STUDENT RESEARCH DAY 2022

BOOK OF ABSTRACTS AND ARTIST STATEMENTS

STUDENT
RESEARCH
DAY

Abstracts and Artist Statements Guide

Listed by Faculty/Program of Study and Student Last Name, Alphabetically

Anthropology, Economics and Political Science

Student(s)	Title	Format
Madi Badger	Diversity in Archaeological Employment	Oral Presentation
Allyson Brinston	Conversations about Indigenous Language Revitalization: Urban Edmonton Strategies and Methods	Poster Presentation
Ruan Bouwer	The Country's Wealth: State-Owned Enterprises in Apartheid and Post-Apartheid South Africa	Oral Presentation
Dominic Ellis-Kelly	The Implementation of Guaranteed Basic Income in Canada	Oral Presentation
Hailey Kennedy	Art and Archaeology: Understanding Drawing within Archaeological Contexts	Poster Presentation
Shaun Magnaye	The Decoupling of Industrial Sulfur Dioxide Emissions from Gross Regional Product Per Capita in Beijing	Poster Presentation
Amanda Robinson	Weaving Womanhood: Unraveling the Complexity of Women's Agency in the Viking Age	Oral Presentation
Alex Wickenheiser	Anth 415 Theory Poster	Poster Presentation
Clare Wiznura	Language Ideologies and Discourses Surrounding Self-Usage of Computer Mediated Communication: A Look at Gendered Differences	Poster Presentation

Art and Design

Student(s)	Title	Format
Isaac Amoah	Experimental Layout - The Book of Sand	Project Display
Jhaianne Anselmo	Album design process	Poster Presentation
Lauren Beatty	The Pedestrian: A Visual Exploration of Tone and Imagery	Poster Presentation
Lauren Beatty, Simon Dechant, Nicole Fitzpatrick, Rachel Jacques and Seraphim Rosenfeldt	To Tell the Tales of Two: A Visual Exploration of Dialogue in Literature	Project Display
Manhar Bhui	Visual Storytelling Through Expressive Typography	Poster Presentation

Rachel Blaak	Visual Commentary on Unseen Characters in Response to How to Pronounce Knife	Project Display
Rachel Blaak	A Typographic Interpretation of "The Pedestrian" by Ray Bradbury	Project Display
Molly Boyd, Keighly Gibson and Katryna Yasinski	Creation of a Visual System for the Colloquium Project	Poster Presentation
Barbie Cayanan	Using objects to represent artists in album cover design	Project Display
Vik Chu	Ecosystem Map: A Granular Representation of the Edmonton Transit Service (ETS)	Project Display
Lisa Cox	Ecosystem Map: A Systemic View of Edmonton's Transit System	Poster Presentation
Lisa Cox	Book Design: "Fairy Tales by H.C. Andersen, A Collection of Stories"	Poster Presentation
Ashley Drouin	Book Design - A Collection of Short Stories by Edgar Allan Poe	Project Display
Keighly Gibson	Breaking the Grid to Visually Enhance Literature	Poster Presentation
Keighly Gibson	Exploration of Colour and Line in Album Design	Poster Presentation
Rachel Jacques	Expressing tone and emotion with experimental typography	Project Display
Brett Johnson	Safety and Securty: ETS Ecosystem Map	Project Display
Thia Ma	Exploration of Literary Parallelism in Product Design	Project Display
Thia Ma	The Application of 1920s Bauhaus Aesthetic to Contemporary Album Design	Poster Presentation
Mesina Marrazzo	Defy Nail Polish - A Refreshing Take on Souvankham Thammavongsa's "How to Pronounce Knife" Collection	Poster Presentation
Mesina Marrazzo	Up and Over - A Vision of Perseverance	Project Display
Kevin Nguyen	DESN 315 Visual Narrative and Storytelling: Project 3 Stories from the future	Project Display
Jadyn Pierog	Visual Exploration of the Theme of Copies in Ray Bradbury's Marionettes, Inc.	Project Display
Angeline Santos	Queen of Hearts: Breaking the Grid	Poster Presentation
Summer Smith	Applying Concrete Poetry Techniques to Ray Bradbury's "Night Meeting"	Project Display
Kayla Tolentino	Experimental Type - The City by Rad Bradbury Part I	Project Display
Kayla Tolentino	Unspeakable: A Game Adaptation of MacEwan's Book of the Year Design Series "How to Pronounce Knife"	Poster Presentation
Kayla Tolentino and Celine Trinidad	Elsewhen: A Visual Exploration in Experimental Layout	Project Display

Celine Trinidad	Experimental Type - The City by Ray Bradbury Part II	Poster Presentation
Grace Zimmel	Monday or Tuesday Book Design	Project Display

Arts and Cultural Management

Student(s)	Title	Format
Madison Francoeur	Stitching with Stories: Learning to Bead Through Embodied Knowledge	Creative Installation
Bailea Jackson	Oral Resources of the COVID-19 Pandemic as Knowledge-Based Storytelling.	Oral Presentation

Biological Sciences

Student(s)	Title	Format
Chrissa Barroma and Amanda Kryjak	Cloning and Purification of a glycerol-specific alditol oxidase for biosensor construction	Poster Presentation
Benjamin Bekkema	Bioautography As a Method For Testing For Antimicrobial Compounds in Noxious Weeds From Alberta	Oral Presentation
Benjamin Bekkema and Troy Neilson	Synthesis of Novel Thiazole Inhibitors of Intestinal Alkaline Phosphatase	Oral Presentation
Dana Dunbar	Recovery Ability of Thermally Stressed Captive Coral Anthelia spp., as measured by Dinoflagellate Density	Oral Presentation
Haylee Hatton	Post-management dietary dynamics in spottail shiner (Notropis hudosonius) and trout-perch (Percopsis omiscomaycus) from 2009-2011 and 2013 in Lac la Biche, Alberta	Poster Presentation
Areal Huang	Characteristics that Affect Detectability of a Species for Biodiversity Monitoring	Oral Presentation
McKayla Kirkpatrick	Detecting Antibiofilm Activity in Phytochemical Extracts From Local Invasive Weed Species	Oral Presentation
Cianna Klebak	Assessing Differential Expression of Enzymes in Dermacentor andersoni and Dermacentor variabilis Ticks Following Cold Exposure	Oral Presentation
Lina Lim	Developing Microsatellite Markers for Cypripedium passerinum	Oral Presentation
Sara McLean	The Race for Rhizobia: An investigation into the symbiotic capabilities of Fabaceae with rhizobia in nitrogen-deficient, disturbed urban soils.	Oral Presentation
Celina Vipond	Characterization of a Novel BMP3 Mutants Implicated in Ocular Coloboma	Oral Presentation
Taylar Whidden	Effects of host plant quality and microsporidia infection on forest tent caterpillar, Malacosoma disstria (Lepidoptera: Lasiocampidae) performance and disease susceptibility	Oral Presentation

Child and Youth Care

Student(s)	Title	Format
Anita Brown	Children's play in Cree culture	Oral Presentation
Gabriela Ferreira Arnaut Bernabe	Equity, diversity, and inclusion in early learning and childcare frameworks across Canada	Oral Presentation

Communication Studies

Student(s)	Title	Format
Karly Broadstock	Stronger Than Fiction: Examining the Appeal of Fictional Characters in Parasocial Relationships	Oral Presentation
Emma Dietze, Elyse Dzenick and Sara Halcro	Does influencer culture promote toxic positivity on Instagram? Online Emotional Suppression and Mental Well-being	Oral Presentation
Cole Koch and Isaac Lamoureux	Parasocial Relationships and its 65 years of Evolution: Reevaluating the Accepted Definition	Oral Presentation

Computer Science

Student(s)	Title	Format
Courtney McNeilly	Pupil: A Web-based Application for Grading Multiple Choice Exams	Oral Presentation
Iain Smith	Artificial Intelligence Approaches to Build Ticket to Ride Maps	Oral Presentation

Engineering

Student(s)	Title	Format
Matt Kantor and Darren Paetz	Designing a low-cost, open-source, 3D interior space scanner	Oral Presentation

English

Student(s)	Title	Format
Y. A.	Textual Odalisque: From Roxolana to Hurrem Sultan	Oral Presentation
Samantha Daigle	Reading Ideology: The Evolution of Children's Literature as a Didactic Tool	Oral Presentation
Liam McIntyre	Cinematic Horrors of The American Body Under Capitalism	Oral Presentation
Hannah Riegger	The Roundness of Tongues	Oral Presentation
Layla Rosser	Traumayana: Nachtraglichkeit and Interaction of Traumas Across Time and Scale in Minekura Kazuya's Saiyuki and Saiyuki:Reload	Oral Presentation
Brianna Sorensen	Tarrying with Trauma While Improvising Gender in *Who Do You Think You Are?*	Oral Presentation

Human Services and Early Learning

Student(s)	Title	Format
Tori Vail	Analysing and documenting mathematics content of Canadian early learning frameworks	Poster Presentation

Humanities (History, Philosophy, Classics, Languages)

Student(s)	Title	Format
Kyle Gibson	Smart Camps: The Digital Revolution's Dark Creation	Oral Presentation
Lauren Rundell	Josef Pieper and the Recovery of Leisure in the Workaday World	Oral Presentation

Interdisciplinary

Student(s)	Title	Format
Lisa Muyambo and Maryanne Muyambo	The Hundred Homes Initiative - "Attempting to end poverty; starting with 100 loving Homes"	Oral Presentation

Mathematics and Statistics

Student(s)	Title	Format
Shaun Mainwaring	Measuring the activity of Saccharomyces cerevisiae in relation to home-based additives by measured net weight loss	Poster Presentation
Orion Sehn	Bragg Diffraction of One Dimensional Substitution Tilings	Oral Presentation

Nursing

Student(s)	Title	Format
Sydney George	Forensic Nursing and the Healthcare System's Response to Sexual Violence	Poster Presentation
Amy Wildeman	Perceptions of clients about healthcare professionals (HCP) who have visible body art: a scoping review of the literature	Poster Presentation

Organizational Behaviour, Human Resources Management and Management

Student(s)	Title	Format
Patrick Jean	How to increase student-engaged undergraduate research	Oral Presentation

Physical Sciences (Chemistry, Earth Sciences and Physics)

Student(s)	Title	Format

Ranen Calvert	Texture Classification of Manito Lake Stromatolites	Poster Presentation
Ryan Duchnowski	Microplastics in Stormwater Ponds around Edmonton	Oral Presentation
Gaganpreet Gill	Phytochemical plant extractions using switchable-hydrophilicity solvents	Oral Presentation
Paige Goshko	Recreating the Paleoecology of the Rocky Mountains, AB	Poster Presentation
Erynn Hunka	Determining the Adsorption of Cadmium to Diatoms as a Function of pH	Oral Presentation
Ty Joinson	Introductory Robotics Experiment to be Implemented into a Senior Physics Lab	Oral Presentation
Ben Michalchuk	Adsorption of Cadmium to Diatomite	Oral Presentation
Ben Michalchuk	Process-Deposition Model for Target Surveys of Late-Pleistocene, Early-Holocene Natural Sites	Oral Presentation
Kaylee Onucki	Spectroscopic investigation of Cadmium sorption to Oncoids	Oral Presentation
Cedrick Ramos	Carbonate sedimentology of coral reefs in Sumba Island, Indonesia	Oral Presentation
Radhika Saini	Detection of Early Aragonite to Calcite Diagenesis in a Modern Inner Carbonate Ramp	Oral Presentation
Helen Tiet	The Accumulation of Microplastics in Different Estuaries	Oral Presentation
Rebecca Trites	Dunes: Portable OSL Technology and its Practical Applications in Canadian Archaeology	Poster Presentation

Psychology

Student(s)	Title	Format
Holly Bosch	Mindfulness as a Moderating Variable of Selfishness and Materialism	Poster Presentation
Vanessa Brickwood	Sluts and Mini-Skirts: Do Cognitive Load and Processing Mode Influence Stereotypical Thinking About Sexual Consent?	Poster Presentation
Bailey Bulmer	In Memory of Gruesome Details Across Violent Scenes	Poster Presentation
Layton Byam	Exploring Which Anxiety-Related Disorder Symptoms and Mechanisms are Associated with COVID-19 Anxiety	Oral Presentation
Haley Calder	The Psychophysics of Gender Perception in Handwriting	Oral Presentation
Dacia Chiarieri-Hirsch and Mackenzie Thomas	A Post-Release Examination of High-Risk Offenders and the Barriers to Reintegration	Poster Presentation

Caleb Chomay	How Narcissistic Admiration and Rivalry Influences Perceptions of Trustworthiness at Zero Acquaintance	Oral Presentation
Maron Demecillo	I Woof You: How Pet Pictures Influence Online Dating Selection	Poster Presentation
Maron Demecillo and Morgan McCloy	Arts engagement during the COVID-19 pandemic	Poster Presentation
Ismaeel El-Hakim	The Potential of Central, Non-Predictive Arrow Cues to Engage Reflexive Shifts in Spatial Attention	Poster Presentation
Darcy French	It's a Burden But... Having a Sibling with Prader Willi Syndrome: Stress, Growth and Perceived Burden	Oral Presentation
Mattise Gauthier	In the Shadows: Perceptions of In-Person, Phone, & Cyberstalking	Oral Presentation
Shelby Grahn	Put Your Money Where Your Mouth Is: Psychopathic Traits, Priming, and Costly Helping	Poster Presentation
Janine Heber	Acoustic cues to individual identity in the American Pika (Ochotona princeps).	Oral Presentation
Celina Hulm	How Living with Pets and Others Relates to Wellbeing During the COVID-19 Pandemic	Oral Presentation
Andréa Johnson	The Acute Effects of Cannabis Terpenes on Zebrafish Anxiety-Like Behaviour.	Poster Presentation
Emma Johnston	I only cry in movies when an animal dies: Exploring the relationship between human and animal centered empathy in pet owners as a function of trait narcissism.	Poster Presentation
Madison Karpiak	How respondent intoxication influences university staff's perceptions of risk and sanction recommendations in an on-campus sexual assault scenario	Poster Presentation
Nathan Kyler	A Study of Mindset: Better Understanding the Structure of Mindset and How Growth Mindset Interventions are Delivered	Oral Presentation
Chris Leathem	Sensitivity in Face Perception with Masked Stimuli	Oral Presentation
Shannon Majeau	Motivations and perception of others in political disagreement	Poster Presentation
Dezerae Martens	The Positive and Negative Perspectives of Narcissism	Poster Presentation
Levi Meldrum	The effects of video game experience and time pressure on hiding and searching behaviour.	Poster Presentation
Jacey Mitchell	Book to the Basics: Systematically Teaching Children to Read	Poster Presentation
Melissa Nielsen	Worth the Risk: Narcissism and Risky Health Behaviour	Poster Presentation

Tulsa Oddy	Speech and language effects on the perception of mixed emotion in children	Poster Presentation
Hadla Omar	If you change your mind: The relationship between implicit theories and materialism	Oral Presentation
Sydney Parkinson	What Maintains Generalized Anxiety Disorder? Examining Intolerance of Uncertainty and Negative Beliefs about Worry	Oral Presentation
Jasmine Parr	The Effects of Oxytocin on Social Anxiety-Like Behaviour in Zebrafish	Oral Presentation
Ronak Rai	Grandiosity Under Pressure: Exploring Stress Induced Fluctuations of Grandiose Narcissism	Oral Presentation
Megan Riley	Perception of Dog Breeds, Dog Traits, and Implicit Associations	Poster Presentation
Brayden Ritter	Anxiolytic effects of acute Delta-9-Tetrahydrocannabinol (THC) administration in Zebrafish (Danio rerio)	Poster Presentation
Chella Mae Robles	Assessment and Recovery of Reaching Functions in Patients with Cerebellar Stroke	Poster Presentation
Chella Mae Robles and Mackenzie Thomas	Criminogenic and Non-Criminogenic Needs of High-Risk Offenders and Reintegration Success	Poster Presentation
Jill Rogers and Madison Twa	Men are Bad, Women are Mad: The Influence of Race, Gender, & Crime Variables on Perceptions of Criminal Responsibility	Poster Presentation
Kamille Sandberg	Does Feeling Heard Improve the Experience Worldview Conflict?	Poster Presentation
Japkaran Saroya	A Zoo-per Day Keeps The Scaries Away!: The Impact of Seeing Animals on At-Risk School-Aged Children	Poster Presentation
Kale Scatterty	The Effects of Infrasound Frequencies on Wild-Type Zebrafish Anxiety Behaviour	Poster Presentation
Kale Scatterty	Establishing an Effective Dose-Response Curve of β-Carboline FG-7142 on Wild-Type Zebrafish Anxiety Behaviour	Poster Presentation
Rosalia Scavuzzo	The Kids are Alright: Student Productivity and Covid-19	Oral Presentation
Sophia Slade	Lateralization of facial emotion recognition in the human cerebellum	Poster Presentation
Sam Smith-Ackerl	THE ROLE OF SEXUAL PRACTICE IN SHAPING PERCEPTION OF CONSENT AND CUE INTERPRETATION	Oral Presentation
Pamela Stuart	A Signature Squeak: Acoustic Features Related to Identity in American Pika Calls	Poster Presentation
Samantha Sydor	Rattle calls as individual identifiers in the North American red squirrel (Tamiasciurus hudsonicus).	Oral Presentation

Sara Tanasichuk	Parental Intervention Non-Adherence Mediated by Misinformation About Applied Behavioural Analysis	Oral Presentation
Mackenzie Thomas	Differences in Criminogenic Needs and Risk Prediction Based on Sexual Assault Typology	Oral Presentation
Alex Tiller	He Said, She Said, They Said: The Influence of Sex and Gender on Victim Credibility	Poster Presentation
Christina Tomaras	Does Information, Psychiatric Illness Type and/or Age Influence Undergraduates' Acceptance of MAiD?	Poster Presentation
Christina Tomaras	Effects of Context on Perceptions of Suicide Referents	Poster Presentation
Jessica Touznik	Is "Just-Get-Started" an Effective Self-Management Tactic to Improve Flossing?	Oral Presentation
Ryan Verbitsky	Examining the role of the cerebellum in visuospatial attention: Can cerebellar lesions lead to spatial neglect?	Poster Presentation
Alana Walker	Increasing Independent Self-Care in Autistic Children through Telehealth Parent Coaching	Poster Presentation
Nicole Walklin	Storytelling Abilities of Children with Cochlear Implants (CI)	Poster Presentation
Shannon Walters	Communicating Consent: Testing Taxonomy Based Training Methods	Poster Presentation

Social Work

Student(s)	Title	Format
Beverly Michel Baluyot and Elaine Tran	Research Reflections: Student Experiences of a Systematic Literature Review on Social Care Strategies for Older Adults During the COVID-19 Pandemic	Oral Presentation
Caren Robinson	Indigenous Beading Knowledge in context of International Social Work Research	Poster Presentation

Sociology

Student(s)	Title	Format
Patricia Anderson	Meeting in the middle: Hannah Arendt and Jose Ortega y Gasset on public discourse.	Oral Presentation
Dallas Bilyk	Beyond Bullets: How Ukrainian Families are Being Impacted by the Russian Invasion of 2022	Oral Presentation
Alyssa Dechant	Ukrainian Students' Involvement in Russia's War on Ukraine	Oral Presentation
Shaelyn Durocher	Importance of Symbolism in the Russian War on Ukraine	Oral Presentation

Alexandra Gagnon	Honours Thesis Proposal: A Sociological Analysis of the Normalization of Weight-Cutting in Combat Sports	Oral Presentation
Alexandra Gagnon	The Lorax Effect: A Statistical Analysis of Environmental Concern in Canada	Oral Presentation
Harrison Haug	The Hidden Weapon of the Russia-Ukraine War	Oral Presentation
Shelby Hays	Disability and Houselessness	Oral Presentation
Nicole Houle	Gender Gap or Gender Differences? Gender and Political Participation in Canada	Oral Presentation
Madelaine Jacknisky	Racially Bias Media Representation of the War in Ukraine and the Impact on our Empathetic Responses	Oral Presentation
Rachel Koski	A Spectrum of Freedom of Speech	Oral Presentation
Ayla Law	Russian Propaganda and Moral panic: the Implications for North America	Oral Presentation
Samantha Mullin	Instagram and Politics Systematic Review	Poster Presentation
Randi Sempala	#AfricansinUkraine: A Critical Race Theory Perspective of Racism in Times of Crisis.	Oral Presentation
Lauren Shaw	Concepts of Freedom: A Comparison of Societal Responses to Loss of Freedom Contrasting Canada and Ukraine	Oral Presentation
Maya Stephens	Performance Activism within Contemporary Political Conflicts and Social Movements: Russia's Invasion of Ukraine	Oral Presentation
Christine Zolondek	Mothering in the Context of the COVID-19 Pandemic	Oral Presentation

Abstracts and Artist Statements

Anthropology, Economics and Political Science

Diversity in Archaeological Employment

By Madi Badger

For this study, I broadly examine representation in archaeology focusing on the experiences of those in Cultural Resource Management (CRM). Current research on equity, diversity, and inclusion in archaeology has largely focused on academia, however I wanted to study the commercial/CRM sector as this is a larger and more accessible workforce. As well, CRM has a reputation of being a heteronormative, male dominated field, and I wanted to look at how this affects marginalized archaeologists. Specifically, a survey was distributed to Canadian CRM companies that focused on the role of gender and sexual orientation in the workplace, and the possible inequity as a result. The purpose of this study was to determine if there is an underrepresentation of members of the 2SLGBTQIA+ community in CRM archaeology. Initial results of the survey indicate issues with working conditions related to gender and sexual orientation. This paper will present the results of said survey, as well as offer insight on how to make archaeology a more inclusive field based on the issues identified.

Major: Honours - Anthropology
Minor: Psychology
Faculty Mentor: Dr. Katie Biittner

Conversations About Indigenous Language Revitalization: Urban Edmonton Strategies and Methods

By Allyson Brinston

This study examines how the indigenous ways of knowing are implemented within community-based language teaching programming within Edmonton. Some Indigenous languages are still learned at home from birth, and in others, daycare and schools play a larger role in introducing the language to children; here, through a local case study, this project investigates how Indigenous languages are being taught to adults in community programs in urban Edmonton. Through interviews with participants who teach Indigenous languages (e.g., Plains Cree, Nakoda) to adults, I present methods and strategies for revitalizing their language and teaching language within urban settings such as Edmonton.

Major: Honours - Anthropology
Faculty Mentor: Dr. Jenanne Ferguson

The Country's Wealth: State-Owned Enterprises in Apartheid and Post-Apartheid South Africa

By Ruan Bouwer

State-owned enterprises (SOEs) have played a foundational role in the political and economic history of South Africa since the Dutch East India Company first established a trading post at the Cape of Good Hope in 1652. Throughout the following centuries, South African governments of various stripes have each used state ownership of resources and industry to restructure the country's economy in the service of their own perceived interests. In this comparison of apartheid and post-apartheid SOE strategies, I draw from a wide range of scholarly work to assess the relative failures and successes of state ownership policies since 1948, with an eye to the implications for present-day policymaking.

Major: Honours – Political Science
Minor: N/A
Faculty Mentor: Dr. Chaldeans Mensah

The Implementation of Guaranteed Basic Income in Canada

By Dominic Ellis-Kelly

The Canadian welfare system has been in place for several decades, but it has not fully addressed social issues such as poverty and economic change. Guaranteed basic income (GBI) has emerged as a potential solution to existing social programs failing to have their desired impact, and there are many proposals for what a basic income should look like in Canada. These works are primarily focused on economic calculation and moral arguments, and implementation serves as a secondary concern to these primary imperatives. My presentation analyzes GBI through an implementation studies lens and creates a layout for the implementation of my own GBI proposal, with lessons taken from the Canadian basic income projects in Manitoba (1975-77) and Ontario (2016-18).

Major: Honours – Political Science
Minor: History
Faculty Mentor: Dr. Brendan Boyd

Art and Archaeology: Understanding Drawing within Archaeological Contexts

By Hailey Kennedy

Observational skills provide the foundation for many archaeological techniques. In particular, drawing skills were once seen as critical in archaeology and so they were taught frequently within archaeology classes. Drawing can take a variety of forms, from using a pencil and paper to heavy duty drawing tablets used for animation; however, no matter the materials used to draw and sketch, observing is critical for producing an accurate drawing. The widespread use and adoption of digital photography and image-making has resulted in a decline in the use of drawing within archaeology, and such skills are now only briefly considered in archaeological teaching as practical and worthwhile endeavours. The analytical importance of drawing within archaeology is not usually considered beyond its role in providing visual representations for readers of archaeological reports or through its informal use by researchers in the field. This paper considers the role drawing can have within archaeology and suggests that drawing can and should be used as a tool to aid in critical observation. Two main sources of data were

collected for this study: a collection of interviews with specialists (archaeologists, artists, etc.); and an experiment involving eight individuals to test whether critical observation skills were improved if individuals are provided instruction in basic drawing techniques. The results of this study suggest that drawing can be a useful mode of observation that generates data for archaeological interpretation rather than simply being a means of representing data.

