities, where photographs and videos of the young women involved alleged incidents have been uploaded to social media sites. In each of these cases, the alleged and accuses perpetrators have been faced with a range of charges, including child endangerment, and creating and distributing child pornography, however, of the alleged perpetrators have been charged with sexual assault or rape. The most common charge is new to the legal system- cyber-bullying. Through the use of cyber-bullying charges, the legal system in North America is contributing to the ongoing existence of rape culture and the demoralizing treatment of women, especially in popular media. I will be building upon a number of theories to construct my own intersectional analysis, which will shed light on these multifaceted legal cases that have yet to be explored in an academic environment. I will explore why incomplete cyber-bullying laws have become the charge of choice in these cases, while existing regulations surrounding sexual assault and rape are not being employed by the court and legal system, and

aim to show the message that these actions convey about our overall societal values and beliefs surrounding hegemonic gender roles and sexuality.

MCKNIGHT, Stéphanie

Deconstructing Social Categories: Objects, Practices and Gender Binaries

My BFA directed work questions the ways in which particular objects and practices are gendered. In this project, I have incorporated critical theory, found objects, craft, and personal history into my artwork to create an installation that critiques the socially constructed idea that men and women are binary. To do this, I have created an installation that consists of found objects that are socially recognizable as masculine, (ie: tools, fishing and hunting equipment). Objects often encourage gender performativity, which can eventually lead to socially constructed ideas of gender norms and roles. My work will eliminate gender binaries by juxtaposing masculine tools with socially constructed ideas of femininity through craft. By manipulating "masculine objects" with craft, I will encourage the viewer to question why both practices are binary and to assess how women and men practices have been separated throughout history. My body of work is an installation piece that consists of old tarnished tools, fishing and hunting equipment and labour related items. These objects are personal and have been given to me by my family. Many of the tools are approximately sixty to seventy years old. The age of the tools symbolize the era in which men were primarily responsible for work. The objects also carry family history and personal connections. I manipulate the objects through dialogue and personification. I have carefully chosen my materials and mediums to relate to each object in a specific way. I have incorporated contemporary and historic craft to introduce aspects of different time periods. The objects have been manipulated using a variety of mediums, such as sculpture, painting, engraving and encaustic. The materials are chosen in regards to their relation with femininity and how they complement and react with the objects. Many of the objects after manipulation are still functional and have been used to create other works in my installation. The manipulated objects argue that women are capable of practicing many of the same activities as men.

MCPHEE, Alicia

Pretty, Pretty Princess: The Limiting Nature of the Disney Princess Brand

In this paper, I describe how the media which children consume is an integral part in the development of their social identity and a method by which they learn cultural ideology. As an extension of this assertion, I argue that this social self is bound by the limitations exemplified by the media being consumed. For this examination, because the media is a broad topic, I focus on the limitations that exist within the Disney Princess phenomenon and the heteronormative ideology portrayed therein. The restrictions evaluated in this paper include constructed gender roles, the "feminine beauty ideal," the negative perception of aging in women, and the underrepresentation of people of colour or homosexual preferences.

MILNE, Maria

Respite as a Critical Component in Care

My paper will be examining respite as a critical component in the care plan for special needs individuals. Respite is a family support service that provides temporary

relief from the physical and emotional demands involved in caring for a family member who has a disability. Respite creates greater opportunities for all family members to live actively and participate in community activities and allows parents/guardians time for themselves. I will be exploring this topic with a comprehensive perspective, looking at the three different angles involved in this service: Clients, Workers and Families/Caregivers. It is important to look at respite in all three perspectives because this care serves the individuals involved differently. I will also be using first person field observation, as I am currently a respite worker for two families. I will use research, stories from families in articles, as well as my own experiences to examine why there is an increasing need for respite services, the importance of these services and examining the blurred lines of respite care as it falls into a grey area of formal and informal care. As a respite worker you are there to teach and care for the individual however you are in the individual's home and are seen as part of the family. This grey area creates a unique work environment and experience that needs to be further explored.

MOREAU, Benjamin

Incorporation of salivary biomarkers in psychology, neuroscience and health research

Steroid hormones have profound effects on physiological, psychological, and behavioural processes important for survival and reproduction. Although clinical research typically performs blood draws in order to measure steroid hormones in plasma, a growing body of evidence indicates that steroid hormones present in saliva may offer a valid, non-invasive alternative, providing researchers with the opportunity to obtain multiple samples in both experimental and field settings. Here, we present the basic methodology for assessing steroid hormones using an enzyme-linked immunoassay technique. In addition, we present results from data processed in our laboratory at Nipissing University examining associations between salivary testosterone and cortisol with self-report, behavioral, neural, and health outcomes.

NORMAN, Rachel

Assessing the relationship between a putative marker of prenatal androgen exposure, aggressive behaviour, and threat-related amygdala function

Previous work indicates that the 2D:4D ratio, a measure of the relative distance between the index finger and ring finger, is a putative marker of prenatal androgen exposure. Also, there is some evidence that this measure is associated with aggressive behavior such that individuals with more masculinized digit ratios engage in heightened aggressive behaviour. A separate body of work indicates that people at risk for engaging in aggressive behaviour demonstrate increased amygdala reactivity to angry facial expressions. Thus, amygdala reactivity to angry faces may represent a neural marker for one's propensity to engage in aggressive behavior. Given that the amygdala contains an abundance of androgen receptors, we hypothesized that androgen exposure during the prenatal period may shape variation in finger ratios and the functioning of neural systems involved in threat processing. Here, we used a very large sample of men and women ($n = 468$) to examine the relationship between 2D:4D, threat-related amygdala function, and self-report aggression.

NOWACZEK, Aaron

The Freudian Heterophenomenologist

Sigmund Freud's novel approach to therapeutic psychology emerged from his experience as a practicing therapist. However, his idiosyncratic method contains inherent difficulties a practicing Freudian analyst must consider. Section I examines dream interpretation. Freud documents some of his own dreams along with the interpretations he could muster. I offer an alternative interpretation to Freud's own and then examine the inherent underdetermination faced by the dream interpreter. The difficulties faced by the dream interpreter are reminiscent of the difficulties noted by philosopher Willard Van Orman Quine confronting a linguist attempting to translate an entirely novel language. Section II looks at the methodology Freud himself would adopt while examining his patients. This method is comparable to the philosopher Daniel Dennett's method for phenomenology in its approach to studying the consciousness of a subject: heterophenomenology, a study of consciousness combining the first-person ("subjective") data reported by a subject with the third-person ("objective") data collected by an observer to describe the subject's phenomenological world.. The salient feature of this comparison lies in the set of assumptions underpinning the heterophenomenological method and Freudian analysis. The last section notes some underlying assumptions both the heterophenomenologist and the Freudian analyst adopt while conducting their practice. The entities posited by the assumptions underlying either method are comparable in the role both play supporting their respective frameworks. An important feature of both sets of entities is the ability to evaluate the framework they support according to its practical efficacy prior to evaluating the ontological status of the purported entities themselves. These ontological controversies should not factor into this instrumentalist evaluation of Freudian analysis. It is worth evaluating Freud's place in history charitably; an instrumentalist approach can allow us to consider Freudian theory based on its practical value as a therapy, while side stepping concerns related to the status of the Freudian analyst's ontological commitments.

PAUL, Emilie

Resiliency in Children with Concerning Sexual Behaviours

Resilience can be defined as the ability to recover from illness, depression, or adversity (Resilience, 2014, Merriam-Webster.com). Many children have the capability to be resilient and 'bounce back' from difficulties and much research has been conducted to understand these difficulties. However, there is much less research investigating resilience within samples of children identified with harmful behaviours. The goal of the current study was to explore resilience within a sample of children identified for concerning sexual behaviour (CSB). Multiple factors are included in the analysis such as family influences, interpersonal characteristics, and personal characteristics. Children with CSB require more research in order to identify the best method of intervention. Results of this empirical investigation along with implications for clinical interventions are provided.