Major: Honours – Anthropology
Faculty Mentor: Dr. Hugh McKenzie

The Decoupling of Industrial Sulfur Dioxide Emissions from Gross Regional Product Per Capita in Beijing

By Shaun Magnaye

Through the use of a case study, I explore the relationship between industrial sulfur dioxide (SO_2) emissions and gross regional product (GRP) in Beijing between 2001 and 2018. By using data from the China Statistical Yearbook, I show that GRP per capita grew while industrial SO_2 emissions fell. Further, I show how expansions of the technique and composition effects of economic activity contributed to this decoupling process. More specifically, I explore the significance of changes like increased desulfurization and the growth of the tertiary industry and how these factors led to a decrease in industrial SO_2 emissions while GRP grew. I also explore how key events and experiences in Beijing's history influenced the motivation to improve air quality and how these changes in motivation contributed to the decoupling process.

Major: Economics
Minor: History
Faculty Mentor: Dr. Ergete Ferede

Weaving Womanhood: Unraveling the Complexity of Women's Agency in the Viking Age

By Amanda Robinson

Gender identity and women's roles within the Viking Age (8th-11th CE) has long been a subject for inquiry, competing against Victorian gender norms and patriarchal bias, the idea that women had any power was only a subject for sagas and myths. Consequently, they have been interpreted as occupying a private and secluded domestic space. However, women's agency can be unraveled by exploring mortuary and grave good analysis, along with a focus on textile production and the creation of cloth as currency. Evidence uncovered showcases women's ability to negotiate their roles, achieving high levels of status, portraying women's domesticity in a more public light, allowing them agency within a world of men. Historical and Archaeological analysis supports that Norse women were the primary weavers, responsible in the production of cloth. Textile production was an important commodity for trade within the Viking Age and its prevalence in urban centers suggests that women maintained a central position in the earliest economies of Scandinavia's Viking Age towns. Furthermore, the prevalence of woven cloth may have been a precursor to the reliance of textiles as a currency within the Medieval period of

Scandinavia. For example, women's agency was amplified by the creation of vaðmal (home spun cloth) which became the primary form of currency in twelfth century Iceland, escalating women to the helm of the economy.

Major: Honours - Anthropology
Minor: History
Faculty Mentor: Dr. Cynthia Zutter

Anth 415 Theory Poster

By Alex Wickenheiser

A comparative analysis of two theoretical frameworks analyzing a single data set to compare the value of each.

Major: Anthropology
Minor: History
Faculty Mentor: Dr. Jennifer Long

Language Ideologies and Discourses Surrounding Self-Usage of Computer Mediated Communication: A Look at Gendered Differences

By Clare Wiznura

This work aims to outline the ways in which we view our own texting habits, in terms of gendered differences. After interviewing participants, this study compares the answers provided to actual texting samples to see if ideologies are reflected in the actual manners in which we text.

Major: Honours - Anthropology
Faculty Mentor: Dr. Jenanne Ferguson

Art and Design

Experimental Layout - The Book of Sand

By Isaac Amoah

Created for DESN 231, this experimental layout is based on The Book of Sand written by Jorge Luis Borges. The general themes are human curiosity, knowledge, and connection. A book salesman and a retired librarian are studying a mysterious book. Borges makes many references to the Bible in the story. The retired librarian decides to purchase the book from the salesman. The main character eventually begins to lose sleep over the book because he's trying to understand it. He finally gets rid of the book, and his life supposedly returns to normal.

Major: Design
Faculty Mentor: Constanza Pacher

Album design process

By Jhaianne Anselmo

In my typography 2 class, we were tasked to design an album for the band, Up and Over Trio. Each student had different ideas and interpretations for the album design, and I want to showcase mine.

Major: Design
Faculty Mentor: Constanza Pacher

The Pedestrian: A Visual Exploration of Tone and Imagery

By Lauren Beatty

Words that emphasize the theme and mood are highlighted in purple, italicized, and bolded, so they stand out to the reader at first glance to give an idea of what the story is about without reading it. In contrast, on the right side, words that portray feelings of fear, anxiety, and the symbolization of his dystopian society are highlighted in red. Behind specific keywords in red, there is an echo of them in distressed typography to exemplify how Leonard feels hearing them and emphasize their importance to the tone and theme. The title is tracked out and has its baseline adjusted to symbolize Leonard's walk and the story's abrupt turn. Purple footprints lie under the text to act as imagery describing the footsteps he leaves. They connect to the title to make it appear like it has turned into footsteps, emphasizing his walk's central part of the story. The overlay of a purple to red gradient symbolizes the shift in tone from Leonard's calm, lonesome walk to his fearful encounter with the police car. A different typeface is used when the police car speaks to separate the two speakers in the text visually. It is also more prominent than the body text to demonstrate the police's power over Leonard and their stronger voice. A fourth treatment is applied to specific words when Leonard speaks. It minimizes the text size and tracks the text out to portray the sound of his voice like a distant whisper.

Major: Design
Faculty Mentor: Constanza Pacher

To Tell the Tales of Two: A Visual Exploration of Dialogue in Literature

By Lauren Beatty, Simon Dechant, Nicole Fitzpatrick, Rachel Jacques and Seraphim Rosenfeldt

To Tell the Tales of Two: A Visual Exploration of Dialogue in Literature is a project of DESN231 Typography II, a course in the Bachelor of Design taught by Constanza Pacher at MacEwan University. Students were asked to visually translate an assigned short story into a two-page layout that challenges convention. With the overall goal of enhancing the meaning of the written text through visual devices, students focused on the peculiarities of language and speech in dialogues. Students were encouraged to explore linguistic deconstruction (semantics, syntax, grammar), alternative ways to organize the page, and to experiment with non-traditional grids, all while maintaining the legibility and readability of the text. Informative callouts where added throughout the publication to give conceptual or factual context to the piece.

Major: Design
Faculty Mentor: Constanza Pacher

Visual Storytelling Through Expressive Typography

By Manhar Bhui

The short story "House Taken Over", by Julio Cortázar is about two siblings living in a big ancestral home together. Throughout the story, something not specified is gradually taking over parts of the house, leaving the siblings with less and less space. By the end, the entire house is taken over, and the siblings have been kicked out of their home. In the story, the siblings have plenty of comfortable space and by the end, are constricted to a small area where it is crowded and uneasy for the two of them. This layout resembles the story by beginning with space between each line and ending very close together, almost overlapping. Dialogue is differentiated by being very spaced out, representing the attempt to hold their place in their home. An illustration of a door depicts every section of the house closed off, leaving less space to live. The typeface Kefa was chosen to create dense text, which is ideal for this layout. Minimal color keeps the layout clean and legible. Purple and red highlight the contrast between the pleasant as well as the troubling experiences in the house. Decreasing point size, tighter kerning, and tracking is used to achieve the look and feel of the crowded text. Gradually increasing the column length takes over the entire page by the end, representing the house being taken over.

Major: Design
Faculty Mentor: Constanza Pacher

Visual Commentary on Unseen Characters in Response to How to Pronounce Knife

By Rachel Blaak

"Mary believed there were two kinds of people in the world. There were those that were seen and those who were not. Mary considered herself one of the latter." Many characters in How to Pronounce Knife, by Souvankham Thammavongsa, can be considered 'unseen.' Despite their invisibility, each short story gives its characters the chance to be seen by the reader and have their voice heard. It is essential to recognize the importance of their final thoughts and actions in their stories because their impact is more substantial than anything their loud counterparts have done or said. This postcard series highlights the importance of what the 'unseen' characters are thinking, shown through found poetry. The imagery being used is highlighting specific moments in each story. These characters from Slingshot, The School Bus Driver and The Gas Station are shown through the use of black and white. They are more withdrawn characters but still interesting, so the postcards rely more heavily on texture and details to depict their situation. By using found poetry, the viewer can better understand the progression and development of each character. It highlights 'unseen' characters, blocking the louder characters the same way they are depicted in their stories.

Major: Design
Faculty Mentor: Constanza Pacher

A Typographic Interpretation of "The Pedestrian" by Ray Bradbury

By Rachel Blaak

"The Pedestrian" is the short story by Ray Bradbury about a night in the life of Leonard Mead. Set in a dystopian 2053, Mead is walking alone through his neighbourhood when he is confronted by a police car. After struggling to understand his reasoning behind going for a walk, the police car arrests Mead, explaining that he is being sent to a psychiatric facility. This final design is playing off of the intrusive nature of the car's speech. It is very aggressive in its tone as compared to Mead's soft descriptive nature. When approaching this project, it was apparent that the car's dialogue must be all-caps and sans-serif. On the other hand, Mead is a writer by profession, being very descriptive and poetic in his narration, calling for a soft serif with plenty of rags, creating fluid shapes. The two types of dialogue are very different to represent the difference between human nature and that of a robotic car. The car is not engaged in the conversation, shown by being right-aligned, as if they were two separate monologues. The small caps within the body text represent the cold nature of the scene the reader is placed in. The Background imagery is an abstract rendering of headlights to show that car's presence. The car's speech changes in value depending on its volume, getting dark the softer its tone is.

Major: Design
Faculty Mentor: Constanza Pacher

Creation of a Visual System for the Colloquium Project

By Molly Boyd, Keighly Gibson and Katryna Yasinski

Books with many stories require a visual system in order to maintain a feeling of unity. The Colloquium project is a book of short stories that each have a unique 2-page spread designed by the students of 231. Our group sought to create a dialogue-based design inspired by mid-century style designs. This project required exploration and co-collaboration from each co-collaborator as well as critique and feedback from one another.

Major: Design
Faculty Mentor: Constanza Pacher

Using objects to represent artists in album cover design

By Barbie Cayanan

Up and Over trio's music is as warm and welcoming as their friendship. To corporate this feeling in the packaging for their album, each member's unique musical style is highlighted in each photograph of ordinary objects commonly found on artists' tables.

Major: Design
Faculty Mentor: Constanza Pacher

Ecosystem Map: A Granular Representation of the Edmonton Transit Service (ETS)

By Vik Chu

An ecosystem map is a visual representation of an organization and its offered services. Through text, shape, colour, and line, it identifies relationships, issues, and service gaps and challenges. The visual acts as a communication tool between stakeholders and decision-makers as they plan, develop, and execute the service. There are no firm rules when representing ecosystem maps; the designer simply must frame the elements in as comprehensive and easily understandable a fashion as possible. In this project led by professor Isabelle Sperano, we partnered with community learning partner Edmonton Transit Service (ETS) to analyze its structure and the many elements that comprise it. With a focus on the topic of safety in public transit, I take a very granular view, listing every last channel, touchpoint, interaction, and safety concern and relate them to each other in a series of concentric rings that represent the user, stakeholders, and operational layers within the complex service. The ecosystem map is then used to inform the subsequent stages of the project, including research and solution development.

Major: Design
Faculty Mentor: Dr. Isabelle Sperano

Ecosystem Map: A Systemic View of Edmonton's Transit System

By Lisa Cox

Edmonton's Transit System (ETS) is a multi-faceted, rider-driven transportation system, making it an excellent candidate for Design thinking and System Mapping. ETS operates within the larger City of Edmonton System and has complex pain points regarding safety and security both within and outside of their direct control. The top of the map shows the system hierarchy and the interdependent relationship between the ETS System and the Rider Experience. Rider Experience affects riders' willingness to participate in the ETS System (Ridership), affecting the ETS System through funding and budget. The Community Partners, Emergency Services, and ETS Personnel chart within the hierarchy shows the top-level influence of these stakeholders within the greater ETS system. The second portion of the infographic highlights the Riders' Journey, illustrated by a Journey Map divided into each phase of ETS's System. Riders navigate various obstacles: Phase 1: Stop Experience, Phase 2 Station Experience, and Phase 3 - Onboard Experience. The final portion of the infographic is the inventory of touchpoints defined by phase within the ETS system. Touchpoints are categorized by interaction type: Information, Actors/Stakeholders, Safety Features, and Security Risks. Each touchpoint type is indicated through iconography, defining the different characteristics of that interaction. Finally, the User/Rider loops back into the top-level, outlining the interconnected nature of the System. Analysis of the ETS Ecosystem through a Design Thinking Lens and User-Centered approach enables a deeper understanding of the ETS System as a whole and how to best proceed when designing future solutions.

Major: Design
Faculty Mentor: Dr. Isabelle Sperano

Book Design: "Fairy Tales by H.C. Andersen, A Collection of Stories"

By Lisa Cox

"Fairy Tales by H.C. Andersen, A Collection of Stories" features work pulled from Andersen's 156 fairytales existing across nine volumes. Andersen's tales explore the hardship of life and champion resilience in the face of adversity, making his stories suitable for people of all ages. The design of this book pulls from the classic Fairy Tale genre, using ornamentation, frames, and highly stylized and whimsical typefaces. The dark blue cover with a subtle antique pattern creates a lovely backdrop for the typography and ornamentation. The inside of the cover features a dark and misty forest, lending to an air of mystery. Each typeface chosen interacts and compliments the theme and brings variety to each page. Illustrations accompany the introduction of each story, highlighting an essential part of the tale. The Illustrations are stylized and straightforward with a light antique line art feel. This illustrated collection consists of seven stories: the Littler Mermaid, Little Tiny Thumbelina, the Dumb Book, The Fir Tree, the Little Match Seller, The Brave Tin Soldier, and The Elf of the Rose. This Rendition of Andersen's tales celebrates the whimsy of the genre and the haunting tales that have become embedded in western culture.

Major: Design
Faculty Mentor: Constanza Pacher

Book Design - A Collection of Short Stories by Edgar Allan Poe

By Ashley Drouin

The goal of this project was to redesign a book or a collection of stories. This book consists of six short stories written by Edgar Allan Poe. Poe is known for his horror stories and poems that deal with mystery, death, and other macabre subject matter. The cover design includes a dripping blood illustration above a rich red background. The colour and design of the cover represent murder and death, which are major themes present in Poe's writing. The typeface is a clean sans-serif font written in large white letters which gives the book a modern feel and contrasts against the red. The inside cover is black with white illustrations of a cat and a heart. These two illustrations are images that relate to two of Poe's most well-known stories, The Tell-Tale Heart and The Black Cat. The interior includes a small illustration at the beginning of each story and a black and white texture on the left page. Each illustration and texture is different and represents a specific symbol, theme, or emotion of that particular story. Lapture Display is used for the chapter openings, a serif typeface with jagged and sharply cut edges. This typeface works well with Poe's work due to its edginess and gives the book an unsettling feel. The illustrations play off of this font due to their use of simple black lines with a mixture of soft curves and sharp points.

Major: Design
Faculty Mentor: Constanza Pacher

Breaking the Grid to Visually Enhance Literature

By Keighly Gibson

The grid is a tool that designers use in layout design to create balanced visually appealing designs. This project challenged students to explore breaking away from the grid to visually enhance an assigned short story. Through literary analysis, sketch, and peer critique this project seeks to develop a system to break out of the grid in a deliberate and logical way. Following the themes of ejection, and the vivid imagery surrounding the layout of the house, this story uses a blueprint as its grid. The story sits comfortably in the house in two equal columns until it is suddenly interrupted. "I heard it at the end of the passage" pulls the reader away from the grid as it sits outside of the col- umn that had been set before. These larger texts continue to interrupt the grid and Take Over our reading experience on the next page. Everything that happens after the house begins to take over happens on the right side of the page and, due to the higher volume of text, feels more cramped, just as Irene and her brother do. The house continues to interrupt the text and breaks up both columns. The columns are different widths on this page, the wider column represents the long slow days as the pair of siblings struggle to find things to do with their days, while the thinner column represents the speed at which the house finally succeeds at ejecting them from their own home.

Major: Design
Faculty Mentor: Constanza Pacher

Exploration of Colour and Line in Album Design

By Keighly Gibson

Designing for an album cover requires an in-depth understanding of the audience, genre, and content. Designers are constantly looking for innovative ways to represent sound, feeling, and rhythm. This project seeks to explore how best to represent the work of the group Up and Over Trio by creating a system that incorporates colour, type, and line. This project was planned through analysis of music, musician interview, sketches, and peer critique. The information was used to then create the final system. Up and Over is Up and Over Trio's debut album. In jazz, the piano, bass, and drums make up the rhythm section and often accompany a solo artist or a group of brassy instruments. Up and Over Trio come together to create an album full of layered rhythms. The concept for this album cover draws inspiration from the band's name (and album name): Up and Over. The graphic arrangement of the album name becomes the name itself. The word "UP" is prominent on the page, and the stem of the "P" draws the eye "up and over" to "And Over". This graphic arrangement is accompanied by four stripes of red, each slightly lighter than the last. These stripes give the feeling of layers, which is reflected in the music. In combination with the beige background, this particular gradient of black to red gives off a sense of warmth and soft lighting, which mimics the atmosphere of a jazz club.

Major: Design
Faculty Mentor: Constanza Pacher

Expressing tone and emotion with experimental typography

By Rachel Jacques

In the first half of Ray Bradbury's short story "The Crowd," we follow a man named Spallner who is in the midst of experiencing a traumatic car accident. In his confusion and shock, he notices a crowd forming around him and the scene and gets a strange feeling about the people in the crowd. He later remarks to his doctor that the wheels on his car were still spinning when the group appeared. After he recovers at the hospital, he begins to come across car crashes everywhere, eventually realizing that the crowds forming around the debris are the same people he saw at his own accident. The layout of the text weaves across the page, swirling and spinning like the wheels on Spallner's car. Excerpts of text echo on the page, using layering and transparency to suggest confusion and double vision, mirroring Spallner's difficulty in perceiving his environment and the events happening before him. Colour is used in the text to separate speakers and create contrast and emphasis. The display typeface Diager is used within the text for effect and graphically in the background to generate interest from the spread's "bird's eye view." In contrast, a simple sanserif Cambay Devanagari is used in body text to maintain legibility throughout the complicated layout. Background images depict scenes from the text and create visual interest, utilizing glitch effects in the graphics to magnify the eerie tone and reinforce Spallner's confusion as he pieces together the story.

Major: Design
Faculty Mentor: Constanza Pacher

Safety and Securty: ETS Ecosystem Map

By Brett Johnson

This ecosystem map was designed to provide an increasingly granular look at the Edmonton Transit System through the use of layered information. The objective of the map was to be a flexible tool that could be easily added to as new information about the rider and ecosystem are uncovered. The ecosystem map is broken into the two stages ETS identified in a rider's journey; "The First Stop / Station Experience" — the rider is not on an LRT or bus, and the "Onboard Experience" — the rider is on an LRT or bus. Adding more complexity to the map are layers that can be turned on/off, expanding upon the information provided. The "Safety Concerns" layers provide an overview of the safety concerns in the relative area. The "Rider Feelings" layer provides insight into the rider's emotions within the ecosystem, which can affect their perception of safety and security. The "Touch points" layer expands upon the touch points on the map with additional information. The "Government / City" layer, highlights the local government's role.

Major: Design
Faculty Mentor: Dr. Isabelle Sperano

Exploration of Literary Parallelism in Product Design

By Thia Ma

A chocolate bar packaging design is inspired by the 'whole chocolate bars' found in the short story Chick-A-Chee by Souvankham Thammavongsa in her published book How To Pronounce Knife. The design for the bar is a reflection of the parallelism found in the story. Following the

perspective of a young girl through the good and bad parts of childhood experienced through different interactions involving strangers at the front door. The chocolate bar's design similarly includes an interactive peel-away top panel, emulating a physical door. Inside the panel, there is either prose poetry of the 'good' nostalgic trick-or-treating experience or the 'bad' fear-induced hiding experience referenced in the story. Other notable elements of the chocolate bar's design include Book Facts as a stand-in for nutrition facts customarily found on the back of food packaging. The facts detail the important story beats in Chick-A-Chee while subtly adding some cheekiness characteristic of the author's writing. The internal bar wrapping includes some dialogue from the text that emphatically demonstrates the duality of the story in the back and forth between characters. For all design elements, the header typeface has a distinct humanist style that is heavy in appearance yet visually dynamic, echoing the writing style in How to Pronounce Knife. The secondary typeface is more clean and playful, highlighting all the lighter parts of Chick-A-Chee. Black and neon green are colours found in the text from the story around the child's glow-in-the-dark skeleton Halloween costume. These further illustrated the idea of opposition found in the story and complemented the design of a modern chocolate bar. Other deliverables included the chocolate bar collection box. Each story from the book has a unique chocolate bar flavour and design inspired by the central theme of that particular story. Together, they create the collection of story-telling by Thammavongsa and her characters' interactions throughout How to Pronounce Knife.

Major: Design
Faculty Mentor: Constanza Pacher

The Application of 1920s Bauhaus Aesthetic to Contemporary Album Design

By Thia Ma

The aesthetic choices for this design reinforce the central idea of 3 into 1. Three individuals on three different instruments come together to become the Up and Over Trio. The three colours leading into the Trio's title demonstrate this relationship and signify the importance of each musician's sound. Conversely, take one colour away, and the design loses its balance. Red, blue, and yellow is used because, as primary colours, they create all other colours. Considering the Trio's history of playing back up, these essential colours show they are the focus of this album. Using simple shapes in the typeface and visual design elements keeps the overall feel of the cover clean and modern. The textured background adds visual interest and grounds the overall design, making it approachable and warm. Additionally, the brown paper texture is reminiscent of a wrapped gift waiting to be opened and enjoyed. The 3D placement of the text and colours adds visual rhythm, not unlike jazz music, in a contemporary style that is playfully unexpected. The typeface used throughout deliverables is Joost, a typeface intended to emulate the 1920s design aesthetic. It's pulling from the age of jazz while still appealing to modern audiences. The black type, in particular, stands out against the textured background and boldly draws the eye. The final design honours the Trio, their paths that led to the creation of this album, and the evolving world of jazz.

Major: Design

Faculty Mentor: Constanza Pacher

Defy Nail Polish - A Refreshing Take on Souvankham Thammavongsa's "How to Pronounce Knife" Collection

By Mesina Marrazzo

How to Pronounce Knife is a collection of love stories. The characters love themselves, their families, and their friends so much that they fight for them, often leading to acts of defiance. The characters know who they are, love all the parts of themselves, and defend their identity to their last breath. Defy is a brand that sets no boundaries in its target audience; its products are made for all ages and all genders. Eye-catching, no-nonsense packaging keeps it all-inclusive and mirrors the book's blunt and frank use of language. There is no senseless decoration or flowery embellishments. It's just nail polish. Defy's mission is to encourage people not just to be themselves but to shout it to the world with pride and confidence. Their bright-coloured nail polish is created to be as bold as its wearer, making them feel empowered. Like the main characters in How to Pronounce Knife, Defy encourages people to be unafraid of themselves and refuse to bend to fit expectations. The strong, bold shapes of the letters mirror the ferocious, unshakeable will of the characters. Each colour in the collection represents one of the fourteen stories and the defiant character within it. Nail care is a form of self-care practiced by people who care about themselves — who love who they are and want to show it. Souvankham Thammavongsa's characters love themselves honestly and without measure. This nail polish embodies that love.

Major: Design
Faculty Mentor: Constanza Pacher

Up and Over - A Vision of Perseverance

By Mesina Marrazzo

The hot air balloon is a vision of perseverance, strength, and freedom. Combined with the sunrise's mystery of what a new day might bring, this album package compels the viewer to think and wonder, just as the music of the Up and Over Trio desires to incite thoughtful introspection. The name Up and Over has grown to represent the Trio's resilience through the challenges of freelance and side jobs, finally coming together to create their first album. The sunrise indicates this new beginning, while the hot air balloon serves as a visual representation of rising up and over. Across the package, images of balloons drifting across a muted sunrise lend themselves to a compelling experience of deliverance and tenacity. The progress to a sky of blue, so as the viewer opens the package, they are guided from the bright orange sunrise on the cover to a soft morning glow that follows soon after. The record's centre labels bring the viewer to the cornerstone of their journey: when they look up during their ride through the clouds and the rising sun to behold the very thing controlling their rise and fall — a flap at the top of the balloon that releases hot air. This little hole dictating rise and fall is controlled by a simple cord within the pilot's grasp. On a journey through the hardships and challenges of life, everyone stands at the helm of their ship with the power to fall down or rise up and over.

Major: Design
Faculty Mentor: Constanza Pacher

DESN 315 Visual Narrative and Storytelling: Project 3 Stories from the future

By Kevin Nguyen

A 9-Part series of illustrations that depicts the future in 2050.

Major: Design
Faculty Mentor: Dr. Adolfo Ruiz

Visual Exploration of the Theme of Copies in Ray Bradbury's Marionettes, Inc.