PEARSON, Marlena

Age Differences in Processing Facial Expressions During Binocular Suppression

Socioemotional selectivity theory suggests older adults show greater attention for positive than negative information because shrinking time horizons place greater value on emotional satisfaction (Carstensen, Fung, & Charles, 2003). Compton (2003) maintains that younger adults show greater attention for negative than positive information because negative information often implies things that could threaten survival. In this experiment, both theories were tested using an adaptation of Costello's (2009) binocular suppression paradigm. Younger adults (ages 18-29) and older adults (ages 60+) viewed a computer screen through a mirror stereoscope, allowing simultaneous presentation of a different image to each eye. In one eye, participants viewed a masking stimulus (a dynamic visual noise pattern similar to television static). In the other eye, participants viewed a target stimulus consisting of a central fixation cross with a facial expression (happy, sad, angry, or neutral) located on either the left or right side of fixation. The same face was also presented on the opposite side of the fixation cross; however, this stimulus was masked so the expression was no longer discernible. Participants were asked to identify the location of the unmasked face (left or right of fixation) using a button response. Accuracy and reaction time were recorded for each trial. On the basis of socioemotional selectivity theory and the work of Compton (2003), we have made two predictions: (1) older adults will be fastest and most accurate to identify happy facial expressions, and (2) younger adults will be fastest and most accurate to identify angry facial expressions.

PICHE, Tina

Intrasexual Competition Predicts Women's Attitudes and Intentions Toward Cosmetic Surgery

In modern western society, there has been a significant rise in the number of women seeking cosmetic surgery, which can simultaneously pose serious and unnecessary health risk (Gabriel et al., 1997). It is important for researchers to begin to understand the psychosocial factors driving the decision to engage in risky appearance enhancement behaviors. The field of evolutionary psychology may contribute to this domain. From an evolutionary perspective, attempts to enhance one's appearance likely constitute an epigamic display (i.e., enhancement of visual cues to health and fertility) toward members of the opposite sex, as a competitive mating strategy for attaining and retaining reproductively-relevant resources or mating opportunities. However, little research has explored whether intrasexual competition does indeed relate to cosmetic surgery among young people. In the present study, we addressed this paucity of knowledge. Results of the present study found that intrasexual competition predicted 1) positive attitudes ($b = 0.73, p < .01$) and 2) intentions toward cosmetic surgery ($b = 0.51, p < .001$). Moreover, these relationships were mediated by physical appearance comparison ($b = 0.84, p < .001$ LL=.15 UL=.40 and $b = 1.07, p < .05, LL = .09 UL = .68$, respectively). These results suggest that cosmetic surgery may be, in part, a tactic for succeeding in the realm of mating competition.

RETT, Lindsay

Intimate Stitches: Mediating the Scientific Body through Craft

My paper uses my own art practice to examine the different ways medical images of the body dictate cultural understandings of the body through their associations with technology and science as authoritative knowledges. In my art practice, I use the mediums of print, cross-stitch and embroidery to recreate and re-envision medical images of brains, such as MRIs, fMRIs and PET scans. Ultimately I engage in and question scientific value systems that represent brains as superior ways of knowing the body from a culturally marked position of artist, feminist and storyteller. The focus of my work is to defamiliarize notions of objectivity and authority given to techno-scientific visual culture, like brain scans. My process is inspired by Donna Haraway's idea of hybridization and her notion of embracing medical technologies to reclaim a discursive authority of our bodies. Inspired by Lynn Randolph's paintings of female cyborgs, I combine and embrace different modes of representation, from magnetic resonance imaging to embroidering, in order to explore cultural expectations of neutral and natural. I reflect on the process and time it takes to create my pieces and how these processes influence and change the speed of consumption, from the instantaneous nature of technological imaging to a slow, methodical and meditative process of embroidery and needlework. Taken together, my paper focuses on my artworks to discuss the ways in which brain scans are presumed to be authoritative modes of viewing and understanding the body and how these medical images can create dominant discursive patterns, cultural practices and policies.

REVELL, Angela

Complementary Roles of NADPH Oxidase and Cu/Zn SOD in Wound Response and Locomotor Function

Reactive oxygen species (ROS), such as superoxide (O_2^-) and hydrogen peroxide (H_2O_2), are cytotoxic molecules capable of causing oxidative damage to a variety of cellular macromolecules. Despite their cytotoxic properties, ROS are necessary for cell signaling and are utilized by enzymes to facilitate a variety of physiological functions. We have employed genetic and pharmacological approaches to investigate the role of two such enzymes, Cu/ZnSOD & NADPH oxidase, in ROS-mediated signaling events required for wound healing and locomotor function in *Drosophila*. Our data demonstrate that that diminution of either Cu/Zn SOD or NADPH oxidase activity significantly reduces survival after wounding, and impairs locomotor activity in unwounded animals. The results suggest a model in which H_2O_2 generated by NADPH oxidase & Cu/ZnSOD plays an essential role in initiation of the eukaryotic wound response. In addition, although the superoxide generated by NADPH oxidase is essential for neuronal signaling, its generation under conditions where it cannot be adequately metabolized induces neuronal damage and dysfunction. Our data suggest potential therapeutic strategies for wound treatment and for maintenance of robust locomotor function in neurodegenerative conditions such as ALS.

ROBBINS, Julia

Under the Radar: Human Trafficking in Northern Ontario

While the subject of human trafficking for sexual exploitation is one that is normally associated with urban centers and international migration, contrary to popular belief, there is plenty to be concerned about domestically. Even so, the issue remains

almost invisible. This paper aims to address how human trafficking for sexual exploitation is understood in the context of Northern Ontario, its intersection with debates surrounding sex work and prostitution, and how this intersection is crucial to the current understanding of what we believe human trafficking to be. The stigmatization of sex work and sex workers have an enormous impact on the ways in which human trafficking for sexual exploitation and prostitution are understood in contemporary Western society, the opinion of many being that this stigma is hindering efforts towards change. This paper also aims to take part in a discussion of policy, examining the approaches affecting prostitution and sex work, known as 'abolitionist' and 'sex work/pro-rights', and how the current /suggested policies influence actions pertaining to the prevention of human trafficking for sexual exploitation. Little is known of the context of human trafficking for this purpose in Northern Ontario and so this paper hopes to create a better understanding of the issue as it stands, and how current/suggested policies surrounding the subject may affect this particular region.

ROBINET, Erika

The Secret Life of Lingerie

As part of a Qualitative Research Methods course I have been conducting field research to explore space and place in North Bay, ON. This presentation will explore the happenings of a lingerie store in North Bay, ON. Topics such as gender and age will be discussed, and their relevance towards shopping patterns will be explored. Qualitative research methods were used to conduct research. Participant observation, field notes, and interviews have been utilized to collect data. This research is of significance as it relates to our largely consumer-driven society.

ROTONDO, Devin

Understanding Biological Signals through an Information Theoretic Approach

In the event of an injury, simple tasks may become a great deal harder to perform. Treatment of an injury often requires a rehabilitative process over a period of time. As our body begins to heal our mobility improves and we are guided back to good health. Previous research in analyzing multiple biological signals revolve around two major categories: time-frequency techniques including time-frequency correlations, and information theoretic approaches which often provide information on physiological similarities. This research focuses on transfer entropy (TE), an information theoretical approach that is capable of assessing information transfer from one signal to another. This research utilizes both muscle sympathetic nerve activity (MSNA) and electrocardiograph (ECG) signals which are commonly used for rehabilitative purposes and assessments. Since the nervous system provides a response thereafter to show up in muscle activity, the goal of this research has been to compare transfer variations between these signals during a lower body negative pressure (LBNP) experiment and a baseline experiment between several individuals. Due to the strenuous computation associated with TE, a graphics processing unit (GPU) was utilized from the SHARCNET computing consortium, for massively parallel computation of TE. Although a GPU application of TE is new, an approximate 10 fold speedup has been observed. Results indicate that the TE provides supplementary information to the issue at hand not immediately obvious by time-frequency approaches. All required consent was obtained before the data was gathered. Ongoing research includes improving the efficiency of the method using the

compensated transfer entropy (cTE), employing mathematical toolkits for additional GPU acceleration (ViennaCL) and looking into higher level GPU technology (OpenACC).

SABO, Chantal

Hegemonic Feminism Through Miley Cyrus

It is through media images that societies values, morals, and standards are shaped and identities are formed. Individual's behavior, appearance, and emotions can become challenged and distorted when media tells them that what they believe is wrong. Through the process of hegemony the ideas that the media reflects become naturalized and encoded in to culture, so much so that society can no longer recognize their own beliefs from the medias. During the last few decades the notion of objectification of women's bodies has defined femininity and it is through the changing of culture that helps decides women's behavior and actions. Hegemonic feminism steams from this concept, in which mainstream feminists appear to prioritize the objectification of women; however, because the media's system of objectification has existed for such a long period of time challenging it become rather difficult. Miley Cyrus received a lot of media attention this year concerning her sexual performances and change in appearance, which has been highly scrutinized and criticized within the media. Many critics have dubbed her a bad role model, and over the top performer; however, when taking into account the hegemonic system of femininity and sexuality it is difficult to pin point whether or not Miley is any of these things. When looking only at how Miley presents herself within the media, and not what she say's in interviews and reports, Miley Cyrus proves to be an ambivalent figure in mass media that both opposes and supports hegemonic feminism.