By Jadyn Pierog

This experimental layout project includes the second half of the short story Marionettes, Inc. by Ray Bradbury, about two friends, Smith and Braling, who have issues with their marriages. To escape his manipulative wife and live out his dream of going to Rio, Braling purchases a Marionette, a perfect replica of himself. Eventually, the Marionette develops feelings for his wife and locks Braling in a toolbox to take over his identity. The bird's eye design for this story is that the left side of the spread reads typically, but the right side reflects the text on the left. The background on the right uses a photocopied paper background, signaling the theme of copies, which is vital in the story. The layout employs a two column grid, except for the repeated word 'tick' which is dynamic to foreshadow liveliness on behalf of the Marionette. Another clue is the story's last line when Braling's Marionette takes over his identity. The final dialogue is from 'someone,' and it is left ambiguous so the reader can infer the switch in identity. To clarify this, the words 'someone said' are the only two words reflected the opposite way. The text on the right is a fleshy pink colour to symbolize humanity. The reflected side is black and white to represent the technological nature of the Marionette, except the words 'someone said,' which are also in pink. The final conversation utilizes type variations to show the change in dominance and tone throughout the discussion.

Major: Design
Faculty Mentor: Constanza Pacher

Queen of Hearts: Breaking the Grid

By Angeline Santos

The story is designed in a way to show the containment of the characters. The characters are contained and have to follow the rules to avoid being beheaded by the Queen. The justification of the text aids in keeping the story and its content within a uniform line. This short story is filled with varying dialogue- the word silent interrupting the justified text creates an effect that accentuates the sudden change of the story, from constant talking to sudden silence. The repetition of the Queen helps express her demanding nature by using bold capitalized text to echo her voice. The placements of the repetitive text being outside of the body text show that the Queen overrules the rest of the characters that are contained in her kingdom. Expressing

the Queen's demanding and bossy nature through bold capitalized text overpowers the rest of the character's dialogue. Using a variety of tints helps the body text be legible and creates depth within the words, helping accentuate the text's tone. The simplicity of the text aids in showing how the characters are equal, except for the Queen. The illustration of the paint bucket and the paintbrush refers to the gardeners at the story's beginning when they try to fix their mistakes. The paint runs through words that represent the collective feelings of the characters when the Queen is near, anxiety or fear. The paint runs through the text adding visual interest and further accentuating the theme of the story.

Major: Design
Faculty Mentor: Constanza Pacher

Applying Concrete Poetry Techniques to Ray Bradbury's "Night Meeting"

By Summer Smith

This project uses the beginning of the story Night Meeting by Ray Bradbury to explore experimental type. The start of Night Meeting begins with Tomás driving through colonized planet Mars. He chats at a gas station, daydreams about time, and meets a Martian while he stops to rest. When Tomás and the Martian meet, they cannot touch each other and eventually realize that they have met due to a time anomaly. There are many repeating concepts within this first part of the story: feeling different, feeling alone, and time. This work uses rhythm and colour to explore these repeating motifs. The use of breaks in the text, italics, and different typefaces uses rhythm to highlight when a character feels different or lonely. Colour is used to separate the parts of the story that are explicitly about time. Like time acts differently in the story, the word "time" itself acts differently within the text. This work uses concrete poetry techniques to highlight the eloquent and poetically written prose.

Major: Design
Faculty Mentor: Constanza Pacher

Experimental Type - The City by Rad Bradbury Part I

By Kayla Tolentino

The City by Ray Bradbury is about an unpopulated planet far from the Earth. The city waited twenty thousand years for the men to arrive and designed to kill them to seek revenge because they were the enemies who abolished Taollans twenty thousand years ago. The first part mainly describes what the city looks like and how the men arrive. It started from a peaceful arrival that made the men keep going to see what was in the city. The city's senses speak to each other, as the Ears and the Nose take in information about the visitors and ask the Eyes to watch them as they explore. One of the men senses something familiar about the place. The men begin to panic as the city fully awakens. The layout's design pulls inspiration from the flow of the story. The first page reflects how the arrival of men is peaceful. The text is also left-justified to portray how everything is going evenly. It is where the city is trying to gain the men's trust to stay longer. However, the second page talks about how the city lures the men and traps them. Some

men have mixed feelings about the city, and the city's senses are starting to wake up. The idea behind the bad rags and different placement of texts is to show the chaos happening to the story. The city's dialogue is calmer, depicting its actions. It's in a serif typeface to show that the city is old, and the men's dialogue is more disorganized as they start to question and get a discernment that something is wrong with the city. It is in sans-serif to portray a modern feel. The city's senses are in sans-serif and bold to highlight the city's covert actions. Additionally, it has glitching background elements, mainly on the second page, describing the chaos and violence as the city traps and tries to wipe the men out.

Major: Design
Faculty Mentor: Constanza Pacher

Unspeakable: A Game Adaptation of MacEwan's Book of the Year Design Series "How to Pronounce Knife"

By Kayla Tolentino

Language has a significant part in the book How To Pronounce Knife. Many of the characters from the book encounter challenges in their everyday lives that have to do with language but still embrace who they are, and they don't try to be what societal norms are. This ideal and raw characteristic of the characters from the books is what inspired this card game. Unspeakable is a card game that challenges players to guess words and phrases based on the book how to pronounce knife. It is perfect for people who read the book. The game involves acting phrases or words from the book provided by the other team. The objective is to have your team guess the answer without talking and using gestures alone. The game is easy to play anywhere, requires less preparation but needs a lot of imagination. It is created to learn how to communicate with others without using a single word and get rid of language barriers, just like how the characters in the book show so many ways to communicate, not just by language but also through gestures and connections. The packaging design reflects the lightness of the short stories and how ferocious the characters are. Vibrant colours are used to demonstrate the character's rich experiences and to break how society describes immigrants' lives as sad and tragic. The primary colours are red, white, and yellow to unify it with the book still. The unique, minimalistic, and joyful shapes mirror the book's artful blend of simplicity and sophistication. The wordmark logo represents fold pages to indicate how the game is based on a compilation of short stories. There are 100 cards with words or phrases from the book, a sand timer, a score-pad, and a game guide inside the box. The cards are also colourful to keep the dynamic feeling from the packaging to the inside. The words are bolded and have a page number beneath so the players can still reference where the word or phrase came from in the book. Overall, the design makes the packaging dynamic and whimsical, which associates with the book's general feel.

Major: Design
Faculty Mentor: Constanza Pacher

Elsewhen: A Visual Exploration in Experimental Layout

By Kayla Tolentino and Celine Trinidad

Elsewhen: A Visual Exploration of Dialogue in Literature is a project of DESN231 Typography II, a course in the Bachelor of Design taught by Constanza Pacher at MacEwan University. Students were asked to visually translate an assigned short story into a two-page layout that challenges convention. With the overall goal of enhancing the meaning of the written text through visual devices, students focused on the peculiarities of language and speech in dialogues. Students were encouraged to explore linguistic deconstruction (semantics, syntax, grammar), alternative ways to organize the page, and to experiment with non-traditional grids, all while maintaining the legibility and readability of the text. Informative callouts where added throughout the publication to give conceptual or factual context to the piece.

Major: Design
Faculty Mentor: Constanza Pacher

Experimental Type - The City by Ray Bradbury Part II

By Celine Trinidad

The concept for the layout comes from the idea that the city's "flaws" are becoming more visible. The image of cracks on the spread shows that the city's modest façade is gradually breaking apart. Similarly, the theme is echoed by the text being staggered across the column grid to imitate fissures to emphasize the unstable, apprehensive atmosphere of the narrative. The tight leading of the body text also reinforces the tension felt within the story. The city's unravelling is most evident through its senses by reacting with what it sees, hears, smells, touches, and tastes as the men explore the surroundings. Teko is the typeface chosen for the city's personification as the thick, wide letterforms emulate the mechanical and oppressive nature of the city. Additionally, the body copy uses IM FELL Double Pica because the dated appearance of the typeface reflects the city's age and how long it has waited to exact its revenge on its visitors. Furthermore, the italicized text represents the city's thinking during the visit. The faded text in the background symbolizes the dominant, recurring thought that the city hungers for vengeance against the men. Finally, only the last portion of the story is right-aligned to reflect that something is "off" with the astronauts as they have been converted into robots before they return to Earth to cause ruination.

Major: Design
Faculty Mentor: Constanza Pacher

Monday or Tuesday Book Design

By Grace Zimmel

Monday or Tuesday is a collection of short stories by Virginia Woolf. This collection of stories is made to feel disorienting and distracting. It is Woolf's first attempt at her 'stream of consciousness' technique and makes the reader consider the mundane, daily life, and the passage of time. The fascinating part about this collection is that it makes you sit back and contemplate your own life as you are shown little snippets of the characters lives, thoughts,

actions, and the scenes around them. The book's overall themes are contemplation, mystery, and disorientation. The cover conveys these overall themes through its soft and muted colour palette. The soft colours give a sense of warmth and haze that contrasts sharply with the modern typeface on the cover. The type couples mystery and nostalgia through its elegancy, rounded shape, and balance of thick and thin line weight. The cover also showcases a long exposure portrait. The blurred nature of the face creates a sense of mystery and since her facial features are almost undetectable the viewer has the opportunity to see themselves in the image rather than the model. The inside of the book utilizes the same mystery and disorienting style of portraits at the beginning of each chapter. The chapter titles utilize the same typeface as the cover and creates a sense of unity and reminds the reader of the themes and emotions they saw or felt when looking at the dustjacket.

Major: Design
Faculty Mentor: Constanza Pacher

Arts and Cultural Management

Stitching with Stories: Learning to Bead Through Embodied Knowledge

By Madison Francoeur

I have created beadwork that reflects my embodied knowledge and allows me to connect with my Métis culture. I have spent the semester exploring the history of Métis beadwork with guidance from strong Indigenous women, who are proud of their heritage and have graciously shared their knowledge and skills with me. Through their teaching, I have learned how I can use beadwork as both an artistic outlet and as a way to feel more connected to my culture. I use my beadwork to reflect on my family's heritage and the pieces I create are connected to loved ones, be it through the design or the function of the piece. I work with a vibrant rainbow of seed beads on various materials to create organic patterns. I emulate traditional beadwork and samples of my family's work while adding my own design elements that reflect my experiences as I reconnect with my Métis roots. There are four pieces to my display. Firstly, a five-petal flower pin, the first piece of beadwork that I made for this project, highlights the growth that I have experienced. Secondly, a pair of bridal earrings made for my good friend's wedding. Thirdly, a pair of moccasin vamps that I recreated, based on a design made by my great grandmother. Finally, a decorative piece that serves as a cumulative reflection of both the skills that I have learned and the stories that I have learned.

Major: Arts and Cultural Management
Faculty Mentor: Dr. Heather Fitzsimmons-Frey

Oral Resources of the COVID-19 Pandemic as Knowledge-Based Storytelling.

By Bailea Jackson

Loud voices during the COVID era will be heard far into the future, but what about the everyday Albertan? They're thoughts, fears, and persistence are important for future researchers to fully understand what it was like during the COVID-19 pandemic. Over the winter semester I have

recorded oral histories of everyday Albertans where they share their experiences living during the COVID-19 pandemic. After recording the interviews, I uploaded the recordings onto a website I made to archive their stories for future researchers to access. The process in delivering the interviews has been based on 'knowledge-based' storytelling which empowers the interviewee by validating their experiences. My hope is to leave behind enough personal accounts to give an accurate representation of life in Alberta during this historic time.

Major: Arts and Cultural Management
Faculty Mentor: Dr. Heather Fitzsimmons-Frey

Biological Sciences

Cloning and Purification of a glycerol-specific alditol oxidase for biosensor construction

By Chrissa Barroma and Amanda Kryjak

Wine production is dependent on ethanol, but also on optimal glycerol concentrations, both of which are produced by S. cerevisiae fermentation. Wine characteristics like sweetness levels are influenced by glycerol concentrations. Additionally, elevated glycerol levels can be an indication of abnormal blood sugar levels. In both situations, close observations of glycerol levels are essential. One proposed method of measuring glycerol concentrations is through enzymatic oxidation with a glycerol biosensor. Alditol oxidase (AldO) is a recently discovered carbohydrate oxidase in S. coelicolor. Despite specificity for longer-chained polyols, studies have proposed that AldO can be used as a glycerol oxidase. Using random point mutations, an AldO mutant was isolated and had increased specificity for glycerol. These results suggest that potential for AldO with glycerol biosensor development. This project aimed to produce a glycerol specific alditol oxidase to be used as a biosensor. A synthetic alditol oxidase (AldOG) gene was used to produce AldOG via cloning methods. The method will also be utilized in conjunction with Dr. Samuel Mugo's work in biosensor construction. Finally, the resulting cloning techniques optimized for AldOG will be used in a future laboratory for a 300-level Biochemistry course currently under development by Dr. Bernstein.

Major: Biology
Minor: Chemistry
Faculty Mentor: Dr. Nina Bernstein

Bioautography As a Method For Testing For Antimicrobial Compounds in Noxious Weeds From Alberta

By Benjamin Bekkema

The threat of rising antimicrobial resistance in society makes the discovery of novel antimicrobial compounds more important than ever before. Natural substances, such as bacteria and fungi, are a common source of antimicrobial drugs. Plants offer great potential in this regard, as their potential for containing novel compounds has been underexplored. Noxious weeds in Alberta are of particular interest because their phytochemical composition has not

been fully studied, and they have been shown to disrupt soil microbe composition. One of the main hurdles of identifying phytochemicals that have antimicrobial activities is the slow and inefficient extraction and isolation of bioactive compounds. TLC-bioautography aims to simplify the identification of bioactive compounds by coupling the separation and testing of extracts together. This project's aim is to develop a reliable method of screening plant extracts for antimicrobial compounds using TLC-bioautography. The method was developed using plant extracts known to contain antimicrobial compounds to ensure activity was detectable. The separation of the extracts was optimized on TLC before directly overlying with Mueller-Hinton Agar inoculated with bacteria. Lack of bacterial growth was observed around some spots on the TLC plate, indicating antimicrobial activity. Overall, our results show bioautography has the potential to quickly screen plant extracts for antimicrobial compounds. Having a method that can quickly screen for antimicrobials will help shorten the time it takes to research weeds of interest and isolate new and effective antimicrobials.

Major: Honours - Biology
Minor: Chemistry
Faculty Mentor: Dr. Kimberley Harcombe and Dr. Tina Bott

Synthesis of Novel Thiazole Inhibitors of Intestinal Alkaline Phosphatase

By Benjamin Bekkema and Troy Neilson

Alkaline phosphatases (APs) are a group of homodimeric metalloenzymes that hydrolyze monophosphate esters. The overexpression of Intestinal Alkaline Phosphatase (IAP) is associated with a variety of diseases. By inhibiting IAP these diseases can be more effectively treated or prevented. Thiazoles are aromatic heterocycles containing sulfur and nitrogen, with a wide range of pharmacological properties. This study focused on synthesizing thiazole derivatives and testing if they can inhibit IAP. Enzyme inhibition was tested by measuring the Km and Vmax of the enzyme reaction. Km and Vmax were derived from Lineweaver-Burke plots created from the reaction rates of a series of reactions. Reaction rates were determined by measuring the absorbance of p-nitrophenoxide produced by the enzyme in a spectrophotometer. Overall, we were successfully able to synthesize the thiazole derivatives and found they uncompetitively inhibited IAP.

Major: Honours - Biology
Minor: Chemistry
Faculty Mentor: Dr. Tina Bott

Recovery Ability of Thermally Stressed Captive Coral Anthelia spp., as measured by Dinoflagellate Density

By Dana Dunbar

Coral reefs are quickly becoming endangered due to mass bleaching events. Implicated in this are warming ocean temperatures. The rising temperatures put stress on the symbiotic relationship between coral and dinoflagellates, which often causes the zooxanthellae to be expelled, eventually leading to coral death. The recovery ability of corals that have been

exposed to heat stress remains a relatively small area of research. The goal of this study is to determine the recovery ability of Anthelia spp. inhabited by clade C zooxanthellae after being exposed to heat stress. Over a nine-week period, dinoflagellate densities of the corals will be calculated as an indicator of coral health and recovery. Temperatures of the coral tanks will start at 28ºC and reach a maximum of 32ºC before being gradually lowered. Dinoflagellate density will be examined twice per week using a compound microscopy and a maceration method. Expanding the knowledge of the recovery ability of soft coral may be vital to continuing the existence of these species.

Major: Biology
Minor: Psychology
Faculty Mentor: Dr. Ross Shaw

Post-management dietary dynamics in spottail shiner (Notropis hudosonius) and trout-perch (Percopsis omiscomaycus) from 2009-2011 and 2013 in Lac la Biche, Alberta

By Haylee Hatton

Piscivorous fish stocking is a popular restoration strategy used to sustain fisheries as they provide quick recreational fishing benefits. However, fluctuations in predatory abundance could impose top-down effects on lower trophic level fish species like spottail shiner (Notropis hudosonius) and trout-perch (Percopsis omiscomaycus) resulting in dietary shifts. In 2005, the Lac lac Biche Alberta Fisheries Restoration Program was created to address depressed walleye (Sander vitreus) populations due to overfishing. Predatory double-crested cormorants (Phalacrocorax auritus) were culled and their eggs oiled, and walleye stocks were added to the lake in 2006 to restore walleye populations. The objectives of this research are to understand the diets of spottail shiner and trout-perch and to observe if the spottail shiner diet shifted after management. Stomach contents of thirty-five spottail shiners and ten trout-perch across Lac la Biche, Alberta from 2009-2011and 2013 were analyzed for four prey groups: macroinvertebrates, zooplankton, phytoplankton, and microplastics. Phytoplankton was the most consumed prey group in both spottail shiners and trout-perch, representing over 61% and 78% respectively of their diets. Phytoplankton and zooplankton consumption decreased whereas macroinvertebrate consumption increased. Sphaeriidae, Chironomidae, Chyprididae, and Stephanodiscaceae were consumed throughout all sampled years, although there were fluctuations in Cyprididae, Chironomidae, and Sphaeriidae between years, possibly demonstrating top down-effects on macroinvertebrate species prey abundance. An average of four microplastics were found in the stomachs of both species and consumption remained stable throughout 2009-2013. Evidence of top-down effects on spottail shiner and trout-perch diets due to walleye stocking is still unclear, as other possible indicators like pollution, could pose potential alternative stressors on feeding behaviors of lower trophic level species. However, this study increases the knowledge of spottail shiner and trout-perch diets, fosters research on understanding this little-studied biota, and informs future policy and management practice.

Major: Biology

Minor: Psychology
Faculty Mentor: Dr. David Locky and Dr. Mrinal Das

Species Characteristics that Affect Biodiversity Monitoring Using Citizen Science

By Areal Huang

With the sixth mass extinction underway, monitoring biodiversity is now more crucial than ever. Scientists often face a plethora of logistical challenges when it comes to monitoring biodiversity. Citizen science proves to be an effective and cost-efficient solution to spatial and temporal mass data collection that could be utilized to monitor biodiversity. However, since biodiversity is so vast, certain species are reported less often than others based on their characteristics. Characteristics such as whether a species can be classified as a pest, game, fur-bearer, or conflict species, and even species COSEWIC status, are factors that could affect reporting rates from citizen scientists. Utilizing data retrieved from the citizen science application, NatureLynx, these characteristics are analyzed via Chi-Squared tests to demonstrate if the presence or absence of these characteristics influences the detection and report rates of vertebrate species. In addition, the anticipated significance of this research can be applied to future biodiversity or single-species monitoring studies for scientists to determine whether citizen science is an appropriate methodology for their research.

Major: Honours - Biology
Minor: Psychology
Faculty Mentor: Dr. Jessica Haines

Detecting Antibiofilm Activity in Phytochemical Extracts From Local Invasive Weed Species

By McKayla Kirkpatrick

The development of antibiotic resistant pathogens is a serious global healthcare concern. Treatment for pathogens that form biofilms is particularly difficult because biofilm formation provides an extra physical barrier that enhances a pathogen's resistance to antibiotic treatment. New antimicrobial treatment options must be discovered to address this challenge. Invasive weeds are of increasing interest because of their potential to produce antimicrobial chemicals. Studies on the phytochemicals produced by local invasive weed species have been limited thus far, despite showing strong potential as a novel antibiofilm treatment due to their noxious and allelopathic nature. This project examined phytochemical extracts of invasive weeds from the local Edmonton, Alberta, environment and aimed to find evidence of extracts demonstrating antibiofilm activity. Previous students sequentially extracted samples with solvents of increasing polarity (hexane, ethyl acetate, and methanol). The solvent was removed by rotary evaporation, and the phytochemical mixtures were dissolved in DMSO to produce treatment extracts. Preliminary disk diffusion assays identified general antibacterial activity in these extracts, indicating potential for the extracts to also demonstrate activity specifically targeting biofilms. An antibiofilm assay was developed, in which biofilms of gram-positive and gram-negative bacterial species were treated with phytochemical extracts. This assay identified phytochemical extracts of at least three weed species that had an inhibitory or killing effect on biofilm cultures. These

extracts will be further studied to identify the specific phytochemicals causing the observed antibiofilm effects, and to assist in the development of new potential antimicrobial agents to treat antibiotic resistant pathogens.

Major: Honours - Biology
Minor: Psychology
Faculty Mentor: Dr. Kimberley Harcombe

Assessing Differential Expression of Enzymes in Dermacentor andersoni and Dermacentor variabilis Ticks Following Cold Exposure

By Cianna Klebak

The survival of overwintering ticks is influenced by several biochemical changes induced by the onset of cold temperatures. Dermacentor andersoni and Dermacentor variabilis ticks are able to increase levels of various biochemical components following cold exposure, however the mechanisms underlying these changes are unknown. This research focused on identifying well-known metabolic enzymes in these ticks in order to establish a mechanism for the increase in metabolites observed following cold exposure. The enzymes explored included glycogen phosphorylase, trehalose-6-phosphate synthase, and phosphofructokinase. As specific nucleotide sequences for each enzyme are not known in D. andersoni or D. variabilis, primers were developed by searching GenBank for homologous sequences in related organisms. RNA to be processed to cDNA was extracted from individual ticks following mechanical homogenization. The resulting cDNA was then subject to PCR using combinations of degenerate primers for each enzyme, and gene products were observed using agarose gel electrophoresis. From the pool of degenerate primers designed for PCR, four primer sets produced promising results. These resulting DNA fragments were excised from the gels to allow for ethanol precipitation of DNA. Following the successful sequencing of the resulting DNA to establish the true sequence amplified, future research will focus on deploying cold treatments to assess if an increase in enzyme expression exists following tick exposure to cold temperatures. This research will reveal potential mechanisms underlying the observed biochemical changes in ticks, as well as provide a comprehensive research design to be used for future studies identifying other genes expressed in cold exposure.

Major: Honours - Biology
Minor: Psychology
Faculty Mentor: Dr. Kevin Friesen

Developing Microsatellite Markers for Cypripedium passerinum

By Lina Lim

In the age of the Anthropocene, there has been a steady and exponential decline in global plant biodiversity leading to an increase in conservation efforts. Key to an effective conservation strategy is an assessment of the genetic diversity of the vulnerable population. One of the tools to assess genetic diversity is microsatellites. Microsatellites are a type of tandem repeat found in the DNA of all eukaryotes that have proven useful in assessing genetic diversity because of

their genomic abundance, high mutation rate, and resulting high levels of polymorphism. This project aimed to develop microsatellite markers for the endangered orchid, Cypripedium passerinum, to elucidate genetic variation in populations within the Wagner Natural Area in central Alberta. Fast Isolation of AFLP Sequences Containing Repeats (FIASCO) was used to generate three different microsatellite-enriched libraries using AC, AT, and AAG probes. Of the 687 clones in these libraries, 175 have been sequenced with 429 microsatellite sequences identified. Primer pairs have been developed for 13 of the identified microsatellites. Currently, these designed primer pairs are being evaluated for their ability to detect polymorphisms within the C. passerinum population at Wagner Natural Area. This project's findings will help contribute to the existing knowledge and conservation of C. passerinum individuals within and outside of the Wagner Natural Area.

Keywords: Cypripedium passerinum, Microsatellites, Genetic Diversity, Orchids

Major: Honours - Biology
Faculty Mentor: Dr. David McFadyen

The Race for Rhizobia: An investigation into the symbiotic capabilities of Fabaceae with rhizobia in nitrogen-deficient, disturbed urban soils.