SCHIZKOSKE, Cassandra

Introduction to Continuum Theory

The purpose of this research is to introduce basic continuum theory concepts. The definitions, theorems and examples provided should be used as a guide for understanding the goal of paper, which is to prove the proposed alternative theorem to the Anderson-Choquet Embedding Theorem. This theorem gives the conditions to prove that a given inverse limit of an inverse sequence can be embedded in R^2 . It is important to note that the theorem cannot prove the opposite, which is that a given inverse limit of an inverse sequence cannot be embedded in R^2 . The alternative theorem can be more easily used as its conditions are not as strict as the original. The theorem is stated and proved in section II. This paper is based on sections I and II of Continuum Theory – An Introduction by Sam Nadler.¹ The paper requires and assumes readers to have the knowledge of basic topology concepts.

SCOTT, Jordan

An Empirical Examination of Collective Efficacy and Youth Violent Victimization in Toronto

While a significant body of criminological research has focused on how high levels of collective efficacy are a protective factor against violent crime in neighbourhoods, much less research has focused on how these neighbourhood-level processes protect individuals from being the victims of violent crime. Using data from the Drugs, Alcohol and Violence International (DAVI) study, this research seeks to address this

gap in the literature by examining the influence of collective efficacy on violent victimization among a comparable sample of youth detainees, dropouts, and school students in Toronto. This research will add to the literature by examining how collective efficacy operates differently for a conventional sample of school youth and at-risk samples of detainees and dropouts. In addition, this research is among the first to examine the valence of collective efficacy outside of the United States, and provides a test of the theory's generalizability. Multivariate statistical models will be presented, and theoretical and policy implications will be discussed.

SHEPPARD , Amanda

Parental Alienation in the Canadian Justice System

Parental alienation occurs when a child becomes estranged from a parent, normally occurring throughout the course of a divorce or custody dispute. Justified alienation occurs when the actions of the estranged parent lead to the alienation of the child. Children can also be alienated from a once loved parent due to manipulation at the hands of the other parent, a phenomenon labeled parental alienation syndrome. Parental alienation syndrome has been linked with significant long-term consequences, including depression and low self-esteem. This study examines the presence of parental alienation within the Canadian justice system, with emphasis on identifying parental alienation syndrome. Using 107 cases, we conducted an in-depth analysis of how the gender of the presiding judge and the gender of the alienating parent may affect the finding of parental alienation and parental alienation syndrome. It was found that female judges were more likely to have a finding of parental alienation or parental alienation syndrome. Furthermore, fathers were more likely to be found causing their child to become alienate the other parent. These results are important for growing our understanding of parental alienation and parental alienation syndrome and may contribute to early identification, increasing the likelihood of reunification of parent and child.

SLIVITZKY, Kira

In Vivo Efficacy of Sweet Fern & Ginkgo biloba in a Drosophila Model of Chronic Endogenous Oxidative Stress

Previous studies have established that extracts of Sweet Fern and *Ginkgo biloba* are effective in protecting *Drosophila* larvae against oxidative stress during development. In this study, we have investigated whether these extracts also show in vivo efficacy in adult animals, by assessing their effect on longevity and locomotor function in *Drosophila* adults lacking the free radical metabolizing enzyme Cu/Zn superoxide dismutase (SOD). As a result of chronic endogenous oxidative stress, these animals normally show dramatically reduced longevity and significantly impaired locomotor activity. Amelioration of these phenotypes by oral administration of Sweet Fern and *Ginkgo biloba* would represent proof of principle of the therapeutic potential of active compounds within these extracts for humans, both in disorders relating to oxidative stress and in normal aging.

SZUCHEWYCZ, Tomas

Psychedelic Distortion of Visual Statistical Learning

Hallucinogen Persisting Perception Disorder (HPPD) is a poorly understood phenomenon characterized by visual disturbances that endure months or even years following use of a psychedelic substance (LSD, peyote etc.). These long-lasting visual disturbances often involve hallucinatory motion percepts resembling those encountered throughout the duration of the drug's effects. A prevailing paradigm in cognitive psychology understands the mind as a dynamic system, which is constantly learning and extracting statistical regularities from the environment. The mind then relies on this ever-updating base of prior knowledge to draw accurate, efficient inferences in an ever-changing world replete with ambiguous sensory data. Informed by findings in perceptual learning and long-term potentiation, I elucidate a succinct account of HPPD as an incidental consequence of combining drug-induced distortion of sensory input with what is normally adaptive visual statistical learning.

STEELE, Myles

Barriers to Mental Health Resources for Ontario Youth

There is a growing body of research revealing that adolescents suffer from high-levels of depression, psychological distress, and suicidal ideation. The aim of the current research is to investigate the gaps in mental health service access among Ontario students, using the 2007 Ontario Student Drug Use and Health Survey (OSDUHS). In particular, the current research seeks to build on existing research studies, which have found that youth residing in rural and isolated communities face tremendous barriers when attempting to access mental health services. The results from the current study reveal that youth from rural communities access service fewer mental health resources than youth residing in urban communities. However, rural youth also report lower levels of psychological distress and suicidal ideation, and once these factors are controlled for, the rural-urban differences become non-significant. These results are examined in the broader context of access to mental health services for Ontario adolescents, with a specific focus on the need to identify the gaps in service access for both rural and urban youth.

TAYLOR, Sara

Adaptionist vs. Spandrelist

In this paper I will discuss one of the major contributions of the theorist Joseph Bulbulia: his support of the evolution of religion being due to its adaptive characteristics for the human species. I will also be discussing one of the countering views: that religion evolved as a by-product, or spandrel, of other characteristics of the human species. While discussing these, I will attempt to mediate between the two views, and discuss which argument seems the most likely.

TOPPING, Heather-Lynn

Properties of Chaos in Dynamical Systems

There is no accepted definition of a chaos within a map, but many different definitions exist. This includes Devaney's, Li-Yorke's, Lyapunov's and Wiggin's definitions of chaos. Devaney's definition of chaos states that if X is a metric space,

then a continuous map f from X to X is chaotic if f is transitive, the periodic points of f are dense, and f has sensitive dependence on initial conditions. Wiggin's definition of chaos states that a continuous map f on a metric space is said to be W -chaotic if f is transitive and f has sensitive dependence on initial conditions. Lyapunov's definition states that a continuous and differentiable map f on the real numbers is called chaotic if f is transitive and f has a positive Lyapunov exponent. Lastly, a continuous map f on an interval with a period three orbit is said to be chaotic in Li-Yorke's definition if f has an uncountable scrambled set which is the result of the existence of a period three orbit. Here, the properties that are included in Devaney's definition of chaos are examined along with the relationships that exist between them. In addition, other properties of dynamical systems that are also involved in chaotic systems such as minimality, strong and weak mixing, and strong and weak blending are also investigated. This is done so a more informative and precise view of chaos and the elements that comprise it can be obtained.

VARLEY, Autumn

Whose Farm Is It Anyways? A Historical Narrative of Agricultural Developments in 18th and 19th Century Penetanguishene

Nestled along the southern shores of Georgian Bay, Penetanguishene and its surrounding areas are still largely rural and agricultural. The region's history is influenced by Native, French, British, and Metis settlers. This study wishes to trace the agricultural roots of the area and the various cultures that have shaped it into the community it is today. It also wishes to understand how agricultural practices developed over time and to what extent larger markets influenced them. By analyzing local agricultural methods and placing them within the larger context of Canadian market farming, we can begin to see whether or not these communities strayed from the normal agricultural progression apparent in other rural areas of Ontario. This paper will observe a period from the 19th century to 1938. Scholarly works on rural Ontario argue that the relationship between farm practices and markets was complex. Up to World War II, most farmers mixed subsistence production and sales in local markets with production of crops for provincial, national and international markets. I will be conducting research in local archives and interviewing local farmers for specific information regarding the evolution of agricultural practices in the area. There is also information in local histories on local heritage and community development. This research will help give some historical context to the current trends towards local food and young people taking up farming.