By Sara McLean

Canadian citizens who reside in urban centres benefit from well-functioning urban vegetative communities because they provide ecosystem services that boost quality of life. However, healthy vegetative community development is only possible with productive soils; within cities, there tends to be disturbed, nutrient-limited soils that may not provide suitable foundations for complex vegetative community establishment. Disturbed urban soils in many cases have lost their uppermost horizons, and have significant nitrogen deficiencies which bring forth recolonization challenges for native vegetation. Fabaceae plants, with rhizobial symbionts, offer a sustainable reclamation solution through nitrogen fixation. Though, an issue with using Fabaceae involves the widespread application of their genus-specific inoculants when introducing them into an area. It's mainly understood that when planting Fabaceae, an important step is to inoculate the seeds prior to introduction to ensure that their specific microbial friends are present along with them when they begin to grow. Edmonton's disturbed soils have exhibited low microbial presence, but we are unsure if rhizobia specifically are low in abundance. There have been very few studies conducted here in Edmonton that have asked whether these bacteria are already present in our disturbed soils in numbers that allow for effective nodulation in Fabaceae. If we find they are, we can potentially eliminate the cost of inoculation in reclamation.

Major: Honours – Biology
Minor: Earth and Planetary Science
Faculty Mentor: Dr. Karen Christensen-Dalsgaard

Characterization of a Novel BMP3 Mutants Implicated in Ocular Coloboma

By Celina Vipond

BMP3 is a diffusible morphogen that is relevant to various critical developmental processes, and changes to this protein may result in disruptions to the signaling pathways and subsequent phenotypes of the organism. For example, a BMP3 mutation in zebrafish has been shown to result in ocular and skeletal abnormalities (Fox et al., 2022). To further elucidate the impact of mutation at the cellular level, we will investigate the effects of three novel BMP3 mutations previously implicated in the ocular disease coloboma on downstream cellular signaling mechanisms. To do this, we will utilize a tissue culture system to analyze each mutant's ability to be secreted and subsequently activate downstream cellular signaling. Overall, this research will aid in our understanding of BMP3 secretion and signaling and will expand on how changes to these essential processes can be related to disease and abnormal phenotypes previously discovered.

Major: Honours – Biology
Minor: Psychology
Faculty Mentor: Dr. Lisa Prichard

Effects of host plant quality and microsporidia infection on forest tent caterpillar, Malacosoma disstria (Lepidoptera: Lasiocampidae) performance and disease susceptibility

By Taylar Whidden

The cyclic population dynamics of forest tent caterpillar (FTC) (Malacosoma disstria Hbn.) (Lepidoptera: Lasiocampidae) are driven by a variety of factors including delayed-density dependent mechanisms such as disease. We measured the performance and microsporidia infection load of FTC when reared on four different diets, including trembling aspen foliage (Populus tremuloides Michx.), sugar maple foliage (Acer saccharum Marshall), a standard artificial diet, and an artificial diet fortified with lyophilized trembling aspen foliage to determine if diet interacts with microsporidia infection to alter FTC performance and their susceptibility to infection. There were no interactive effects between diet and microsporidia infection on adult performance of FTC, but diet affected FTC susceptibility to infection. Adult FTC had lower rates of infection when reared on fresh aspen foliage or an aspen-fortified artificial diet, compared to the other diet types. While diet and microsporidia infection do not interact to effect adult FTC performance, they may interact to effect larval performance as susceptibility to microsporidia infection varies by diet. The findings of this study help to increase our understanding of how disease and plant quality effect FTC and ultimately their population dynamics. Additionally, this study provides more information on tri-tropic interactions involving disease.

Major: Honours – Biology
Minor: Earth and Planetary Science
Faculty Mentor: Dr. Leah Flaherty

Child and Youth Care

Children's play in Cree culture

By Anita Brown

The world is full of many diverse ways of knowing and beautiful cultures, each shaping human development profoundly. A significant part of human development occurs during childhood and through children's play. Although there is accumulated empirical evidence on cultural differences in young children's play, there is a lack of research regarding Indigenous children's play. As a result, I have researched the unique characteristics of Cree culture and its relation to indigenous children's play. Cree culture holds to a circular worldview and uses the Medicine Wheel to define the four aspects of a child that must be nurtured: the physical, mental, emotional, and spiritual. Language, familial roles, and relationship to the land also play a role in shaping Cree children's play. Focusing the uniqueness of a single Indigenous culture and traditions, such as Cree, allows those who work and interact with Cree children and families to gain an understanding, respect and appreciation for their needs, ways of thinking and engagement in play.

Major: Early Childhood Curriculum Studies
Faculty Mentor: Dr. Ozlem Cankaya

Equity, diversity, and inclusion in early learning and childcare frameworks across Canada

By Gabriela Ferreira Arnaut Bernabe

Equity, diversity, and inclusion (EDI) in early learning and childcare frameworks across Canada The discussions about equity, diversity, and inclusion (EDI) have reached many different settings throughout Canada, such as educational, professional, and social. Researchers, policymakers, and educators can support, promote, and guide this discussion by combining research and practices. Early learning frameworks serve as a guide for many educators in Canada. This study investigated how early childhood curriculum frameworks acknowledge and suggest applying EDI in early childhood environments. In addition, a preliminary analysis focused on the terms regarding EDI and their use in ten provincial early learning frameworks. Some of our guiding research questions were:

- How does the framework indicate equitable, diverse, and inclusive practices and perspectives?
- What are the terms used to express equity, diversity, and inclusion?
- Does the curriculum have a separate section to discuss equity, diversity, and/or inclusion? If so, what might that mean?
- Is there any difference between the use of explicit and implicit language within the curriculum? If so, how?

We found that certain curriculum frameworks, such as Manitoba's, allocated a major section on EDI, while others (e.g., FLIGHT in Alberta) explored the concepts throughout the document. Some other findings of this study included the differences between the use of the terms "equity," "diversity," and "inclusion" explicitly and implicitly. To conclude, exploring EDI through early learning and care frameworks can help educators be aware of the Canadian socio-cultural context they live in and employ responsive, meaningful, and respectful practices for and with children, families, and communities.

Major: Early Childhood Curriculum Studies
Faculty Mentor: Dr. Ozlem Cankaya

Communication Studies

Stronger Than Fiction: Examining the Appeal of Fictional Characters in Parasocial Relationships

By Karly Broadstock

Parasocial relationships have become a popular topic of discourse throughout the COVID-19 pandemic when people are expected to keep a distance from each other. First coined by Donald Horton & Richard Wohl, parasocial interaction, unlike face-to-face interaction, is a one-sided perception of face-to-face interaction between an audience and a persona in a piece of media (Gregg & Schippia, 2017, p. 2). One particular parasocial relationship that has gained prominence in recent years is the parasocial relationships that individuals have with fictional characters, such as those in books, movies, television shows, and video games. According to Allen (2017), there are three major responses to parasocial interactions: 1) attractiveness or likeability, 2) perceived similarity, and 3) perceived realism. The researcher of this study aims to evaluate the most influential traits of a fictional character's appeal in parasocial relationships by conducting a survey and interviewing interested candidates over the age of 18. This study seeks out a sample of individuals 18 and older by posting a survey to a Facebook group dedicated to anime and manga communities and then reach out to the respondents interested in being interviewed. The interviews will then aim to understand how the participants perceive their parasocial relationships with their favourite fictional character and the most appealing traits of these fictional characters.

Major: Professional Communications
Faculty Mentor: Dr. Lucille Mazo

Does influencer culture promote toxic positivity on Instagram? Online Emotional Suppression and Mental Well-being

By Emma Dietze, Elyse Dzenick and Sara Halcro

The Covid-19 pandemic has led to an increase in communication through the internet and social media platforms. Influencer culture on social media platforms such as Instagram has been linked to negative impacts on the mental well-being of social media consumers. Toxic positivity, a newer form of emotional suppression, has become prevalent specifically on Instagram. In this research study, the researchers examined existing literature regarding social media, emotional suppression, and mental well-being and expanded the literature to primary research regarding the perception of toxic positivity within influencer culture on Instagram. The researchers adopted a mixed methods approach to collect data through online survey distribution. Participants answered three demographic questions and 11 questions directly related to the research through an online descriptive survey. The researchers analyzed the responses to these questions in order to answer the presented research questions, and provide discussion and recommendations. The research was focused on the prevalence of toxic positivity in influencer

culture on Instagram, as well as the effects on mental well-being after being exposed to toxic positivity.

Major: Professional Communications
Faculty Mentor: Dr. Lucille Mazo

Parasocial Relationships and its 65 years of Evolution: Reevaluating the Accepted Definition

By Cole Koch and Isaac Lamoureux

This research is to define and comprehend the primary effects of parasocial relationships with the aim of raising the discourse through a grounded theory approach. The research will explore different online platforms that may result in the manifestation of parasocial relationships: Twitch, YouTube, and Reddit. This research will focus on the users of the online platforms (not the creators). The research data gathering method will include multiple distributions of the same survey, interviews with users from the platforms, focus groups, and analyze existing data on parasocial relationships within the platforms. The goal is for the researchers' grounded theory to be supported by the collected data. This research will also explore how parasocial relationships have evolved historically; Such as, before the internet: how individuals formed parasocial relationships through the radio, through writing letters, through television, etc. This research is being conducted to critically evaluate the previous research that has been done on parasocial relationships and combine it with our current research to create a grounded theory and add to the discourse regarding parasocial relationships. This research also intends to define parasocial relationships and their effect on individuals.

Major: Journalism
Minor: Professional Communications
Faculty Mentor: Dr. Lucille Mazo

Computer Science

Pupil: A Web-based Application for Grading Multiple Choice Exams

By Courtney McNeilly

An alternative to Scantron exam grading, Pupil is a web-based application that allows for the grading of multiple choice bubble-style exams via the uploading of the scanned exams to a website where the results can then be downloaded directly. Pupil's bubble-style exam sheets can be printed in the required quantities on regular paper, the exam administered, and thereafter graded all within a day, cutting the need for expensive and time-consuming Scantron infrastructure. Using a computer vision library and web-based technologies, the application is programmed to recognize the answers filled in by students, compare those to the provided answer keys, and to then provide results and reporting back to the Instructor via the same website. By reducing the time and costs associated with grading exams in an institution of MacEwan University's size, it is estimated that a Scantron replacement could save the institution hundreds of thousands of dollars per year. It would also reduce the number of

opportunities for human error as well as the security risk of having student exam information physically transported between multiple locations. The current turnaround time per exam is five to seven business days and, during peak exam periods, Pupil is able to return that same exam by the following day.

Major: Computer Science
Minor: Business Studies
Faculty Mentor: Dr. Cameron Macdonell

Artificial Intelligence Approaches to Build Ticket to Ride Maps

By Iain Smith

Fun, as a game trait, is difficult to evaluate. Previous research explores game arc and game refinement to improve the quality of games. Fun, for some players, is having an even chance to win while executing their strategy. To explore this, we build boards for the game Ticket to Ride while optimizing for a given win rate between four AI agents. These agents execute four popular strategies in Ticket to Ride: one-step thinking, long route exploitation, route focus, and destination hungry strategies. We create the underlying graph of a map, we use a multiphase design, with each phase implementing several Monte Carlo Tree Search components. Within a phase, the components communicate with each other passively. We explore preferred map structures for each agent in 4-player, 3-player, and 2 player scenarios. The experiments show that the proposed approach results in improvements over randomly generated graphs and maps.

Major: Computer Science
Minor: Mathematics
Faculty Mentor: Dr. Calin Anton

Engineering

Designing a low-cost, open-source, 3D interior space scanner

By Matt Kantor and Darren Paetz

This project designed an open-source, low-cost 3D interior space scanner. The purpose of this design was to aid in making 3D scanning technology more accessible to a wider range of users. Two range-finding technologies, LIDAR and ultrasound were investigated during the design process. Several key metrics were used in the evaluation of the design: total cost below $500 CAD, accuracy of scans within 2 cm of real dimensions, simplicity of use and assembly for non-technical users, reliable supply chain for components, scan times, as well as open-source compliant hardware and software. The design was determined to be successful by these metrics. All software and hardware sources have been released online for free public access.

Major: Engineering
Faculty Mentor: Dr. Philip Mees and Dr. Jeffrey Davis

English

Textual Odalisque: From Roxolana to Hurrem Sultan

By Y. A.

My thesis examines the trajectory of literary depictions of the enigmatic figure of Hurrem Sultan (otherwise known as Roxolana, circa. 1502-1558), the legal wife of Sultan Suleiman the Magnificent and the first Haseki Sultan, or Imperial Consort, of the Ottoman Empire. It will first consider Hurrem's emergence on the European stage as a product of Orientalist discourse, then focus in detail on her more recent Ukrainian and Turkish cultural depictions. To assist my analysis, I will employ the theory of re-Orientalism, which is defined by Lisa Lau as an approach that determines "how cultural producers with eastern affiliations come to terms with an orientalized East, whether by complying with perceived expectations of western readers, by playing (along) with them or by discarding them altogether" (1). I will examine the Ukrainian opera Roksoliana (by Denys Sichynsky, 1911) and two contemporary Turkish productions, the television show Muhteşem Yüzyıl (The Magnificent Century, 2011, Tims Productions) and the play Gayri Resmi Hurrem (Unofficial Roxelana, by Ozen Yula, 2003) to show how they question, critique, and dispel Orientalist tropes associated with Roxolana in the western European imagination.

Major: Honours - English
Minor: History
Faculty Mentor: Dr. Svitlana Krys

Reading Ideology: The Evolution of Children's Literature as a Didactic Tool

By Samantha Daigle

Children's literature has undergone many transitions since its origination in the late eighteenth century. From the Romantic period all the way through to the Post-Modern period we can observe parallel shifts in children's literature from Europe and North America. The one facet of children's literature that remains the same over this 250 year period is the function of this literature as a didactic tool. Children's literature is in a unique position to impart cultural and societal values on young readers in early to middle childhood, while they are still developing their understanding of the outside world and their place in it. As such, the lessons relayed in children's books become the foundation on which young readers develop their ideological beliefs. In this paper I will examine various works of children's literature from the late eighteenth century through to the end of the twentieth century—including A Little Pretty Pocket-Book (1744), Alice's Adventures in Wonderland (1865), Little Women (1868), and Harry Potter and the Philosopher's Stone (1997)— in order to demonstrate the ways in which children's literature has evolved as an ideological tool. These texts demonstrate a shift from explicit moral instruction in the late eighteenth century to a more concealed form of ideological indoctrination by the end of the twentieth century.

Major: Honours - English
Faculty Mentor: Dr. Paul Lumsden

Cinematic Horrors of The American Body Under Capitalism

By Liam McIntyre

I'll be presenting my English Honours thesis which examines how horrific representations of the human body on screen and in film reflect a connection between identity formation and periods of economic development in 20th and 21st century America.

Major: Honours - English
Minor: Creative Writing
Faculty Mentor: Dr. Joshua Toth and Mike Perschon

The Roundness of Tongues

By Hannah Riegger

This creative nonfiction article will not only show how harmful the objectification and aestheticization of reptiles is, but it will also prove that in finding the humanity in reptiles, we can find the humanity within ourselves.

Major: Honours - English
Minor: Creative Writing
Faculty Mentor: Dr. Mark Smith and Dr. Chris Hutchinson

Traumayana: Nachtraglichkeit and Interaction of Traumas Across Time and Scale in Minekura Kazuya's Saiyuki and Saiyuki:Reload

By Layla Rosser

While pioneers of trauma studies such as Cathy Caruth and Shosana Felman have focused on cultural trauma's permutations and representations in literature, psychologists and psychiatrists have broadened the knowledge of the causes, manifestations, and treatments of trauma in the individual. Recent scholarship around trauma has also reached back to Freud's theory of Nachträglichkeit – generally translated as "afterwardsness" – which loosely means a breakdown of temporality in the face of new information or experience to allow a re-inscription of previous experience or trauma. As such, Nachträglichkeit provides a possible bridge between personal, specific instances of trauma and those created at a larger or cultural level. Japanese author Minekura Kazuya's Saiyuki manga series is a loose retelling of the ancient Chinese legend of The Journey to the West, in which the protagonists' personal traumatic histories intersect with a present cultural calamity. This situation simultaneously insists upon and refuses re-inscription of those previous traumas. Moreover, the present situation reaches back to trouble their perceptions of previous traumas, without allowing them to become re-inscribed with new understanding. I will employ the works of trauma theorists to show how the present-continuous nature of the overarching calamity in Saiyuki refuses present ability to assimilate traumatic experience in protagonist Sha Gojyo.

Major: Honours - English
Faculty Mentor: Dr. Dave Buchanan and Dr. Svitlana Krys

Tarrying with Trauma While Improvising Gender in *Who Do You Think You Are?*

By Brianna Sorensen

Alice Munro's 1978 collection of linked stories, Who Do You Think You Are? enacts what Lorraine York calls Munro's theory of fiction as "tarrying with difficult emotions and knowledges." Judith Butler's seminal 1988 theory of gender performativity postulated that improvising gender incurs obvious and covert social punishments, but that performing gender includes the possibility of innovation. Rose, the protagonist, succumbs to and contests norms imposed on women in the southwestern Ontario township of Huron County during the 1940s to 1970s. This thesis explores Rose surviving punitive social conventions in her cultural context which are contiguous with trauma. For Rose, failure to conform is what Jack Halberstam defines as "queer failure": it is a triumph of personal authenticity over gender essentialism and an acceptance of human imperfection. In the journey towards self-knowledge, Rose's surviving trauma and defying gender scripts cause the "sticky affects" of shame and humiliation identified by Amelia DeFalco; the feeling that women are not afforded hope; and, in stressful situations, emotional dissociation and emotional economies, as identified by DeFalco and York. Rose's marriage fails because of a sadomasochistic power struggle. Rose tarries with disconnection from others and from self; however, she innovates gender and subverts the intergenerational cycle of victim-victimizer by achieving a sense of community and strengthening personal authenticity, which Margaret Atwood says is, for "Munro's women," "an essential element, like air."

Major: Honours - English
Faculty Mentor: Dr. Jack Robinson and Dr. Svitlana Krys

Human Services and Early Learning

Analysing and documenting mathematics content of Canadian early learning frameworks

By Tori Vail

Children's early numeracy knowledge and skills is one of the most important predictor of children's future school achievement and success in life. Children's early experiences in learning environments are also crucial in shaping their educational paths. Early childhood educators across Canada explore and learn from early learning and childcare frameworks to enrich their pedagogical planning. Our goal was to explore these curriculum framework's suggestions for educators. This research is preliminary and provides documentation of mathematical ideas and suggestions in Early Learning and Childcare frameworks across Canada. Our analysis across 10 curriculum frameworks suggested that Prince Edward Island framework is one of the most detailed and specific with mathematical explorations and play opportunities, that is also closely aligned with current early numeracy research. Our conclusions point to the importance of offering children specific mathematical experiences in the early years through guided play.

Minor: Early Childhood Curriculum Studies
Faculty Mentor: Dr. Ozlem Cankaya

Smart Camps: The Digital Revolution's Dark Creation

By Kyle Gibson

Within the history of penal systems, China represents a special case that initially adopted western penal models in the early 20th century but subsequently diverged onto a separate and unique path. Upon Mao Zedong's victory in 1949 over the ruling Nationalist government, the focus on a western prison reform model shifted to one based on ideological purity and correct political thought, resulting in re-education camps known under the blanket term laogai. This change in penal practice occurred during the embryonic stages of the digital revolution, where humanity discovered ever more powerful methods of computation and data processing. The fixation on punishing incorrect thought led the People's Republic of China (PRC) to adopt data collection and observation methodologies that could be easily digitized, allowing for exponential growth in oppressive systems. This comingling of laogai camp practices with computing power harnessed by the digital revolution has resulted in a new system of penal camps that is a stark break from traditional models. Using the PRC as a historical case study, this presentation will explore the history of re-education camps, contextualizing the evolution towards the modern 'smart camp' that is unique within the history of internment camps.

Major: Computer Science
Minor: History
Faculty Mentor: Dr. Aidan Forth

Josef Pieper and the Recovery of Leisure in the Workaday World

By Lauren Rundell

In this paper, I look at Josef Pieper's conceptualization of what he calls "total work". In the world of total work, one's value is reduced to their practical value to society. In this world, Pieper argues that we lose our ability to realize our full humanity by limiting ourselves to only the concerns of the workaday. The missing element that Pieper brings forward is that of leisure. Leisure, Pieper explains, is a time and place in which we are able to be fully human, free from concerns of the everyday. By recovering the practice of leisure, Pieper believes we can recultivate that which makes us distinctly human and reclaim our value as more than just our output. One of the activities Pieper proposes to promote leisure, the example that I will be focusing on here, is his example of philosophy. When properly practiced, Pieper argues that philosophy can lead to the realization of one's humanity through experiencing a deeper understanding and affirmation of the world. Through looking at Pieper's writings on total work, leisure, and philosophy, I will argue that the University should be a space dedicated to the fulfillment of the individual by distinguishing it from concerns of the everyday. I will then argue that this should be done by grounding academic disciplines in philosophy and practicing them in a philosophical way. By reuniting the University with its foundation in philosophy, the university can be re-established as a place of leisure, where one can realize their full humanity.

Major: Philosophy

Minor: Classics and English
Faculty Mentor: Dr. Edvard Lorkovic

Interdisciplinary

The Hundred Homes Initiative - "Attempting to end poverty; starting with 100 loving Homes"

By Lisa Muyambo and Maryanne Muyambo

Poverty can be thought of as not having enough money, funds, or income to afford the basic necessity of life. Optimistic individuals claim there have been many successes in addressing and improving poverty around the world. This can be credited to the great effort of economic, political, social and even environmental solutions that have been implemented globally to address the issues of poverty. However, pessimistic individuals question the millions of individuals that have been left out of the economic growth and poverty alleviation. Some go as far as addressing the winners of administering unfair, exploitative measures to reach their levels of comfortability. A multitude of literature and research purposes: major funding of government programs, wealth redistribution and equity are the main solutions. However, what are the roles and responsibilities that the family, community, and the overall middle class must play in order to address the issue of poverty as well is further explored in this report. The main purpose of this research paper is to address the failures of the past, the improvements that are needed and how society can overall re-imagining the social welfare system.

Major: Political Science
Minor: Business Studies
Faculty Mentor: Chris Hancock

Mathematics and Statistics

Measuring the activity of Saccharomyces cerevisiae in relation to home-based additives by measured net weight loss

By Shaun Mainwaring

This research study is to measure the activity of saccharomyces cerevisiae through selected additives which have been added in the hydration step of making bread dough. The saccharomyces cerevisiae is sensitive to sugars (Mazzoleni, S. et al.2015) and by using multiple possible additives that can be found at home, we can compare which ones give a healthier yeast and therefore a better rise to the dough. As the saccharomyces cerevisiae ferments, it consumes the sugars naturally in the dough and creates an acidic environment to maintain its growth and produces CO_2 as a product of this reaction, which is the cause for the rising dough. This can be tracked by how active the yeast is to its mean weight loss by measuring the weight loss of 3 separate batches and comparing the results through a Multiple Comparisons of Means: Tukey Contrasts test to see if the significance to what is added to what was added to help the fermentation process of the yeast. We can see that easily soluble sugars

are the best choices for promoting the health of the saccharomyces cerevisiae in by the test with $F_{(9,20)}=14.49$, $p<0.0001$.

Major: Chemistry
Minor: Psychology
Faculty Mentor: Dr. Karen Buro

Bragg Diffraction of One Dimensional Substitution Tilings

By Orion Sehn

This project presents tools for modeling and visualizing one dimensional substitution tilings as well as calculating and displaying their Bragg Diffraction patterns. The application is rather robust in that it allows the user to define a particular substitution, then displays visuals based on the defined substitution, erroring out if the substitution is invalid. The application also includes a set of some of the best-known one-dimensional substitutions, from which you can select from. For a given substitution the application can generate a segment diagram, calculate the PF Eigenvector, determine if the substitution is "Pisot", generate a symbolic text representation of the substitution, plot a diffraction intensity graph, and generate a project of the Bragg diffraction pattern.

Major: Mathematics
Secondary Major: Computer Science
Faculty Mentor: Dr. Nicolae Strungaru

Nursing

Forensic Nursing and the Healthcare System's Response to Sexual Violence

By Sydney George

This article presents a rapid review of the literature on care provided to survivors of sexual assault in hospitals and treatment centers. The purpose of the review is to examine the Canadian healthcare system's response to survivors of sexual assault to provide an understanding of the strengths and weaknesses of care provided, in order to identify recommendations to improve our response in the future. The studies included in the review were located by exploring four electronic databases and reference searching. Results show that survivors of sexual assault generally expressed high levels of satisfaction with the hospital-based nursing care received. Patients often left feeling empowered, respected, and well-informed. The most common downfall of care was the wait time that survivors had to endure while waiting for a forensic nurse. As well, there was some discrepancies on clear informed consent in the medical forensic examination. Recommendations for improved care involved the following: having around the clock and on-site sexual assault nurse examiners in emergency departments, increased privacy for survivors, sensitivity training for emergency department staff and general practitioners, and implementing systemwide policy and education to care for survivors. Lastly, limitations of the reviewed studies and suggestions for future research are discussed.