WEGNER, Elizabeth

The Social Dynamics in Harris Learning Library, North Bay Ontario

This field study is a part of a Qualitative Research Methods course, as a requirement in Anthropology. I chose to study the social dynamics in the Harris Learning Library to attempt to understand the atmosphere and social norms. I chose the library because I believe that it would yield some interesting social dynamics that are representative of other study spaces on campus and of the students themselves. Through naturalistic observation, participant observation, and interviews, I examine how students use the space of the library, as well as how they interact with each other in the context of the space. My findings revealed interesting social uses of the library including a breach of etiquette including the removal of shoes, and placing feet on coffee tables. As well, I noticed that there tend to be large groups of people

rather than just two when studying or working together which seems to add to a louder than normal library environment.

WILKINSON, Eric

A Defence of Canadian Peacekeeping

In Canada there is a historic divide between the prevailing positions on defence policy of the government and defence intellectuals. The academic literature on Canadian defence policy predominantly espouses a realist approach to international relations, which entails a particular view of defence and security policy. This position supposes that defence policy should be rooted in "national interests" and focused on the pursuit and preservation of these interests. A common critique of Canadian peacekeeping is that it does not serve the national interests of Canada. Instead, the realists suggest that peacekeeping reflects misplaced idealism and political pandering rather than sound defence policy. In Canadian political culture, peacekeeping is often viewed as part of the nation's character. Political parties profess support for peacekeeping, as do a significant portion of the public. These attitudes are typified by the allusions of Lloyd Axworthy to "soft power" or the late Jack Layton's remarks that the military "should concentrate on peacekeeping and not making war." The realists argue that the rhetoric of peacekeeping facilitates the neglect of the military by promoting a pacifistic national image, although a proper conception of peacekeeping is neither overly idealistic nor erosive of the military. There are grounds to argue for Canadian peacekeeping both within and without realism, however. From a realist perspective, peacekeeping may be justified as "forward defence" of national interests. Furthermore, realism's rejection of moral concerns prior to national interests may be called into question, allowing for the development of a normative theory of defence supportive of peacekeeping.

WYNN, Stefani

Vietnam: Adjusting the Lens

Can you use images as historical evidence? Majority of scholars are apt to use the written word and neglect other forms of evidence, however images offer more in regards to historical evidence. Images reconstruct the culture and context in question and there is an exchange between the viewer and the image that many are unable to receive from a word document. In order to examine images viewers need to investigate the image from all sides (foreground, middle ground and background) and look at the composition of the images as well to shed light on the event or individual in question. Peter Burke is one of the most influential writers on this subject and he offers insight on how to look at images and the pitfalls associated with them. My research looks at how we look at an image as historical evidence and the steps taken to do so.

ZAUMSEIL, Blake

Examining Recontact and Recidivism Among Inmates with Symptoms of Mental Illness

Research has shown that a disproportionately higher rate of criminal recidivism occurs with offenders who suffer from a mental illness when compared to other offenders (Wilson et al., 2011). However, such research often overlooks one of the

more prominent issues underlying offenders' mental illness and their involvement with the criminal justice system and this issue is one involving recontact. Recontact is differentiated from the often cited problem of recidivism as recontact refers to any remand or sentenced post-release contact with the police and is consequently a more costly correctional concern given the uncertainty associated with this population, especially as it applies to Canada where there remains an absence of quantitative data (Hartford et al., 2005). Therefore my research involves examining the controversial link between mental illness and involvement in the criminal justice system, with a particular emphasis placed upon differentiating recidivism and recontact while statistically controlling those factors that are significant to the Canadian context, such as aboriginal status. The data for this analysis was collected by employing the RAI-MH tool to assess the psychiatric status and care needs of a sample of N=522 male and female offenders from fourteen Ontario correctional facilities. In congruence with previous research, several variables were included within the analysis, such as age, gender, substance abuse, aboriginal status, severity of mental illness, and severity of offence (Lund et al., 2013). In order to assess the recontact and recidivism rates of these offenders, the Kaplan-Meier survival analysis technique as well as the Cox regression model were employed (Wilson et al., 2011).