Major: Nursing
Faculty Mentor: Dr. Judee Onyskiw

Perceptions of clients about healthcare professionals (HCP) who have visible body art: a scoping review of the literature

By Sheri Graff and Amy Wildeman

In healthcare, appearance plays a significant role in a patient's first impression of a healthcare worker's competence, compassion, performance, and quality of care. Given that nurses are an essential part of the patient care team, it is imperative for nurses and other healthcare providers to recognize the use of personal expressions such as tattoos while still being able to achieve therapeutic relationships with clients. This scoping review aims to answer the following question: What is known from the existing literature about clients' perceptions about healthcare professionals who have visible body art? Keywords included terms related to body art, healthcare professionals, and to perceptions and understanding. A total of 435 studies published until January 2022 were identified, of which 8 met the inclusion criteria. Out of eight studies included in this review, six identified that body art is negatively associated with patient care, and two found there is no impact on body art and patient perceptions. Additionally, results show that clients attribute a higher degree of professionalism to HCP without visible body art. Finally, some studies indicate that female HCP with visible tattoos were perceived as being less professional than their male counterparts. It is essential to understand patient perceptions of healthcare professionals with and without body art and determine if appearances can alter the relationship between patient and provider.

Keywords: body art, piercing, healthcare professional, perception, care.

Major: Nursing
Faculty Mentor: Dr. Emilene Reisdorfer

Organizational Behaviour, Human Resources Management and Management

How to increase student-engaged undergraduate research

By Patrick Jean

Undergraduate research has increasingly become a valuable part of the university experience. However, most of the focus has been on sciences and humanities, and little focus has been put to school of business research opportunities. We will examine the benefits that present themselves to students, schools, and industry when more research opportunities are given to undergraduate business students.

Major: Honours - Management
Minor: Economics
Faculty Mentor: Dr. Albena Pergelova

Physical Sciences (Chemistry, Earth Sciences and Physics)

Texture Classification of Manito Lake Stromatolites

By Ranen Calvert

Information on stromatolite formation and development has been evolving as more examples are examined. Manito Lake located near the western border of Saskatchewan is a saline lake that exhibits many different forms of stromatolites and microbialites, mostly developed throughout the Holocene. Upon looking at the textures of these various recent stromatolites, comparisons can be made between the different textures and their formation processes. To accomplish this, thin sections were taken from various microbialites in the Manito lake area and examined under a Zeiss Axio Scope A1 petrographic microscope. Each sample was analysed for microbial and crystal textures typical of stromatolite growth observed in ancient and modern settings in order to assign a classification to each sample. They were also looked at for the presence of organic matter to test correlation between these organics and the crystalline structures. As stromatolite textural classification becomes more common and widespread, it will also become easier for comparisons to be made across samples. Along with this, further understanding of texture can assist in understanding the true nature of stromatolite formation processes.

Major: Biology
Minor: Earth and Planetary Science
Faculty Mentor: Dr. Hilary Corlett

Microplastics in Stormwater Ponds around Edmonton

By Ryan Duchnowski

Microplastics are considered any particle of plastic that is under 5mm in size. These plastics pollute our environment and are harmful to the wildlife that inhabit it, as well as to us humans. Large quantities of microplastics enter environments through runoff in urban areas. Stormwater runoff ponds capture runoff after rain events and store it in until further released. More specifically, pollution (and how much of it) that ends up in stormwater ponds can serve as a great indicator to the actual amount of pollution in our environment. This study investigated the quantity and types of microplastics present in stormwater ponds from throughout the Edmonton area. Sample collection was done using a pump, placing it into the water, and filtering the water through a 53 micron filter, and then stored in jars, all taken from the year 2019. Extraction was carried out using enzyme digestion, coupled with density separation (via Potassium carbonate, K_2CO_3). Microplastics were quantified using nile red fluorescent staining. Raman spectroscopy was used to identify the types of plastics in the sample. This first of its kind study in Edmonton examines the quantity of microplastics found in these stormwater ponds, in and around the Edmonton area. As plastic consumption increases, this study aims to provide a scope as to how much plastic is in the environment around us.

Major: Physical Science (Chemistry and Earth Science)
Faculty Mentor: Dr. Matthew Ross

Phytochemical plant extractions using switchable-hydrophilicity solvents

By Gaganpreet Gill

Essential oils extracted from plants contain phytochemicals that are useful for a number of applications, such as the food industry, cosmetics, and pharmaceuticals. Traditional methods of extracting these oils can involve using harmful solvents, which are typically removed using distillation and considered waste after each extraction process. Recently, an alternative class of solvents, called switchable-hydrophilicity solvents (SHSs), have been identified as an alternative to traditionally used solvents. SHSs can switch between being immiscible with water in its natural form, to miscible with water when mixed with dissolved carbon dioxide. Theoretically, SHSs can be used as a solvent to extract phytochemicals from plants and can be removed from the product of interest through switching rather than distillation. Additionally, a SHS could be readily reusable for sequential cycles of an extraction process. This presentation compares the use of N,N-dimethylcyclohexylamine (DMCHA) as a SHS in oil extractions against traditional methods (steam distillation and Soxhlet extraction) of extracting Lavandula vera (L. vera) essential oils. The chemical composition of essential oils and selectivity to compounds of interest were analyzed using gas chromatography-mass spectrometry. The findings of this project can be used for future contributions studying the sustainability of using SHSs as solvents in phytochemical plant extractions.

Major: Biology
Minor: Chemistry
Faculty Mentor: Dr. Tina Bott and Dr. Roland Lee

Recreating the Paleoecology of the Rocky Mountains, AB

By Paige Goshko

Since the 1990s, ice patch research in Northern Canada has yielded valuable scientific information. Paleoecological studies have consisted of pollen analysis, ancient DNA analysis, and macrofossil analysis. These studies contribute to the current body of knowledge on climate change and inform researchers on the potential changes to come as climates fluctuate. In this project, 6000- to 4000-year-old plant macrofossils from remnant ice patches were used to interpret treeline and subshrub fluctuations in the Rocky Mountains, Alberta. Plant macrofossils were collected, dated, sorted, identified, imaged and then plant assemblages were analyzed to infer treeline and subshrub responses to climate fluctuations. Results show an increase in shrub density from Sample #5 (5468-5886 14C yr BP) to Sample #6 (4895-5122 14C yr BP), and that treeline in CM-II-IP resembled modern treeline. Subshrubs found in the area also correspond with modern plant assemblages. These results suggest that environmental conditions and plant communities resemble those today. Further ice patch research using other paleoecological proxies will provide more insight into the climate and treeline dynamics in CM-II-IP.

Major: Biology
Minor: Earth Science
Faculty Mentor: Dr. Robin Woywitka

Determining the Adsorption of Cadmium to Diatoms as a Function of pH

By Erynn Hunka

Heavy metal contamination has been rapidly increasing in recent years due to exponential acceleration in using these toxic elements in various industrial, agricultural, domestic, and technological applications. Once in the environment, heavy metals can't be volatilized like other common pollutants (pesticides, hydrocarbons etc.), impeding their ability to degrade rapidly. Cadmium is considered one of the most ecotoxic metals, exhibiting adverse effects on all biological processes of humans, animals and plants. This poses a severe threat to organisms in the food web, including humans, as heavy metals are known to bioaccumulate. Various ecological interfaces (minerals, microbes, etc.) adsorb metals and impact their cycling. Thus, many factors (pH, water chemistry, etc.) must be considered to predict distribution and complexation of metals in particular environments. The ability to predict the fate of Cd in aquatic environments is imperative, and diatoms play a significant role in the degradation, speciation, and detoxification of hazardous metals. Diatoms are photosynthetic organisms found in aquatic ecosystems. When they die, they sink and accumulate, forming sediments. When an aquatic ecosystem is contaminated with Cd, it's crucial to understand its mobility; will it remain in the water, or will it be removed by sorbing to sediments? This research investigated how Cd sorbs to diatoms as a pH (2-10) function and Cd: diatom ratio. The Inductively Coupled Plasma-Optical Emission Spectrometer (ICP-OES) was used to analyze the amount of Cd remaining in the water sample. FTIR was used to identify the adsorption of Cd to the diatoms.

Major: Molecular Biology
Minor: Chemistry
Faculty Mentor: Dr. Janice Kenney

Introductory Robotics Experiment to be Implemented into a Senior Physics Lab

By Ty Joinson

Robots are autonomous systems that can sense their environment and achieve a goal by acting on it. The goal of this project is to create an introductory robotics experiment to be used in a MacEwan senior level physics lab. Such a robotics experiment will allow students to carry out basic physics experiments while gaining an understanding of coding/programming and the difficulties that apply to robotics. In this lab, students will have the freedom to display their creative ability through designing an experiment with the Makeblock Ultimate 2.0 10-in-1 kit. I will outline some project ideas and show the results of those experiments, such as testing the limits of the ultrasonic sensor within its claimed errors and testing the effects on an ultrasonic sensor when an object is placed in its periphery. Learning outcomes for students will also be discussed as well as the different ways that students can be assessed for their chosen experiment.

Major: Molecular Biology
Minor: Physics
Faculty Mentor: Dr. Logan Sibley

Adsorption of Cadmium to Diatomite

By Ben Michalchuk

Unnatural levels of cadmium have been detected in rural and urban runoff, as well as surface and ocean waters globally. The universally toxic effects of cadmium on humans, plants, animals, and microbial life alike emphasize the importance of concern from these discoveries. Cadmium is introduced into the environment both naturally and anthropogenically, but the contribution of cadmium from anthropogenic sources has been increasing, restructuring the cadmium biogeochemical cycle. Anthropogenic sources of cadmium include expelled wastewaters and the displacement of contaminated soils from industrial sites- often urban adjacent. There is a known ability of raw diatomite (amorphous bio-silica), a low-cost biosorbent, to adsorb cadmium; but measures of the adsorbance capacities and binding mechanisms have varied markedly. In this study, Raman spectroscopy as well as Fourier transform infrared (FTIR) spectroscopy are employed to inform a more replete understanding of the physical chemistry of cadmium binding to diatomite. The influence of varying pH within environmentally relevant ranges and cadmium concentration on the diatomite's capacity to sorb cadmium is evaluated. This us done through adsorption isotherms, as a function of Cd concentration and pH, and the amount of Cd removed from solution is monitored using Inductive Coupled Plasma Optical Emission Spectroscopy (ICP-OES). FTIR spectroscopy was used to determine the bulk binding mechanisms, while Raman spectroscopy helps us determine the variations of Cd sorption as a function of diatom morphology. Reconciling the behaviours of cadmium against diatomite at environmentally relevant conditions aids attempts to mitigate cadmium pollution and modeling its current and future biogeochemical cycle.

Major: Physical Science
Minor: Physics
Faculty Mentor: Dr. Janice Kenney

Process-Deposition Model for Target Surveys of Late-Pleistocene, Early-Holocene Natural Sites

By Ben Michalchuk

West-central Alberta is a part of the "Ice-Free Corridor" (IFC), including regions a part of the earliest ice-free sections of land within continental Canada in the latter end of the late-Pleistocene. Recent evidence suggests the IFC may have been biologically viable at least ca. 13,000 years ago, but histories of its earliest human occupation(s) is contentious and dedicated explorations are limited. Stagnant sedimentation through the Holocene and a paucity of organic materials in these deposits further inhibit the establishment of the cultural chronologies of the corridor. For this, a process-depositional model was developed as a tool for the assessment for archaeological potential and surveys. The model recognizes the elevated depositional potential of soils atop topographies with concave geometries along the lower margins of raised, Late-Pleistocene/Early Holocene aged landforms. Field application of this survey approach occurred in the Summer of 2021 tested the relative reporting of soil depths at several locations across west-central Alberta, targeting Early Holocene eolian landforms. Under one hundred shovel tests were preformed, yielding 2 positive results within mapped regions. One test came during a site reinvestigation of known surface scatter: the other a distinct site in an under sampled region. Early results indicate the presence of cultural materials over mapped regions at a similar

rate as the regional rate, but more widespread application of this survey method is needed. It is recommended that current survey strategies be adapted to sample a wider variety of landforms and landform elements, where physical location and geometry positively influence soil deposition.

Major: Physical Science
Minor: Physics
Faculty Mentor: Dr. Robin Woywitka

Spectroscopic investigation of Cadmium sorption to Oncoids

By Kaylee Onucki

There is a growing interest in preserving water quality, prevention of contamination and remediation of water systems. Once a metal contaminant enters a system, it is important to understand how the minerals and microbes making up a system will react to the contaminant. In this study, we are interested in how oncoids, nodular coated grains formed by biological activity in water environments, found in an alkaline lake in the Canadian Rockies, would take up metals in a contamination event. Oncoids were collected from a carbonate-rich mountain lake in western Alberta. The oncoid material was dissected and exposed to Cadmium (Cd), a highly toxic metal. The pH range studied was between 4-11. Following exposure, the oncoid was removed from the solution and the aqueous phase was analyzed by inductively coupled plasma optical emission spectroscopy (ICP-OES), while the oncoid was analyzed using Fourier transform infrared (FTIR) spectroscopy. Raman spectrometry was used to characterize variations in the Cd binding across the oncoid. Adsorption of Cd by the oncoid was found to increase as a function of pH, 24% at pH 4 rising to as high as 96% at pH 11, however above pH 8 much of that removal from solution was related to Cd precipitation. Assessing how environmental components, such as oncoids take up metals, such as Cd, is important as it could inform us on possible syncs of metals, to improve water qualities and environmental hazards in present day contamination events, but also inform us of potential metal syncs in geologic history.

Major: Physical Science
Faculty Mentor: Dr. Janice Kenney

Carbonate sedimentology of coral reefs in Sumba Island, Indonesia

By Cedrick Ramos

The Island of Sumba, Indonesia, comprises several reef terraces formed by episodic tectonic activity. Volcanic-derived sediment has been found to have been incorporated into reef fabrics without impacting coral growth, which contradicts the theory that coral reefs do not survive under significant clastic input. However, it is unclear whether intervals of increased clastic content affect coral growth strategies or whether the immature nature of the volcaniclastic sediment explains why clastic input does not choke corals. This study employs various thin sections from Pleistocene-age fossil reefs to document and characterize the sediment's size and circularity, which is a measure of sediment maturity. The study involves taking images of

each thin section. The thin section have stained with alizarin red to turn the calcite/aragonite grains red without affecting other grains. Then, the images were colour-indexed to black and white, with clastic grain appearing as white. The images underwent thresholding to isolate the white grains to measure their circularity and sizes. A range of grain sizes in these sections have revealed that some of the grains detected are small enough to enter corallites and pores in the coral skeleton, while others are much larger and would not impact the coral growth.

Major: Physical Science
Faculty Mentor: Dr. Hilary Corlett

Detection of Early Aragonite to Calcite Diagenesis in a Modern Inner Carbonate Ramp

By Radhika Saini

Early diagenetic replacement of aragonite by the more stable calcite mineral is not well documented in modern carbonate environments. Understanding the timing of these early diagenetic transitions is critical to our reliance on geochemical signatures in carbonates as paleoenvironmental proxies. Depositional features and early diagenetic alterations are often overprinted and challenging to recognize once sediments are lithified and buried, where pressure, temperature, and subsurface fluids impart further diagenesis. Whole-rock x-ray diffraction (XRD) is traditionally used to distinguish between calcite and aragonite minerals, but this technique cannot map these transitions on a grain-by-grain scale. Raman spectroscopy is also practical for distinguishing between carbonate minerals, and it is non-destructive. Though similar, the Raman spectra of aragonite and calcite display subtle differences in peak positions, which are ideal for differentiating these minerals within a single grain that may have experienced early diagenetic alteration. The main objective of this study was to use Raman spectroscopy to identify early diagenesis, in the form of aragonite-to-calcite transition, in inner ramp carbonate sediments from Abu Dhabi, United Arab Emirates. Additional XRD, stable isotope $\delta18O$ and $\delta13C$, and petrographic data were used to document changes through the 26 cm section of cored sediment. XRD of unconsolidated sediment revealed a downward decrease in aragonite to calcite content (80:4 top 12 cm and 61:8 bottom 12 cm). Polished thin sections from the sediment core were used to create 2D Raman maps of grains subjected to early diagenesis. The Raman 2D maps depict an explicit transition between aragonite and calcite as the corresponding Raman spectra contain both calcite (280 cm-1; 714 cm-1) and aragonite (203 cm-1; 704 cm-1) peaks. In some of the mapped grains, laser induced heating is causing the aragonite to transform to calcite and serves as a cautionary note for conducting Raman analysis on carbonates. Optical microscopy confirmed aragonite-to-calcite alteration along the edges of grains that have experienced mechanical boring. Additionally stable isotope $\delta13C$ and $\delta18O$ data is typical of the arid climate of Abu Dhabi and $\delta18O$ is decreasing with the decreasing amount of aragonite down the core. These findings illustrate the need for further investigation into the timing and controls on early diagenesis. Aragonite that has been altered to calcite in the upper 25 cm of the sedimentary column may still record primary marine signatures. However, without further geochemical characterization of altered sediments, we cannot be confident in paleoenvironmental proxy data extracted from the carbonate record.

Major: Physical Science
Minor: Business Studies
Faculty Mentor: Dr. Hilary Corlett

The Accumulation of Microplastics in Different Estuaries

By Helen Tiet

Microplastics are primarily produced by the fragmentation of larger plastic materials via physical, chemical, or biological means. They are carried by wind and water to various marine environments, such as estuaries, and deposited into sediments. Estuaries are microplastic sinks and can provide information about dominant plastic types and microplastic retention in marine environments. Various studies have produced inconsistent results when comparing microplastics and their sediments. The amount of microplastics accumulated in the sediments is thought to depend on grain size. Samples were collected from two locations along the western coast of North America (Craigs Bay and Netarts Bay) to determine if different depositional environments affect the accumulation and retention of microplastics. Approximately 12.5g of each sample was sifted through various sieves (4000, 2000, 1000, 500, 250, 125, and 63μm, respectively) to determine their grain size distributions and dominant grain size. Microplastics were extracted from an unsorted portion of each sample using a density floatation and enzyme digestions. They were also classified by shape: fragment, fiber, film, and pellets. The overall quantity in each sample was combined with each samples' grain size distribution to determine if the different depositional environments affect the accumulation and retention of microplastics. The work is part of a new and emerging research area within sedimentology that focuses on the correlation between sediments and microplastics.

Major: Physical Science
Minor: Sociology
Faculty Mentor: Dr. Matthew Ross and Dr. Hilary Corlett

Dunes: Portable OSL Technology and its Practical Applications in Canadian Archaeology

By Rebecca Trites

This research will provide an overview of OSL and pOSL technology; this includes a description of its components and an overview of how it works to measure luminescence signals from both quartz and feldspar samples. OSL is an acronym for optically stimulated luminescence and these machines are able to measure the amount of radiation absorbed by mineral samples since their most recent exposure to heat or light. Electrons are trapped in the crystal structure of minerals when they become exited by isotropic radiation; with stimulation from the OSL machine these electrons can be released and measured. Portable OSL technology is able to analyze bulk samples of sediments, in real-time, at archaeology surveys and excavations. The purpose of this research is to look at the practical applications of pOSL in archaeological sites in Alberta, Canada. This will include a comparison of the data retrieved from sites characterized by sand dune sediments and data retrieved from non-sand dune sites. A discussion follows about the

viability of using pOSL for archaeological purposes in both sand dune and non-sand dune environments in Alberta, Canada.

Major: Chemistry
Minor: Biology and Earth and Planetary Sciences
Faculty Mentor: Dr. Robin Woywitka

Psychology

Mindfulness as a Moderating Variable of Selfishness and Materialism

By Holly Bosch

For materialistic individuals, the pleasure of acquisitions is central to life and is pursued to enhance happiness, possessional-defined success and attain status. Materialism can be described as the importance people attach to worldly possessions that are expected to be a source of satisfaction or dissatisfaction. Focusing on the present moment is a possible method of reducing the negative influences of materialism. Therefore, this study focuses on mindfulness as a strategy to minimize materialistic pursuits. Mindfulness is the practice of cultivating a mode or state of awareness and is used to eliminate fleeting mindful states and recognize the transient nature of thoughts and feelings. Additionally, previous research has demonstrated how mindfulness can reduce the link between motivation and behaviour and promote rational judgment that is consistent with our innate needs. The present experimental research examines mindfulness activities as a moderating variable of selfishness and materialism in undergraduate students. Selfishness is widely regarded as the excessive tendency to focus on the self, regardless of the well-being of others. Considering previous research, we expect to find the participants scoring high in selfishness and materialism that engage in the mindfulness activity will shift their awareness inwards and not over value materialistic items. This mindfulness state could enhance an individual's awareness and act as a gatekeeper between situational cues and one's mind.

Major: Honours - Psychology
Minor: Sociology
Faculty Mentor: Dr. David Watson

Sluts and Mini-Skirts: Do Cognitive Load and Processing Mode Influence Stereotypical Thinking About Sexual Consent?

By Vanessa Brickwood

Judgements can be based on effortful deliberation or generated quickly and automatically. Whether we are "thinking slow" or "thinking fast" can influence the outcome of our judgements and decisions. For instance, whether we are thinking more automatically or deliberately when judging others can influence how stereotypical our judgements are (Monteith, Woodcock, & Gulker; 2013). Building a culture of consent requires that people recognize and avoid stereotyped and erroneous beliefs about sex, gender, roles and responsibilities. This research project aims to examine whether stereotypical responding to stories about sexual consent failures occurs more when people's responses are the product of quick and automatic thinking.

Participants will be asked to read vignettes depicting sexual encounters; vignettes will include contextual information to support stereotypical thinking. Presentation of the vignette and single versus dual-task conditions will be varied between participants to encourage more or less reliance on thinking fast compared to thinking slow. We expect to see higher levels of stereotypical thinking for those operating under cognitive load and in conditions that encourage thinking fast. Understanding when stereotypical thinking is more likely in sexual consent scenarios can help reduce or correct potential errors in judgment.

Major: Honours - Psychology
Minor: Sociology
Faculty Mentor: Dr. Aimee Skye

In Memory of Gruesome Details Across Violent Scenes

By Bailey Bulmer

Emotional scene memory has been found to vary in relation to recall of central (core emotional) and peripheral (background) details, resulting in a form of attentional narrowing/tunnel memory. The source of emotional arousal may influence the extent to which attentional narrowing occurs. Images containing gory/gruesome content should, in theory, lead to a reversal of attentional narrowing given our tendency to avert our gaze away from gory details. However, memory biases for disgust also have been evidenced where recall is enhanced by such material. It remains unclear how gore influences memory retention processes. Participants (N = 568) were assigned to an image condition (non-violent/no-gore, violent/no-gore, violent/indirect gore, violent/direct gore) followed by delayed memory testing, including objective memory assessment detail coding, central/peripheral accuracy questions, and hot spot analysis. Preliminary data review suggests that gory details attracted more focused attention initially, followed by dispersed visual processing of the scene. We predict that exposure to gore will lead to tunnel memories (i.e., enhanced central accuracy), however differences between gore type and violence level may be revealed across different measures of memory assessment (i.e., hot spot/content analysis). This study has implications for how witnesses to violent scenes encode and retain gruesome details in memory.

Major: Psychology
Minor: Chemistry and Biology
Faculty Mentor: Dr. Kristine Peace

Exploring Which Anxiety-Related Disorder Symptoms and Mechanisms are Associated with COVID-19 Anxiety

By Layton Byam

In the wake of the COVID-19 pandemic, a rise in anxiety has been reported among the population. This rise coincides with the introduction of COVID-19 anxiety, which is the fear and emotional distress caused by the COVID-19 pandemic. Previous research has found an association between COVID-19 anxiety and symptoms of health anxiety, panic disorder, and obsessive-compulsive disorder. COVID-19 anxiety has also been associated with dysfunctional

beliefs such as anxiety sensitivity, maladaptive metacognitions, and intolerance of uncertainty. Additionally, COVID-19 anxiety has been associated with the emotion of disgust. However, the association of these factors with COVID-19 anxiety has not been explored together in a single study. In the current study, self-report questionnaires were used to examine which anxiety-related disorder symptoms, and related mechanisms, were associated with COVID-19 anxiety. A total of 593 MacEwan students completed the study between September 2020 and February 2021. A set of regression analyses examined which anxiety-related disorder symptoms were uniquely associated with COVID-19 anxiety. The two symptoms most associated with COVID-19 anxiety were health anxiety and obsessive-compulsive disorder symptoms. Additionally, panic disorder symptoms were also found to be associated. When examining the anxiety-related mechanisms, a second set of regression analyses identified disgust sensitivity and health anxiety-specific intolerance of uncertainty as having the strongest association with COVID-19 anxiety. Further, a maladaptive metacognitive belief related to thinking about one's health, as well as the physical and cognitive aspects of anxiety sensitivity, were associated with COVID-19 anxiety. Based on these findings, clinicians may wish to screen for COVID-19 anxiety in clients experiencing health anxiety, obsessive-compulsive, or panic disorder symptoms. Lastly, clinicians may find it helpful to target the clients' responses to feelings of disgust, and their health anxiety-specific intolerance of uncertainty, when working with clients experiencing high levels of COVID-19 anxiety.

Major: Honours - Psychology
Faculty Mentor: Dr. Alexander Penney

The Psychophysics of Gender Perception in Handwriting

By Haley Calder

Handwriting is a complex visual stimulus containing multiple dimensions. Such written letters are noisy and ambiguous, reflecting bits of one's character within each writer's unique form. In this sense, handwriting contains key features of the author's identity much in the same way that faces contain one's identity. Given our extensive experience with both stimuli, handwriting may be the only comparable stimulus to faces. This study therefore investigated whether traditional psychophysical techniques could be used to measure sensitivity to gender within handwriting samples and the role of word length. We created a completely novel set of stimuli to be able to control the gender identity strength, creating six strength levels: 0, 20, 40, 60, 80, and 100, depending on the % of male identity present. Word stimuli were presented under four word length conditions (2, 4, 8, and 16 letters). Subjects' performance was well described with an ogival (psychometric) fit, demonstrating that the perception of gender in handwritten words can be captured psychophysically. We also found subjects' performance varied depending on word length. Subjects possessed more uncertainty in rating the gender of a sample when fewer letters were present. As well, minimal differences in certainty rating 8 and 16 letter words provide support for the importance of global visual (efficient) processes in the perception of handwritten words.

Major: Honours – Psychology
Minor: Business Law

Faculty Mentor: Dr. Nicole Anderson

A Post-Release Examination of High-Risk Offenders and the Barriers to Reintegration

By Dacia Chiarieri-Hirsch and Mackenzie Thomas

Offenders who remain incarcerated for the entirety of their sentence are at greater risk of reoffending than those who receive community supervision (Serin et al., 2020). In Canada, those who have completed their sentence but are considered high-risk for violent and sexual reoffending can be placed on a Section 810 peace bond. The purpose of a Section 810 peace bond is to grant law enforcement supervisory power once the offender is released into the community. Little research is available on this subset of offenders despite the proposed safety threat. This poster presentation examines the prevalence of seven basic needs and six criminogenic factors over the first year of supervision post-release. More specifically, it highlights the prevalence of criminogenic and non-criminogenic variables, consistent with some of the challenges commonly encountered by those transitioning back into the community, such as struggling to find employment and accommodations. To examine criminogenic and non-criminogenic variables, we report the prevalence of each variable across three post-release intervals spanning the first year of supervision. As expected, some criminogenic needs and most basic non-criminogenic needs appeared to decrease across the time periods. However, we also found that interpersonal conflicts, substance abuse, and criminal attitudes seem to persist across the first year of supervision. Although these results do not offer a complete picture of what reintegration entails for offenders under judicial orders, we hope to build towards the empirical evidence necessary to support law enforcement tasked with the responsibility of supervising and managing these individuals.

Major: Psychology
Minor: Sociology
Faculty Mentor: Dr. Sandy Jung

How Narcissistic Admiration and Rivalry Influences Perceptions of Trustworthiness at Zero Acquaintance

By Caleb Chomay

Narcissists' assertive or antagonistic characteristics may impact how they perceive others' trustworthiness. Individuals high in narcissistic rivalry tend to maintain a hostile orientation after anticipating a threat to their self-image, which may make them less trusting. Individuals high in narcissistic admiration tend to seek social admiration through assertive self-promotion, which

may make them more trusting. Here, we sought to determine if trust perceptions differ between high-rivalry and high-admiration narcissists at zero acquaintance. We also examined the variables that may mediate the association between narcissism and trust. Across three studies, participants completed narcissism questionnaires, viewed facial photos of non-criminals (i.e., Nobel Prize winners) and criminals (i.e., those charged for white-collar crimes), and rated their perceived trustworthiness by making dichotomous choices (Study 1) or using a rating scale (Study 2-3). In Study 1, participants were 62% accurate at detecting trustworthiness from photos. Although accuracy did not differ for individuals high and low in narcissism, high-admiration narcissists were more likely to indicate others were trustworthy. In Study 2, high (vs. low) rivalry narcissists perceived non-criminals as less trustworthy. In Study 3, participants rated the perceived attractiveness and dominance of targets. Attractiveness, but not dominance, mediated the association between narcissistic rivalry and distrust. Together, we found that those who are high in narcissistic rivalry distrust trustworthy individuals, possibly due to the maintenance of their antagonistic and hostile interpersonal orientation.

Major: Honours - Psychology
Minor: Sociology
Faculty Mentor: Dr. Miranda Giacomin

I Woof You: How Pet Pictures Influence Online Dating Selection

By Maron Demecillo

Owning and living with pets has been shown to have many benefits, including improved psychological well-being, increased physical activity, and better social functioning. With respect to social functioning, pets have been hypothesized to act as a "social lubricant" by facilitating social interactions. In support of this hypothesis, dogs have been shown to have a significant impact on adult courtship behaviour. . Research in this area has mostly looked at heterosexual daters, with the majority of the studies not accounting for the role of sexual orientation.

The present research aims to use mock online-dating profiles (e.g., Tinder) to experimentally evaluate how a) the presence of a dog in a dating profile may impact partner selection and ratings of their personal attributes, b) how the characteristics of the dogs presented in dating profiles may impact partner selection, and c) whether a respondent's sexual orientation and dating platform will interact with the above factors when selecting a potential partner. It is hypothesized that having the dog present will lead to higher successful matches than when the dog is absent for both heterosexual and LGBTQIA2S+ participants. In addition, it is hypothesized that profiles accompanied by family dogs (e.g., Labrador) will lead to more success in dating matches than "aggressive" breeds (e.g., Rottweiler).

Findings from this study will help expand our current knowledge about the benefits of owning pets in facilitating social interactions. Moreover, we will also extend our understanding of dating selection behaviours outside of the heteronormative context.

Major: Honours - Psychology
Faculty Mentor: Dr. Eric Legge

Arts engagement during the COVID-19 pandemic

By Maron Demecillo and Morgan McCloy

The COVID-19 pandemic has proven to be a challenging time for students' mental health and well-being. Numerous countries have imposed nationwide lockdown measures to control the spread of the virus. Studies have shown that while these measures can be effective when strictly implemented, it comes with a cost, affecting people's social well-being. The restrictions have made it difficult for people to access and engage in their preferred activities/hobbies. One previous study examined the changes between preferred vs. substituted activities involving nature and its association with perceived stress during the pandemic (Pearson et al., 2021). However, little is known about the changes in engagement with arts-related activities.

One purpose of the current exploratory study is to examine the changes in the patterns of engagement with art activities due to the COVID-19 pandemic in students. Another purpose of the study is to determine whether engagement in preferred vs. substitution activities and the motivation to engage in these activities are associated with well-being. The proposed study will have participants indicate their engagement with different arts-related activities before and during the COVID-19 pandemic. Additionally, participants will be asked to rate their motivations for engaging with their preferred and substituted activities. We predict that intrinsic motivation to engage in activities (i.e., doing them because they are interesting or enjoyed) will predict higher well-being than external motivation (e.g., doing them for reward or pressure from others). Moreover, participants will complete measures of pandemic-related emotional well-being, COVID-related stress, general coping strategies, general well-being, personality, and demographics.

Major: Honours - Psychology
Faculty Mentor: Dr. Kathleen Corrigall

The Potential of Central, Non-Predictive Arrow Cues to Engage Reflexive Shifts in Spatial Attention

By Ismaeel El-Hakim

Traditionally, both peripheral and central arrow cueing tasks have been used to study the cognitive and neural mechanisms underlying reflexive and voluntary spatial attention, respectively. However, a handful of studies over the past two decades have demonstrated that central arrow cues may also cause reflexive shifts in attention. This is believed to be the product of arrows being akin to overlearned behaviourally relevant stimuli. The purpose of the current study was to further explore the degree to which central arrow cues can result in reflexive shifts of attention by directly comparing the cueing effects produced with non-predictive central arrow cues with that of non-predictive peripheral cues in a group of healthy adults (n=40). Data were collected online during live sessions using Testable software (testable.org). Our results indicated that, at early SOAs (i.e., 50 and 100 ms), there was a significantly larger cueing effect for non-predictive peripheral compared central arrow cues. In addition, inhibition of return (IOR) effects became apparent at later SOAs, but only for non-predictive peripheral cues. Finally, the

small cueing effects observed for non-predictive arrow cues were only reliable at later SOAs (i.e., ≥300ms). Together, these results suggest that central arrow cues do not drive the same reflexive shifts in attention as peripheral cues, and that the two types of cues likely engage different mechanisms. Future studies will examine whether the difficulty of the attention task (e.g., detection vs. discrimination) influences the magnitude of the cueing effects observed between the two types of non-predictive cues.

Major: Psychology
Minor: Human Resources
Faculty Mentor: Dr. Christopher Striemer

It's a Burden But... Having a Sibling with Prader Willi Syndrome: Stress, Growth and Perceived Burden

By Darcy French

Prader Willi Syndrome (PWS) is a rare genetic disorder affecting approximately 1 in 15000 live births worldwide that presents a spectrum of physiological and neurological-related health challenges. PWS has been extensively studied as it affects parents, however, research on sibling interaction is limited. This study examined to what extent neurotypical siblings with a brother or sister with PWS experience stress in daily life, is there a feeling of growth as a result, and are feelings of burden higher when compared to the general population. Using the Perceived Stress Scale 10, the Post Traumatic Growth Inventory, and the Zarit Burden Interview questionnaires, a comparison between families with a neurotypical -PWS sibling dynamic and non-PWS – sibling dynamic was conducted. The findings between the control and experimental groups indicated similar stress levels, and both groups indicated a moderately high level of stress. No statistically significant difference in personal growth was present. The perception of burden was significantly higher for the neurotypical-PWS group versus the control group. The details of the results indicated that the relationship dynamic between PWS-neurotypical siblings requires further research, and the use of different survey tools may be warranted to better explore this population.

Major: Honours - Psychology
Faculty Mentor: Dr. Sean Rogers

In the Shadows: Perceptions of In-Person, Phone, & Cyberstalking

By Mattise Gauthier

Previous research has found that our perceptions concerning stalking characteristics and behaviours are misaligned with actual data on criminal harassment. In order to evaluate the extent to which views of stalking are influenced by our beliefs, the present study assessed perceptions of harassment in relation to the type of stalking (in-person/phone/cyber), gender of the stalker (man/woman), the stalker-victim relationship (stranger/acquaintance/ex-partner), and the types of threat involved (victim harm/self harm). Participants (N = 813) read a vignette detailing a series of related stalking incidents, and then completed a judgment questionnaire to assess perceptions of the crime, victim and perpetrator, and necessity of criminal justice

intervention. Results indicated that cyberstalking was minimized, and that participants often failed to recognize behaviours associated with this form of harassment. Stalking perpetrated by men was seen as the most serious, and woman-perpetrated stalking was viewed as a sign of flattery and not violence. Finally, participants most readily identified stalking by strangers and associated this with the greatest levels of threat, dangerousness, and mental illness. Victim blaming also was evidenced in this study and was most prominent when stalkers and victims knew each other, especially as former intimate partners. These results reveal how public views on stalking are often in conflict with statistical data on crime commissions and how these could have legal ramifications on the perceptions of defendants and accusers in court.

Major: Honours - Psychology
Faculty Mentor: Dr. Kristine Peace

Put Your Money Where Your Mouth Is: Psychopathic Traits, Priming, and Costly Helping

By Shelby Grahn

Psychopathy is characterized by traits such as callousness, impulsivity, manipulation, and incapability of empathy. Research suggests that those high in psychopathic traits are incapable of altruism, yet recent studies have reported that psychopaths may engage in heroic helping, and that low levels of everyday helping behaviour can be mediated by prosocial priming. The present study seeks to investigate how psychopathic traits influence costly helping (i.e., helping another at a cost to oneself) as a function of a helping prime (no prime, prosocial, asocial, antisocial) and the remoteness of a charity (on-campus, local, national, international). Participants (N = 320) will complete measures of mood, psychopathic traits, and empathy, followed by random assignment into one of the helping prime conditions. Following this, participants will play a standardized game designed to measure costly helping (i.e., the Altruism/Antisocial Game; AlAn's Game; Sakai et al., 2012), that will involve decisions regarding monetary donations to one of four charities that vary according to their level of remoteness. Throughout the game, participants will distribute $20 between themselves and the charity via their decisions. After the game, participants will be asked to make a real-time choice regarding how they want their participation funds distributed between themselves and the charity (i.e., do you want to donate all or some of the money to the charity or keep it for yourself?). This study has implications for understanding psychopathic traits in the context of costly helping, including whether priming and mood change either of the giving decision outcomes.

Major: Honours - Psychology
Faculty Mentor: Dr. Kristine Peace

Acoustic cues to individual identity in the American Pika (Ochotona princeps).

By Janine Heber

Our research focused on potential voice characteristics, or individual identity cues, in the vocalizations of American pika (Ochotona princeps). Past research indicates that pika produce squeak calls, which may contain cues to individual identity, aiding in territory protection. We

recorded pika vocals from a population of individuals in the Highwood region of Kananaskis, AB. Data suggests these calls do contain acoustic features that should allow individuals to recognize each other by sound alone. This provides us with a better understanding of territorial behaviour in pika. Because pika live in high alpine scree locations they are key indicators of the effects of climate change. Therefore, any exploration into their behaviour may aid in understanding the potential effects of climate change on this species and perhaps alpine species more generally.

Major: Honours – Psychology
Minor: Gender Studies
Faculty Mentor: Dr. Shannon Digweed

How Living with Pets and Others Relates to Wellbeing During the COVID-19 Pandemic

By Celina Hulm

The pandemic has been a time marked by significant hardship for many. It has led to significant negative impacts on mental health (MH), and significant limitations for people to connect and find support through socialization. As a result, many have turned to animals as a substitute for human connection, evidenced by large increases in animal adoptions and purchases during the pandemic. Research suggests that in many contexts, animal ownership and companionship may help improve MH. However, during the pandemic, living with an animal could be a burden (e.g., due to financial pressures) and have a negative impact on MH. To this end, our study investigated how living with animals during the pandemic was related to MH. Participants (N=600) were recruited from MacEwan University and asked about several topics related to MH, their living situation (i.e., did they live with pets, other people, alone, or some combination), and other demographic factors. Analyses revealed that living with a pet during the pandemic was related to increased levels of anxiety and depression, as well as decreased happiness. However, for pet owners, stronger attachment to their pet was associated with less anxiety. Additionally, our data provided confirmatory support for several established findings such as there being a positive correlation between COVID-19 stress and general feelings of anxiety and depression, and a negative correlation between COVID-19 stress and feelings of happiness. Our results expand knowledge on the impact of human-animal interaction and MH, particularly when related to a global health emergency.

Major: Honours – Psychology
Minor: Philosophy
Faculty Mentor: Dr. Eric Legge

The Acute Effects of Cannabis Terpenes on Zebrafish Anxiety-Like Behaviour.

By Andréa Johnson

Major: Honours – Psychology
Minor: Gender Studies
Faculty Mentor: Dr. Trevor Hamilton

I only cry in movies when an animal dies: Exploring the relationship between human and animal centered empathy in pet owners as a function of trait narcissism.

By Emma Johnston

Having empathy for others is typically generalized to having empathy for animals. However, emerging research suggests that empathy for humans and for animals are only weakly correlated (Paul, 2000). This suggests that there may be cases where individuals lack human-centered empathy (HCE), but have a high degree of animal-centered empathy (ACE). Having a lack of empathy for humans is also characteristic of trait narcissism. Narcissistic individuals are self-serving, use others for their personal gain, and show no concern for the needs of others. There is currently a lack of literature exploring the relationship between HCE and ACE in individuals with trait narcissism. Here, we explore whether narcissistic pet owners display empathy towards animals despite their lack of HCE. To do so, pet owners (N=197) were asked to complete questionnaires assessing trait narcissism, HCE, ACE, pet attachment, and their pet ownership experiences. We hypothesize that core traits of narcissism will be positively associated with ACE and negatively correlated with ACE in pet owners. In addition, we expect our analysis to reveal: (a) a negative correlation between grandiose/vulnerable narcissism and pet attachment, (b) a positive correlation between ACE and both pet-attachment and attitudes towards animals, and (c) a weaker, but still positive, correlation between HCE and both pet-attachment and attitudes towards animals. A regression analysis will also be conducted to determine if pet attachment and attitudes towards animals will be significant predictors of (a) ACE and (b) HCE. This research will further our understanding of the relationship between empathy towards humans and animals. Results of the study will provide insight into whether animal-assisted approaches may be useful for empathy training in those with Narcissistic Personality Disorder.

Major: Psychology
Minor: Sociology
Faculty Mentor: Dr. Miranda Giacomin and Dr. Eric Legge

How respondent intoxication influences university staff's perceptions of risk and sanction recommendations in an on-campus sexual assault scenario

By Madison Karpiak

The present research will focus on how perpetrator intoxication influences perceptions of risk to reoffend as well as sanction recommendations in an on-campus sexual assault scenario. It is hypothesized that perpetrators who are intoxicated will be deemed lower risk and will be assigned less severe sanctions. Additionally, it is hypothesized that those that are under the influence of MDMA will be seen as higher risk than those under the influence of alcohol. University staff members will be presented with a vignette depicting an on-campus sexual assault, where perpetrator intoxicamation (sober, alcohol intoxication, and MDMA intoxication) will be varied. Respondent will then be asked to rate the likelihood that the perpetrator will go on to commit another sexual offence that is less, equally, or more severe than the one depicted in

the scenario. Respondents will also be asked to select from a list of several sanctions all that they believe are appropriate given the scenario. Past research has shown that offender intoxication can have a strong influence on how people assign blame and culpability in a sexual assault scenario. However, whether this translates to perceptions of risk has not been explored. As disciplinary actions are often, if not always, left to the discretion of university staff members, it is important to understand how this factor could be influencing these decisions. This is especially important when we consider that substance abuse has been found in previous research to be associated with increased risk of sexual recidivism, albeit with offender samples.

Major: Honours – Psychology
Minor: Sociology
Faculty Mentor: Dr. Sandy Jung

A Study of Mindset: Better Understanding the Structure of Mindset and How Growth Mindset Interventions are Delivered

By Nathan Kyler

Mindsets (MS) (i.e., beliefs about the malleability of traits) exist in many diverse domains, such as intelligence, creativity, emotions, and anxiety. With such a diversity of mindset domains, it is reasonable to question whether a general underlying factor influences all mindsets similarly. For example, if one believes intelligence is malleable, does one also believe creativity, musical ability, and athletic ability are malleable? In study 1, we used factor analysis of nine self-report mindset measures to determine if a general mindset factor exists. The nine mindsets studied clustered into three underlying factors: 1) Skills (intelligence, creativity, musical and athletic ability); 2) Personality (personality and morality); and 3) Emotions (emotions and anxiety). Stress did not load onto any of the three factors. In addition, we investigated ways to improve the efficacy of growth mindset interventions. Though growth mindset interventions show positive outcomes, the effect sizes are generally small. Actively engaging in material by applying the information to one's life, or teaching others, improves retention of that material over passively listening to the material being taught. In study 2, we sought to determine whether an active vs. passive growth mindset intervention is more effective for improving exam scores. We found no significant difference in exam score improvement between the control, active, or passive groups. It is possible that the active intervention was not engaging enough to alter one's mindset beliefs in only one exposure. Targeting general mindset factors rather than individual mindset domains may improve intervention efficacy.

Major: Honours - Psychology
Minor: Philosophy
Faculty Mentor: Dr. Michele Moscicki

Sensitivity in Face Perception with Masked Stimuli

By Chris Leathem

The use of face masks during the pandemic has been common in nearly all public interactions. Along with being a protective barrier against the virus, masks also act as a visual barrier that

blocks the reception of critical social information. A recent study conducted by Freud et al. (2020) examined the effect of masks on facial recognition. They found that recognizability of masked faces was markedly lower regardless of whether the face was masked during memorization or recollection. Masks were found to inhibit recognizability akin to an inverted face. Face inversion is known to disrupt holistic processing, inhibiting face recognition. The decrease in recognizability of masked faces indicates that masks could disrupt holistic processing. This study examined if masked faces are more recognizable when they are moving (dynamic). Participants were presented with 10 masked or unmasked faces for memorization. The faces were either static or dynamic, which was counterbalanced across participants. The recognition test included 10 old and 10 new faces and participants made forced-choice "old/new" judgements. We hypothesized that dynamic faces would significantly improve the recognition of masked faces, more so than unmasked faces. This would suggest that moving faces could improve holistic processing by affording more visual information to the perceiver about the occluded face (dynamic masked faces could convey concealed facial dimensions). Preliminary data confirms that recognition of dynamic masked faces was faster and more accurate than static masked faces, allowing for the guarded conclusion that motion is an element used to encode and recognize faces.

Major: Honours - Psychology
Faculty Mentor: Dr. Michelle Jarick

Motivations and perception of others in political disagreement

By Shannon Majeau

An important part of being a participating citizen in a democracy is to share alternative perspectives. However, political conversation can be highly polarizing, and any ensuing conflict can damage relationships. Therefore, it is valuable to understand why these conflicts sometimes occur in order to design suggestions to reduce the intensity of such conflict. This project examines the motivations people bring to political discussions when talking to people we disagree with. We are interested in how we perceive other people's motivations, and how those motives may differ from our own. We will also explore the way that stronger or weaker relationships with the other person can impact these perceptions. MacEwan University students will be asked participants to think about political conversations they have had with people they disagreed with, and to indicate their perceptions of the other person. We expect that people will perceive themselves to be motivated to learn and persuade others, and will perceive people they have a strong relationship with to have the same motivations. However, we expect that people with weaker relationships will perceive the other person to be less motivated to learn, but still motivated to persuade. With strong relationships, there is trust and familiarity, which allows for openness towards new information. However, there is a lack of trust with weaker relationships, which can create some defensiveness in discussion. Therefore, we perceive the other person to be less willing to learn about our opinion and are primarily concerned with persuading us.

Major: Honours – Psychology
Minor: Biology

The Positive and Negative Perspectives of Narcissism

By Dezerae Martens

Here, we explored public stigmas related to grandiose narcissism (i.e., a personality trait characterized by an excessive need for admiration, exaggerated self-importance, and a sense of entitlement; Grapsas et al. 2020). Although narcissism is perceived as a socially undesirable trait by those low in narcissism, individuals high in narcissism consider narcissism to be a positive "get ahead" trait (Carlson, 2013). However, narcissistic individuals may exacerbate (diminish) their narcissistic tendencies when told that narcissism is socially desirable (vs. undesirable). To examine this, 300 participants completed the Narcissistic Admiration and Rivalry Questionnaire, read either a positive (e.g., narcissistic individuals are charismatic) or negative (e.g., narcissistic individuals are manipulative) definition of narcissism, and reported their thoughts regarding the definition. We hypothesize that narcissistic individuals will deny being more narcissistic upon reading the negative (vs. positive) definition because it presents narcissism as socially undesirable. Less narcissistic individuals will view narcissism negatively regardless of whether they read the positive or negative definition of narcissism because of their previous knowledge of narcissism's darker connotations. Future research will examine whether narcissism is stigmatized and how being high in narcissism may buffer the impact of stigmatization.

The effects of video game experience and time pressure on hiding and searching behaviour.

By Levi Meldrum

Many video games include the need to hide objects or a character to prevent being found by an enemy, and to search for objects or characters that have been hidden to receive rewards or advance in the game. As such, understanding how people hide and search for objects, and how environmental and situational conditions may impact such behaviour, is of broad interest and importance. Research suggests that experience with video games broadly affects how we navigate our surroundings. It is, therefore, reasonable to suspect that experience playing video games may affect people's hiding and searching behaviour and strategy, although no studies have been conducted on this topic to date. Furthermore, research has consistently shown that people's decision-making processes can be adversely affected by time pressure and the associated stress it creates. Time pressure is also a frequent characteristic of many video games, and some research suggests that video gamers are less impacted by overwhelming time pressure than non-gamers. Therefore, our study is the first to assess how video game experience and time pressure interact and impact hiding and searching behaviour in a spatial task. This research will be important for broadly understanding people's hiding and searching

behaviour, and may lead to improvements in hiding/searching training programs (e.g., police training programs for illicit substance search and seizure).

Major: Honours – Psychology
Minor: Sociology
Faculty Mentor: Dr. Eric Legge

Book to the Basics: Systematically Teaching Children to Read

By Jacey Mitchell

As rates of reading difficulties in middle-school children increase, so does the need for effective interventions. Direct Instruction is an evidence-based approach that uses Applied Behavioral Analysis principles to teach a variety of different topics. For our study, we used the Direct Instruction-based curriculum called 'Teach Your Child to Read Well', derived from the Maloney Method, in order to assess its effectiveness at improving the reading abilities of children who have fallen behind their respective grade level for literacy. This curriculum incorporates the basic rules, themes, and strategies of a particular area; systematically presents concepts and new material; clearly communicates goals and expectations; gradually introduces new skills; promotes mastery; and caters to the child's specific needs and abilities. Participants included three grade-level students, all of whom were underperforming in comparison to their same-grade peers. We used a non-concurrent multiple baseline design where the children acted as their own control. The intervention occurred once a week, for twenty weeks, each for an hour at a time. The number of correct words read per minute was probed during each session. Results are anticipated to show a substantial increase in the number of proper words read per minute for each participant. These data would provide evidence to support the effectiveness of such an intervention and the potential need for more effective strategies to be embedded within our education system.

Major: Honours – Psychology
Faculty Mentor: Miranda Macauley and Dr. Russ Powell

Worth the Risk: Narcissism and Risky Health Behaviour

By Melissa Nielsen

Grandiose narcissists (i.e., those who are self-focused, egotistical, and vain) are more likely to eat healthily and exercise due to their concerns with physical appearance (Hill, 2016). They also make riskier health decisions (e.g., binge drinking; Buelow & Brunell, 2014). We examine whether those high in narcissism would be more willing to risk their long-term health for short-term appearance enhancements. To do so, we measured participants (N = 289) narcissistic admiration (i.e., extraversion, charisma) and narcissistic rivalry (i.e., aggression, hostility). All participants viewed three advertisements for appearance-enhancing products (e.g., workout supplements) with the presence or absence of potential side effects. Ads depicted ideal male or female bodies and were matched to the self-reported sex of the participant. Participants indicated how willing they were to use these products to be admired by others, improve their health, be more competitive, and general self-improvement. Among those who viewed the male

ads, those high (vs. low) in narcissistic admiration were more likely to endorse products to be more admired by others and improve their health when side effects were absent, but not when side effects were present. Participants who saw female ads did not show a significant difference in terms of health decisions regardless of the presence of side effects or levels of trait narcissism. Narcissistic rivalry did not impact decisions. Narcissism did not impact participants' ability to assess potential risks, suggesting that side-effect visibility would aid in the health decisions of those attracted to these products.

Major: Honours – Psychology
Minor: Sociology
Faculty Mentor: Dr. Miranda Giacomin

Speech and language effects on the perception of mixed emotion in children

By Tulsa Oddy

Mixed emotions often comprise opposing basic emotions such as happiness and sadness. Previous research on mixed emotion in children studied basic common emotions such as happy vs. sad. The current project extends this work by examining happy vs. disgust mixed emotions conveyed in the content and vocal expression of spoken sentences. Empathy is thought to play a vital role in children's perception and experience of mixed emotions, as older children with a higher degree of empathy will recognize mixed emotions more successfully than their younger counterparts. Age-related change in the perception of mixed emotions of children ages 3-12 years will be examined. In addition, individual differences in empathy will be analyzed to determine if empathy moderates children's perception and experience of mixed emotions. Children will listen to various sentences of conflicting emotions created by opposing sentence content and vocal expression and rate the spoken sentences along a continuum of engaging emoticons that show various intensities of the target emotions. A theory-of-mind task will be administered to assess empathy, and its relationship with emotion ratings will be examined. It is hypothesized that older children will have more success in recognizing mixed emotions than younger children by demonstrating more moderate ratings on the continuous scales. The findings will help shed light on the social and emotional skills that enable children to be successful in communication and relationships with others.

Major: Honours – Psychology
Minor: Biology
Faculty Mentor: Dr. Tara Vongpaisal

If you change your mind: The relationship between implicit theories and materialism

By Hadla Omar

The present two experimental research studies examine the influence of materialism and implicit theories have on one another. Individuals who hold materialistic values avoid emotional and physiological negative experiences. Some avoidance strategies, such as cognitive deconstruction, living in the present, or constant need to acquire materialistic items, are utilized

to protect self-identity against any negativity. Implicit theories refer to one's belief regarding the malleability of human attributes, abilities, and values, specifically whether they are malleable (incremental) or fixed (entity). Individuals with an entity mindset tend to engage in helpless response patterns and embrace performance-related goals. The first study involves randomly assigning participants to one of three conditions (entity, incremental or control), in which we induce each theory through an article. Participants endorsement of materialism was measured using the Belk, Materialism Value Scale, and Revised Materialism Scale (RMS). We predicted that entity mindset will hold more materialistic values than the incremental and control group. The second study involves randomly assigning participants to either a control or materialistic condition, in which they were exposed to videos and 5-word sentence scrambles. Participants were implicit theories were measured using the 'Kind of Person' Implicit Theory Scale. We predicted that those with higher materialistic values will likely hold an entity mindset rather than an incremental mindset. Results will be further discussed, along with will future directions and limitations.

Major: Honours – Psychology
Minor: Biology
Faculty Mentor: Dr. David Watson

What Maintains Generalized Anxiety Disorder? Examining Intolerance of Uncertainty and Negative Beliefs about Worry

By Sydney Parkinson

Individuals with generalized anxiety disorder (GAD) experience excessive and chronic worry over a variety of daily events. If left untreated, GAD tends to be chronic and cause difficulties in daily functioning. Therefore, understanding the factors that cause and maintain GAD is important to allow for the effective treatment of the disorder. The Metacognitive Model, Intolerance of Uncertainty Model, and Emotional Dysregulation Model each implicate specific mechanisms as the casual and maintaining factor in GAD. Existing research has shown negative beliefs about worry (NBW), intolerance of uncertainty (IU), and fear of emotions to be associated with GAD. However, the existing research is primarily cross-sectional, which does not allow researchers to determine whether these beliefs cause and maintain GAD. The present longitudinal study examined whether NBW, IU, fear of emotions, negative problem orientation, and cognitive avoidance predict worry severity and GAD symptoms at follow-up. Undergraduate psychology students, pre-screened for high levels of worry, completed a series of online self-report measures assessing levels of worry, GAD symptoms, NBW, IU fear of emotions, negative problem orientation, and cognitive avoidance. Participants (N = 372) returned 4-months later to complete the same series of questionnaires. Multiple regression analyses revealed that NBW was the only mechanism to consistently emerge as a predictor of pathological worry and GAD symptoms cross-sectionally and longitudinally. Exploratory analyses revealed that changes in NBW and IU were the only mechanisms to predict changes in GAD at follow-up. These findings have implications for the understanding and treatment of GAD.

Major: Honours – Psychology
Faculty Mentor: Dr. Alexander Penney

The Effects of Oxytocin on Social Anxiety-Like Behaviour in Zebrafish

By Jasmine Parr

Social anxiety is a predominant disorder in Northern America affecting approximately 7% of the population. Various medications are consistently being tested to minimize the effects of social anxiety as there is no one drug that works on everyone. Zebrafish have been used as a model organism for neurological research over the last few decades and are ideal to test how drugs affect anxiety. The effects of oxytocin on decreasing social anxiety-like behaviours were examined in zebrafish. Past studies have shown that a moderate amount of oxytocin lowers average levels of social anxiety (Strungaru et al., 2017). This study aims to examine the therapeutic potential of oxytocin as an anxiolytic drug. Three groups of four zebrafish were exposed to varying doses of oxytocin (control: 0.0ng/ul; low: 52.8ng/ul; and high: 88.0ng/ul) for 90 seconds via immersion and then monitored for 5 minutes. Inter-individual distance between shoal mates was measured as a degree of social anxiety. The results showed no significant differences in mean distance between experimental dosage groups. Although the results came back insignificant, further research is needed to determine whether oxytocin holds an anxiolytic effect with different dependent variables such as exposure time and drug administration method.

Major: Honours – Psychology
Faculty Mentor: Dr. Melike Schalomon

Grandiosity Under Pressure: Exploring Stress Induced Fluctuations of Grandiose Narcissism

By Ronak Rai

When people experience failure, their self-views fluctuate dramatically. We explored how stressful situations may impact state narcissism. Individuals may perceive stressful situations as a threat against their competencies (e.g., failure reactivity), and thus display higher state narcissism to bolster their self-views. In Study 1, we manipulated the amount of time participants had to complete a task (i.e., 15 seconds [high time pressure] vs. 60 seconds [low time pressure]) and the type of feedback participants received on their task performance (i.e., neutral vs. harsh feedback). We found that those under high (vs. low) time pressure showed more narcissism. However, those who received harsh (vs. neutral) feedback showed less narcissism. In Study 2, we manipulated task difficulty (i.e., high vs. low) and time pressure (i.e., 15 seconds vs. 60 seconds). We found that those who had high (vs. low) time pressure and those who completed the more (vs. less) difficult task showed more frustration. However, state narcissism did not change across conditions. Taken together, narcissism may fluctuate in response to increased task pressure, but it may depend on the type of stressor. An increase in narcissism may serve to mitigate the negative impact of pressure and frustration on people's positive self-views. However, negative feedback may instead decrease individuals' confidence and grandiose self-views.

Major: Honours – Psychology

Minor: Sociology
Faculty Mentor: Dr. Miranda Giacomin

Perception of Dog Breeds, Dog Traits, and Implicit Associations

By Megan Riley

Implicit biases are defined as one's negative or positive thoughts, feelings, actions, and attributes that one holds towards another individual or group that are formed by attitudes held subconsciously in one's mind. Stereotyping, racism, prejudice and discrimination are all negative outcomes that can result from these biases. Unfortunately, Pitbull-type dogs (PTD) have been the center of Breed-Specific Legislative Bans (BSL) resulting in stigmatization towards both the dog breed and dog-owner. These BSLs are a prominent example of how explicit biases, that is, attitudes that are conscious and deliberate exist within our society; however, it is unknown how much of these biases are implicit. Due to this discrepancy, this study will test both implicit and explicit biases towards PTD when compared with a stereotypical family dog breed, such as Golden Retrievers (GR). To measure these biases, this study will use the Implicit Association Test (IAT) which has been deemed the gold-standard test for implicit attitudes. In addition to the IAT, this study will implement a self-reported Likert-scale to capture participant's explicit biases which will be used to compare scores between each measure. As such, it is hypothesized that people will have negative biases toward PTD and will associate them with negative dog traits, whereas people will have positive biases towards GR and will associate them with positive dog traits. We propose that self-reported measures will reflect opposing results towards PTD but not for GR. Identification of implicit biases can have important implications for promoting adoptions for dogs subject to BSLs such as PTDs.

Major: Psychology
Minor: Sociology
Faculty Mentor: Dr. Eric Legge

Anxiolytic effects of acute Delta-9-Tetrahydrocannabinol (THC) administration in Zebrafish (Danio rerio)

By Brayden Ritter

The current need for novel treatments of anxiety is at the forefront of mental health, with nearly 15% of Canadians indicating symptoms of Generalized Anxiety Disorder (GAD) in 2021, up from 13% in the previous year (Statistics Canada, 2021). The Zebrafish (Danio rerio) model organism allows for effective and efficient testing of new treatments, given their evolutionarily conserved anxiety pathway, the hypothalamus-pituitary-interrenal (HPI) axis, that acts nearly identically to the hypothalamus-pituitary-adrenal (HPA) axis in humans (Khan et al. 2017). Furthermore, zebrafish share a similar Endocannabinoid system to that of humans (Oltrabella et al. 2017), allowing for the exploration of the effects of cannabis, and its constituents. The present study aims to explore the anxiolytic effects of delta-9-tetrahydrocannabinol (THC), one of two of the most prevalent phytocannabinoids found in cannabis (the other being Cannabidiol)(Atakan, 2012). Fish will be exposed to THC at doses of 0.3 and 0.6mg/L which have well-established anxiolytic effects (Dahlén et al. 2021; Ruhl et al. 2014), as well as 1.0mg/L. Administration of the

drug should result in decreased thigmotaxis within the open field test, indicating reduced anxiety. Zebrafish behaviour will be analyzed using a well-validated test of anxiety; the open field test. This test will allow for the measure of the proportion of time spent swimming near the edge of the tank (thigmotaxis) (Stewart et al. 2012), with a lower proportion of time spent in the thigmotaxic zone indicating reduced anxiety.

Major: Honours - Psychology
Minor: Biological Sciences
Faculty Mentor: Dr. Melike Schalomon

Assessment and Recovery of Reaching Functions in Patients with Cerebellar Stroke

By Chella Mae Robles

The cerebellum plays an important role in the coordination and timing of limb movements. The present study focused on how reach kinematics are affected by cerebellar lesions to quantify both the presence of motor impairment and recovery of motor function over time. To examine this, 13 patients with isolated cerebellar stroke completed a visually guided reaching (VGR) task using the KINARM exoskeleton, as well as clinical measures of cognitive and motor function. Participants completed all measures at baseline, as well as 6, 12, and 24-weeks post-stroke. Our findings indicated that the only clinical measures to demonstrate impairment in our patient group were the Purdue Pegboard Task (PPT) and the MOCA. In addition, impairment was detected across several movement parameters of the VGR task that indexed both feed-forward and feedback control. Voxel-based lesion symptom mapping analyses conducted in right cerebellar patients (n = 10) showed that damage to the right cerebellar tonsil and uvula were associated with impaired performance on the PPT and overall performance in the VGR task, respectively. In most cases, the impairments on the VGR task and the PPT had largely recovered by 24 weeks post-stroke. Notably, PPT performance with the right arm predicted 33% of the variance in overall KINARM performance. These data indicate that objective kinematic measures of motor function provide a more complete picture of overall impairment than clinical measures alone. These additional kinematic data could be helpful in monitoring the assessment and recovery of motor function in patients with cerebellar stroke. Keywords: cerebellar stroke, limb ataxia, motor function, reaching, lesion mapping.

Major: Psychology
Minor: Sociology
Faculty Mentor: Dr. Christopher Striemer

Criminogenic and Non-Criminogenic Needs of High-Risk Offenders and Reintegration Success

By Chella Mae Robles and Mackenzie Thomas

There is limited research about individuals incarcerated until the end of their sentence without being supervised in the community through parole. When they are assessed to be a high risk for committing sexual or violent offences, they can be placed on Section 810 peace bonds to

restrict their movements and behaviours (Harris, 2001). The present study examines high-risk individuals' basic needs, criminogenic needs (i.e., dynamic risk factors), and responsivity issues and how these predict their reintegration success. Specifically, it assesses whether these factors contribute to missing an appointment, violating conditions, and reoffending. The files of 45 individuals were coded for the first year of post-release supervision to explore challenges and performance while under supervision for each 4-month time period. The area under the curve statistic was calculated to evaluate the predictive accuracy of each total for basic needs items, criminogenic needs, responsivity issues, and three community outcomes. The findings indicated that criminogenic needs consistently predicted violations of conditions and reoffending across time periods. However, basic needs and responsivity were not predictive of missed appointments and reoffending for all time periods. These findings suggest that supervision and monitoring of these factors play an essential role in stabilizing and effectively reintegrating these individuals into the community. However, a greater emphasis should be placed on criminogenic needs to reduce criminal behaviour. Future research is needed to examine the predictive validity of individual criminogenic risk factors and the association of basic needs, criminogenic needs, and responsivity issues regarding long-term reintegration success.

Major: Psychology
Minor: Sociology
Faculty Mentor: Dr. Sandy Jung

Men are Bad, Women are Mad: The Influence of Race, Gender, & Crime Variables on Perceptions of Criminal Responsibility

By Jill Rogers and Madison Twa

Past research has shown that the way people perceive a crime depends on a variety of extralegal factors, especially when determinations of Not Criminally Responsible on Account of Mental Disorder (NCRMD) are at stake. In particular, the Canadian criminal justice system has a demonstrated bias against people of colour in relation to guilty verdicts and punitiveness. Further, mental illness is often interpreted differentially in light of the gender of the perpetrator and their criminal history. As such, this study was designed to assess how participants interpret a case of homicide where the following variables have been manipulated: (1) perpetrator race (Indigenous, Black, Caucasian), (2) perpetrator gender (man or woman), (3) perpetrator-victim relationship (stranger v. known), and (4) criminal history (none, NCR, CR, NCR+CR). Participants will be presented with crime and trial summaries, and information pertaining to the defendant's mental health (i.e., diagnosis of schizophrenia with ambiguous influence on the commission of the crime). They will also complete several measures of bias and a judgment questionnaire. Data analysis is currently underway. We anticipate that defendants of colour and men will be more likely to be deemed criminally responsible and sentenced more harshly, however previous NCR or CR determinations will sway prospective jurors' views in the same direction as the information provided. Further, we predict that NCR designations will be more common when the victim is a stranger. This study has important implications for judicial bias and how extralegal factors continue to exert large influences on our judgments.

Major: Psychology

Minor: Sociology
Faculty Mentor: Dr. Kristine Peace

Does Feeling Heard Improve the Experience Worldview Conflict?

By Kamille Sandberg

We commonly encounter conflicting attitudes and opinions. Past research finds that engaging in such worldview conflict elicits temporarily lowered mood and psychological well-being (Brandt et al., 2019). Understanding how to mitigate these consequences of worldview conflict may help improve well-being. In close relationships feeling heard in a conflict can increase well-being (Gordon et al., 2013; Reis et al., 2017). We aim to extend these findings to the study of worldview conflict. Participants will complete series of open-ended and closed-ended questions to recall and describe a recent political discussion. We will focus on their recollection of the following: how the discussion went, whether they felt any of a range of specified emotions during and after the discussion, how they perceived the other, and whether they felt heard by the other. We expect to find a negative correlation between feeling heard and negative emotions, such as other-condemning emotions and agitation. On the other hand, we expect to find a positive correlation between feeling heard and contentment. We do not expect to find an association between feeling heard and feelings of dejection or excitement. The results of this study could help guide future research on how to alleviate the most difficult reactions to worldview conflict.

Major: Honours - Psychology
Minor: Sociology
Faculty Mentor: Dr. Craig Blatz

A Zoo-per Day Keeps The Scaries Away!: The Impact of Seeing Animals on At-Risk School-Aged Children

By Japkaran Saroya

Animal Assisted Therapy (AAT) is a common therapeutic practice that involves the use of animals. AAT has benefits to youth's mental health, including reducing depressive symptoms, anxiety, mood, and improving self-regulation. Many youth in lower socioeconomic statuses may not have access to this therapeutic resource. The present study investigates the effect of seeing animals on at-risk youth's thoughts and moods. Ten at-risk and ten low-risk youth will be assigned to participate in an Animal Activity or Science Activity with their caregiver. At-risk and low-risk status will be determined by an online questionnaire. Before entering and after leaving their assigned activities, the children will fill out the BASC-3 Behavioural and Emotional Screening System to assess their current behavioural and emotional state. After leaving each establishment, the researcher will engage in a qualitative interview with children and their caregivers.. We predict that the animal activity will lower behavioural problems and increase emotional measures in comparison to the science activity, and the impact will be greatest for the at-risk group. Findings from this study could be used to justify and develop community animal-based interventions in lower socioeconomic areas.

Major: Honours - Psychology
Faculty Mentor: Dr. Tara Vongpaisal and Dr. Eric Legge

The Effects of Infrasound Frequencies on Wild-Type Zebrafish Anxiety Behaviour

By Kale Scatterty

Various fish species have shown sensitivity to infrasound frequencies – those below the lower human hearing threshold of 20Hz – often eliciting behaviours indicative of anxiety. As wild-type Zebrafish, Danio rerio, have been emerging as a promising model of anxiety behaviour in research, such a response could add to their usefulness in future studies on anxiety, should they also exhibit it. Of particular interest to this study are the potential noise pollution effects that modern human industry may have on aquatic life, as such frequencies are commonly generated by many marine technologies (e.g., marine wind turbines or diesel engines). The aim of this study was to evaluate Danio rerio as an appropriate model system to test the anxiogenic effects of infrasound frequencies on aquatic life. Through utilization of motion tracking technology and behavioural open field tests, it was found that an infrasound frequency tone of 15Hz was able to produce anxiety behaviour in naïve zebrafish that was not present under any other conditions tested. 15Hz infrasound frequencies had anxiogenic effects on arena location preference, with zebrafish showing no significant preference during habituation trials but moving away from the infrasound speaker during administration of 15Hz tones. These results confirm that zebrafish may be used as an appropriate animal model to study the anxiogenic effects of infrasound frequencies on aquatic life.

Major: Honours - Psychology
Faculty Mentor: Dr. Trevor Hamilton

Establishing an Effective Dose-Response Curve of β-Carboline FG-7142 on Wild-Type Zebrafish Anxiety Behaviour

By Kale Scatterty

β-Carboline FG-7142, a partial inverse agonist of the benzodiazepine allosteric site at the GABA-A receptor, has been shown to yield anxiogenic, proconvulsant, and appetite-reducing effects among a variety of aquatic and mammalian species, including humans. Of particular interest to this study are the anxiogenic effects that FG-7142 have upon Wild-Type Zebrafish, Danio rerio, and what effective dosages would be appropriate for its use in behavioural research using a zebrafish model of anxiety and conditioned fear. Should an effective dose and reliable fear response be found in Danio rerio, an effective dose-response curve may be established and utilized in future anxiety research using FG-7142 as an environmental stressor that is both easier to administer and less invasive and harmful to the animal. The aim of this study is to establish an effective dose-response curve for anxiogenic effects of β-carboline FG-7142 on zebrafish anxiety behaviour. Motion tracking software will be used to measure zebrafish indicators of anxiety, such as changes in locomotion or location preference, under open field test conditions. Dosages from 0.00-1.00μM FG-7142 will be administered to testing arena water after habituation and any significant changes in anxiety behaviours found only after treatment will be considered indicative of an effective dose. It is expected that Danio rerio will exhibit

significant and reliable changes in anxiety and that an effective dose-response curve can be established within the proposed dose range for use in subsequent behavioural research using a zebrafish model of anxiety.

Major: Honours - Psychology
Faculty Mentor: Dr. Trevor Hamilton

The Kids are Alright: Student Productivity and Covid-19

By Rosalia Scavuzzo

The purpose of this study is to explore the degree to which student productivity has been impacted due to the presence of Covid-19, and what coping strategies, if any, students implemented to maintain or increase productivity during the pandemic. The sample consisted of 730 introductory psychology students between 18-53 years (mean = 21.9 , SD = 5.83) and primarily women (n = 457). In addition to questionnaires on self and time management four scales were used to measure various ways in which the pandemic may have impacted students including the Perceived Stress Scale (PSS), Irrational Procrastination Scale (IPS), Epworth Sleepiness Scale (ESS), and Time Structure Questionnaire(TSQ). Correlational analysis was used to determine what factors may have impacted GPA. Weak correlations were found between GPA and; TSQ (r = .20); IPS (r = -.18). No meaningful correlation was found between GPA and ESS or PSS or any of the other questionnaires. Preliminary analysis of qualitative responses by students indicate to students being aware of and implementing a variety of well established coping strategies.

Keywords: productivity, covid-19, student, coping

Major: Honours – Psychology
Minor: French
Faculty Mentor: Dr. Rodney Schmaltz

Lateralization of facial emotion recognition in the human cerebellum

By Sophia Slade

The cerebellum, one of the oldest structures in the nervous system, is well-known for the important role it plays in the coordination and timing of movement. However, there has been a paradigm shift with recent clinical, neuroimaging, and experimental research suggesting that the cerebellum also plays a role in higher-order cognitive functions such as attention and emotion. The substantial increase in research regarding the cerebellum's ability for emotional processing has indicated that it may be particularly adept at recognizing and processing negative facial expressions (i.e., fear, anger, sadness). Facial expressions are an important component of non-verbal communication that have specific meanings and are universally recognized. The ability to recognize another person's facial expressions and understand their emotional state and intentions is critical for responding in social situations. It is particularly important for an organism's survival to recognize negative emotions such as fear, anger, and sadness, as it activates defence systems designed to protect against threats. Previous research using functional brain imaging and patients with cerebellar brain injuries provide some evidence of

cerebellar lateralization, with the left cerebellum being more specialized for processing emotions than the right. In the proposed study we will further test this hypothesis by applying transcranial direct current stimulation (tDCS) – a non-invasive brain stimulation technique – over the left half of the cerebellum. Specifically, we predict that active tDCS stimulation (i.e., anodal (+) or cathodal (-)) will influence the processing of negative facial emotions compared to a sham (pseudo-stimulation) condition.

Major: Honours – Psychology
Minor: Biological Sciences
Faculty Mentor: Dr. Christopher Striemer

THE ROLE OF SEXUAL PRACTICE IN SHAPING PERCEPTION OF CONSENT AND CUE INTERPRETATION

By Sam Smith-Ackerl

Determining whether an individual wants to engage in sexual activity is an essential skill. For most, consent is learned from several common sources like sex education, media, close others, and the internet. However, these sources can be ambiguous, lacking, or absent leading to knowledge gaps and potentially inadequate acquisition or performance of this essential skill. In contrast, among BDSM communities, consent has been described as a central construct where members of these communities have opportunities to experience consent as more affirmative, less taboo, more progressive, and grounded in mutual respect. Scholars have argued that BDSM conceptions of consent may be valuable to improving practices in conventional sexual cultures. The current project examines whether individuals with experience in BDSM cultures exhibit more effective recognition of consent cues relative to individuals with experience only in conventional sexual cultures. Members of both groups were recruited to read through sexual encounter scenarios that varied in their consensuality, and to indicate and discuss all relevant cues. We expected BDSM members would identify more cues, especially implicit ones, and might also identify cues earlier in the scenarios as relevant. We describe trends in participants rated consensuality and cue identification and discuss noteworthy observations from their open-ended discussion of both scenarios. In addition, we present considerations and challenges for recruiting participants from special populations, especially during a pandemic. Consent is multi-dimensional and contextualized. In our discussion, we emphasize that consent is perceived in a variety of ways, and this varies across both domains examined in this study.

Major: Honours – Psychology
Minor: Sociology
Faculty Mentor: Dr. Aimee Skye

A Signature Squeak: Acoustic Features Related to Identity in American Pika Calls

By Pamela Stuart

My research will explore the communication system of American Pika (Ochotona princeps). As vocalizations are established through social and vocal learning with some influence from environmental factors, they can reveal important attributes about the animal's social and

acoustic environments. American Pika may produce vocalizations that aid in individual identification and territory protection, but little research has been conducted indicating acoustic features related to identity in the calls. I will record individual calls from multiple pikas in the Highwood region of Kananaskis, Alberta. The calls will then be measured and compared to determine if any call variation exists between individuals. This exploration into call variation will further contribute to our understanding of what factors influence signature vocalizations in individual species members.

Major: Honours – Psychology
Faculty Mentor: Dr. Shannon Digweed

Rattle calls as individual identifiers in the North American red squirrel (Tamiasciurus hudsonicus).

By Samantha Sydor

Our research focused on the underlying function of the red squirrel rattle call as a form of individual identification for nearby territorial listeners. These calls are produced by squirrels periodically when another is trespassing within the territory or in response to another rattle. We examined whether the call was produced more often within an individuals territory boundary (indicating a territorial function) or if the call reflects self identification for listeners and thus was produced anywhere the squirrel may be (within or outside of the territory). Individual squirrels were trapped and released, at Whitemud Creek, in various locations both within and outside of territory boundaries. Upon release squirrels were monitored for 10 minutes and all rattle vocalizations were recorded. Results indicate that squirrels reliably produced calls, within 10 minutes of release, both within and outside of their territory. These results suggest that the rattle call may function as a form of self identification and not predominantly as an aggressive territorial call.

Major: Honours – Psychology
Faculty Mentor: Dr. Shannon Digweed

Parental Intervention Non-Adherence Mediated by Misinformation About Applied Behavioural Analysis

By Sara Tanasichuk

Wine production is dependent on ethanol, but also on optimal glycerol concentrations, both of which are produced by S. cerevisiae fermentation. Wine characteristics like sweetness levels are influenced by glycerol concentrations. Additionally, elevated glycerol levels can be an indication of abnormal blood sugar levels. In both situations, close observations of glycerol levels are essential. One proposed method of measuring glycerol concentrations is through enzymatic oxidation with a glycerol biosensor. Alditol oxidase (AldO) is a recently discovered carbohydrate oxidase in S. coelicolor. Despite specificity for longer-chained polyols, studies have proposed that AldO can be used as a glycerol oxidase. Using random point mutations, an AldO mutant was isolated and had increased specificity for glycerol. These results suggest that potential for AldO with glycerol biosensor development. This project aimed to produce a glycerol

specific alditol oxidase to be used as a biosensor. A synthetic alditol oxidase (AldOG) gene was used to produce AldOG via cloning methods. The method will also be utilized in conjunction with Dr. Samuel Mugo's work in biosensor construction. Finally, the resulting cloning techniques optimized for AldOG will be used in a future laboratory for a 300-level Biochemistry course currently under development by Dr. Bernstein.

Major: Honours – Psychology
Minor: Sociology
Faculty Mentor: Dr. Russ Powell and Miranda Macauley

Differences in Criminogenic Needs and Risk Prediction Based on Sexual Assault Typology

By Mackenzie Thomas

Typologies have the potential to help us better understand the motivations and behaviours of individuals who commit sexual offences; however, there is limited research about the practical applications of typologies in sexual offender intervention and risk assessment. Using a well-established typology by Knight and Prentky (1990), we examined whether there were differences in criminogenic needs and predictive accuracy of two well-validated actuarial risk tools. Using a sample of 300 individuals who have been investigated for sexual assault, we categorized them into one of the five types of sexual offenders. Consistent with our expectations, our analyses revealed significant differences in the prevalence of six central criminogenic needs examined among the types. Also, in examining the predictive validity of the Static-99R and Static-2002R, it was found that the risk tools were not consistently accurate across the different types of offenders and recidivistic outcomes. These results suggest that individuals with different motivations and patterns of behaviour have unique criminogenic needs that contribute to their offending that should be considered in interventions. Furthermore, considering an individual's sexual offending behaviours and motivation may prove useful in identifying the most accurate risk assessment tool for that offender. Although these results do not offer a complete picture of the application of typologies to sex offender treatment and risk assessment, it provides empirical evidence that supports criminal justice professionals considering offender motivations and patterns of behaviour when addressing individuals who sexually offend.

Major: Honours – Psychology
Minor: Sociology
Faculty Mentor: Dr. Sandy Jung

He Said, She Said, They Said: The Influence of Sex and Gender on Victim Credibility

By Alex Tiller

Studies have demonstrated that gender minorities experience heightened rates of physical and sexual violence victimization relative to cisgendered persons, however little is known regarding how these victims are perceived by prospective jurors. The present study will utilize a between

subject multivariate design evaluating measures of victim credibility and perpetrator guilt. Victims in an ambiguous assault trial will be depicted as either cisgender, transgender, or non-binary, which will vary according to their biological sex (i.e., female, male, no biological information), gender identity (woman, man, non-binary), and type of assault involved (sexual or physical). Participant gender identity also will be considered, with the goal of obtaining a broader sample of non-binary persons by including both student and community sampling methods. All participants will read a fictitious trial transcript and complete a case judgment questionnaire (as mock jurors). Measures of participant bias in relation to gender and sexual identity also will be included, such as the Gender Queer Identity Scale and the Attitudes Towards Transgender Men and Women Scale. We anticipate that non-binary and transgender victims of sexual assault will be rated as less credible than their binary, cisgendered peers. With regards to physical assault, we anticipate that the perception of non-binary and transgender individuals will not influence victim credibility. This study informs our understanding of the influence of biased perceptions on the credibility of sexual and physical assault victims.

Major: Honours – Psychology
Faculty Mentor: Dr. Kristine Peace

Does Information, Psychiatric Illness Type and/or Age Influence Undergraduates' Acceptance of MAiD?

By Christina Tomaras

In 2023, Canadians whose only medical condition is an untreatable mental illness and who otherwise meet all eligibility criteria will be eligible for Medical Assistance in Dying (MAiD). This study will investigate the general attitudes and beliefs of undergraduates towards widening the scope of MAiD to include untreatable mental illness. Participants will be randomly assigned to an information/no information condition about MAiD for untreatable mental illness. Four scenarios will then be presented in which age and illness type are manipulated. We predict that stigmatizing beliefs about certain mental illnesses as well as the age of the individual in the scenarios will influence acceptability of MAiD for mental illness. We further hypothesize that having more information about MAiD for mental illness will influence participants' acceptance of MAiD.

Keywords: Medical Assistance in Dying, End of Life, Euthanasia, Assisted Suicide, Mental Illness, Personality

Major: Honours – Psychology
Faculty Mentor: Dr. Lori Harper and Dr. Russ Powell

Effects of Context on Perceptions of Suicide Referents

By Christina Tomaras

Suicide is perceived as immoral and is highly stigmatized, possibly reflecting language use surrounding instances of suicide. The current study extends recent research showing that a suicide depicted as immoral is associated with an increased preference for the phrase

"committed suicide" over "died by suicide" relative to a suicide depicted neutrally. Undergraduate participants (N = 204) were randomly assigned to read about a suicide depicted as vengeful or altruistic. They then judged how acceptable the family would find statements employing "committed suicide" and alternative statements employing "ended his[her] life", "took his[her] own life," and "died by suicide". Between-group differences were examined with analysis of variance. Results showed that the alternative phrases were deemed to be more acceptable for the altruistic suicide than for the vengeful suicide. We consider implications for stigma surrounding suicide and its reduction.

Keywords: suicide, stigma, language

Major: Honours – Psychology
Faculty Mentor: Dr. Andrew Howell

Is "Just-Get-Started" an Effective Self-Management Tactic to Improve Flossing?

By Jessica Touznik

Healthy behaviours are often maintained by how habitual, or automatic, the behaviour has become. Repeated initiation and repetition of a behaviour has been shown to result in an activity becoming more automatic. Thus, this study experimentally investigated the efficacy of the often recommended "Just Get Started" (JGS) tactic, which increases the likelihood of initiating a behaviour, and assessed whether it increased participants' frequency and automaticity of flossing. Undergraduate students (n = 44) completed baseline surveys before being randomized into one of two groups: (1) a control group in which participants were only told to floss each day for four weeks, and (2) and a JGS group that was additionally given the recommendation to use the JGS tactic, that is, whenever they did not feel like flossing, to pick up the floss and floss one tooth before deciding whether or not to continue. Participants reported their frequency and automaticity of flossing after 2 and 4 weeks. Results showed that although both automaticity and flossing increased over time, there was no significant difference between the JGS and control group on these measures, suggesting that the JGS rule provided no extra benefit. Participants who made use of the JGS tactic, however, reported that the rule helped them initiate and continue flossing, which suggests that the JGS rule may be perceived as more useful than it actually is. Limitations of the study include a small sample size and the over-reliance on self-report measures. Keywords: Just-Get-Started, habit formation, behaviour frequency, automaticity, flossing

Major: Honours – Psychology
Faculty Mentor: Dr. Russ Powell

Examining the role of the cerebellum in visuospatial attention: Can cerebellar lesions lead to spatial neglect?

By Ryan Verbitsky

Previous studies examining patients with cerebellar damage, and functional brain imaging in healthy adults, suggest that the left cerebellum plays an important role in visual attention

through its connections with the fronto-parietal attention network in the right cerebral hemisphere. Damage to the right temporal-parietal cortex often results in spatial neglect – a disorder in which patients are unable to attend to objects on the contralesional side. Given the known connections between the cerebellum and attention networks in the cerebral cortex, the aim of the present study was to determine if cerebellar lesions might also result in symptoms of spatial neglect. To answer this question, we analyzed data from 25 patients with focal cerebellar stroke (9 left; 12 right, 4 bilateral) who completed three classic neglect assessments – line bisection (LB), cancellation, and figure copying. These data were compared to 81 age-matched healthy control participants from a previously published dataset. At the group level, there were no significant overall differences in LB or figure copying performance. However, patients with left cerebellar lesions missed significantly more left than right sided targets on star cancellation, compared to controls. A voxel-based lesion symptom mapping analysis indicated that increased omissions on the left side of the star cancellation task were correlated with damage to in lobule VII/Crus I of the left posterior cerebellum. These results suggest that damage to the left lateral cerebellum can result in an increase in neglect-like symptoms that are indicative of dysfunction in the right fronto-parietal attention network. Keywords: cerebellum, visual attention, fronto-parietal attention network, spatial neglect.

Major: Psychology
Minor: Biology
Faculty Mentor: Dr. Christopher Striemer

Increasing Independent Self-Care in Autistic Children through Telehealth Parent Coaching

By Alana Walker

Autistic Children can struggle to perform independent self-care behaviours and can overexert caretakers as a result. The long-term effect of this overexertion is burnout. To address this problem, we will recruit between one and three child-parent dyads to participate in a six to eight week long clinical trial as informed by the practice of Applied Behaviour Analysis (ABA). The children in these dyads will have a deficit in the frequency of the independent performance of one of the following self-care behaviours: hygiene, sleeping, or eating. Then, we will use telehealth parent coaching to teach parents to implement chaining interventions with their children. We will guide parents and children through the chaining intervention for one hour per week for six to eight weeks while taking data on the child's independence across steps and taking data on the parent's correct implementation of the intervention. Between sessions, parents will continue to implement the intervention. Upon session cessations, the data will be organized into graphs which will demonstrate the change in frequency of independent self-care behaviours performed by the children over the course of the study, and these graphs will be analyzed. We expect that this chaining intervention will increase the frequency of the respective independent self-care behaviours from each of the children. If possible, an across-participants analysis will be performed to better conceptualize the effectiveness of the performed interventions, and a relevant conclusion will be provided.

Major: Honours - Psychology

Faculty Mentor: Dr. Russ Powell and Miranda Macauley

Storytelling Abilities of Children with Cochlear Implants (CI)

By Nicole Walklin

The purpose of the present study is to assess the storytelling abilities of children with cochlear implants (CI). This creative delivery combines both linguistic and cognitive skills, providing an indication of children's social-communicative development. Insight into the macro and microstructure level features of CI children's stories can reveal aspects of a child's language grammar development. CI children's storytelling abilities, along with age-matched normal hearing (NH) peers, were assessed in topics on personal events (autobiographical memory) and in topics on novel fictional events (semantic memory). The child selected a story topic among four options then told a story in relation to the topic, creating a total of four stories. Audio recordings were transcribed and the narratives were analyzed for overall structure, conjunctions, and referents. Preliminary findings reveal that CI children's narrative ability was similar to that of their NH peers in personal stories. However, their narrative abilities were lower in fictional topics than in personal story topics. This was attributed to their difficulties in the use of conjunctions. The findings will assist parents, educators, and practitioners in identifying learning conditions that can optimize CI children's language outcomes through creative language activities.

References

Crosson, J., & Geers, A. (2001). Analysis of narrative ability in children with cochlear implants. Ear & Hearing, 22, 381-394.

Major: Psychology
Minor: Sociology
Faculty Mentor: Dr. Tara Vongpaisal

Communicating Consent: Testing Taxonomy Based Training Methods

By Shannon Walters

Previous research has found that our practices in relation to sexual consent are heavily influenced by the knowledge and training we have on the topic. While consent training contributes to our understanding of this critical concept, best practices in learning principles and knowledge translation suggest that more can be done to create effective and durable training programs. The use of virtual platforms for training also requires adept considerations as to impactful training modalities. As such, the present study was designed to assess the extent to which varied methods of virtual training produce a better understanding of consent. Using a mixed methods design, participants will be exposed to one of six virtual consent training procedures that vary according to the visual modality of presentation (basic/graphic) and level of learning taxonomy (low/mid/high). Measures of consent attitudes, rape myth acceptance, and consent knowledge will be assessed both before and after training to evaluate changes in both understanding and application. We anticipate that training that is both visually impactful and aligns with high level learning principles will yield the greatest change in consent beliefs and

knowledge. This study has implications for how consent training impacts individuals' perceptions of consent and will be part of a larger study evaluating how durable consent training is over time.

Major: Honours - Psychology
Faculty Mentor: Dr. Kristine Peace

Social Work

Research Reflections: Student Experiences of a Systematic Literature Review on Social Care Strategies for Older Adults During the COVID-19 Pandemic

By Beverly Michel Baluyot and Elaine Tran

There is currently no research that synthesizes, analyzes, and evaluates studies that looked into social care strategies in geriatric residential care settings in Canada. Funded by the Social Science and Humanities Research Council (SSHRC), this systematic review aims to examine emerging evidence on social care strategies in residential care since the beginning of the COVID-19 pandemic. The study will identify current research gaps to provide recommendations for social workers and other professionals on future directions for social care for older adults, living in residential care settings. Conducting a systematic review requires time management, teamwork, and effective communication skills. Systematic reviews also follow a distinct and rigorous process. The presentation will focus on our experiences and learning as undergraduate research assistants in conducting a systematic literature review. We will also provide a status report of the research progress since August 2021.

Major: Social Work
Faculty Mentor: Dr. Anna Azulai, Dr. Hongmei Tong and Alison Pitcher

Indigenous Beading Knowledge in context of International Social Work Research

By Caren Robinson

Our poster presents the phases of our research and firsthand results of data analysis through beadwork. Our study involved three semi-interviews with local Indigenous artists to explore from their perspective about how their own cultural identity expressed through beadwork can inform social work practice. As a social worker with a Cree-Metis background and co-investigator, this study allows me to connect with my own Indigenous ways of knowing while incorporating non-westernized ways of learning in my social work practice. The poster will focus on 1) presenting the study's phases, 2) introducing the firsthand results of the participants' understanding of beadwork from their perspective and 3) opening the reflection around how beadwork can contribute to a culturally centered way of learning and practicing social work. Our poster's purpose is to open the dialogue for cultural identity grounded social work practice by creating space for a decolonized framework.

Major: Social Work
Faculty Mentor: Dr. Somnoma Valerie Ouedraogo

Meeting in the middle: Hannah Arendt and Jose Ortega y Gasset on public discourse.

By Patricia Anderson

The German-American political thinker Hannah Arendt and the Spanish philosopher Jose Ortega y Gasset are both phenomenologists who point out not only the importance of public discourse and social activity as part of our human nature, but also the consequences of their lack of presence in modern society. They do not coincide with each other completely, but what they do conceive similarly and where they differ offers an opportunity for a deeper understanding of how important it is for us as humans to create, make better, and preserve our shared world.

Through an examination of the similarities and differences in 'the rise of the social' (Arendt) and 'the rise of the masses' (Ortega), this paper explores how both seek to reclaim the lost space between people, a space we, as social citizens, enter in order to dialogue with one another and create our political world. After laying out what Arendt and Ortega each mean by the social and the masses, and how each see its evolution and rise to prominence, this paper will then analyze what Arendt and Ortega each see as a higher form of activity - public, political and social activity, namely discourse, in the case of Arendt, and individual reflection and responsibility, in the case of Ortega. Finally, the paper concludes with a discussion of what is ultimately at stake, why this public, political activity is important to recover in modern society of today.

Major: Sociology and Philosophy
Faculty Mentor: Dr. Alexander Castleton Flores

Beyond Bullets: How Ukrainian Families are Being Impacted by the Russian Invasion of 2022

By Dallas Bilyk

This research topic will explore the detrimental effects that the Russian invasion of Ukraine has had on families beginning on February 24th, 2022. Following the violent attacks by Russian troops, the citizens of targeted Ukrainian cities have started to evacuate and seek refuge in the western parts of the country and neighbouring countries. The sudden displacement of millions of people has put an intense strain on families. Sociologically, this war will impair how families will be able to function for generations which will have a severe impact on familial dynamics and interactions. The war can be analyzed utilizing a conflict perspective, as it has been manufactured to benefit Russians and inflict long-term traumatic effects on Ukrainian citizens. As Ukrainian troops come together to defend their country against Russian forces, many consequences of war may occur, but this project will focus on the existence of intergenerational trauma, patriarchy, and migration. The family structures of both Ukraine and Russia will be significantly transformed because of the invasion, whether that be the extended families that exist between the two countries' borders or the millions of displaced individuals and families that are forced to separate from their loved ones due to living within a war zone.

Major: Sociology
Minor: Anthropology
Faculty Mentor: Dr. Michael Gulayets

Ukrainian Students' Involvement in Russia's War on Ukraine

By Alyssa Dechant

In the context of world history, university students have played an essential role in advocating for change. Student activism as a phenomenon is seen throughout history, ranging from American student involvement against the Vietnam War, Tiananmen Square in China, Germany's Velvet Revolution and Egypt's Arab Springs. This presentation explores student involvement in Ukraine during Russia's invasion by analyzing university students' active roles, including supporting and supplying resources for refugees and soldiers, raising a cyber militia to fight Russian disinformation and international calls for action. This examination compares the theoretical background of why students mobilize and contrast theory to what we currently see in Ukraine. This analysis concludes by examining the impact and implications of students' involvement in this conflict by measuring current societal and political change.

Major: Sociology
Minor: History
Faculty Mentor: Dr. Michael Gulayets

Importance of Symbolism in the Russian War on Ukraine

By Shaelyn Durocher

Ukraine is a country with an extensive history of war and oppression. As such, a large part of their collective culture revolves around patriotic symbolism. Patriotic symbolism refers to symbols representing a nation's history, heritage, and culture. This type of symbolism has recently been emphasized over the world's media as the country fights for sovereignty once more during the Russian Ukrainian Conflict. This presentation will demonstrate the importance of symbolism within Russia's invasion of Ukraine and how Ukraine has utilized symbols to inspire and rally the masses through collective representation. In addition to how collective representation and collective effervescence can elevate the effectiveness of propaganda materials.

Major: Sociology
Minor: English
Faculty Mentor: Dr. Michael Gulayets

Honours Thesis Proposal: A Sociological Analysis of the Normalization of Weight-Cutting in Combat Sports

By Alexandra Gagnon

This presentation outlines an honours research proposal to analyze the normalization of weight-cutting in combat sports from a sociological perspective. While there is extensive research on the various methods used by athletes to make weight such as combining dietary restriction with

dehydration and rapid weight-loss techniques (Artioli et al., 2019; Connor & Egan, 2019; Reale et al., 2017) and there is also literature on the negative effects of such practices for athletes (Franchini et al., 2012; Green et al., 2007; Lakicevic et al., 2021; Oöpik et al., 1996; Strauss et al., 1985; Sundgot-Borgen & Garthe, 2011), little is known about the processes wherein athletes come to learn these practices. Through the use of in-depth qualitative interviews with Judo athletes recognized at the national level, this research will explore the process whereby rapid weight loss is learned and reinforced among high-performance athletes.

Major: Honours - Sociology
Minor: Psychology
Faculty Mentor: Dr. Diane Symbaluk

The Lorax Effect: A Statistical Analysis of Environmental Concern in Canada

By Alexandra Gagnon

As the globe continues to experience the effects of climate change, it is crucial that researchers continue to investigate factors that contribute to individuals' attitudes concerning climate change. This study utilizes survey data of 1,539 Canadians gathered in 2019. The data was analyzed using ordinary least square linear regression to analyze how political ideology, gender, and level of education correlate with individuals' level of environmental concern. Females are more concerned, on average, about the environment, compared to males. Within the Canadian context, there is no statistically significant relationship between level of education and concern for the environment. Overall, Canadians seem to be relatively concerned about the environment regardless of their level of education. Canadians with a conservative political ideology have a lower level of environmental concern in comparison to their liberal counterparts. Canadians gender identity seems to influence their level of environmental concern, although, more representation of non-binary individuals is needed in future data-gathering to analyze non-binary individuals' level of environmental concern. The paper offers further discussion of these variables' effects on level of environmental concern.

Major: Honours - Sociology
Minor: Psychology
Faculty Mentor: Dr. Shelley Boulianne

The Hidden Weapon of the Russia-Ukraine War

By Harrison Haug

This presentation aims to examine the usage of disinformation in the Russia-Ukraine War. Disinformation is a purposefully false piece of information that seeks to influence people. I argue that this is one of, if not the most prominent, disinformation wars that we have seen. Russia is a leading proponent of disinformation as they are trying to frame the invasion of Ukraine as having a more altruistic purpose. During this examination of disinformation, I will be looking at a few select pieces of disinformation from the perspective of both Russia and Ukraine and the effect that this disinformation has on both the Russians and Ukrainians. The result of this disinformation war is that Ukraine is constantly on the defense and continually trying to provide the truth to its citizens and the rest of the western world. NATO, the

European Union, and the United States are consistently fact-checking and disproving the claims that Russia and its state media make.

Major: Sociology and Political Science
Faculty Mentor: Dr. Michael Gulayets

Disability and Houselessness

By Shelby Hays

A disproportionate amount of people experiencing houselessness also report having disabilities. This talk examines the process of falling into, and getting out of houselessness via supports like Alberta Works and Housing First initiatives in Edmonton.

Major: Sociology and Psychology
Faculty Mentor: Dr. Alissa Overend

Gender Gap or Gender Differences? Gender and Political Participation in Canada

By Nicole Houle

Unequal participation in certain types of political engagement creates unequal influence on political and civil matters (Boulianne, 2022). Studies find that men and women tend to do a similar amount of political participation, with women engaging in more private and flexible forms, and men participating in more direct and collective forms (Bode, 2017; Coffé & Bolzendahl, 2010; Van Duyn et al., 2019; Pfanzelt & Spies, 2019). However, more data is needed when considering Canadian trends, especially when it comes to the causes of these trends. In this study, I conduct statistical analysis of secondary data from a February 2021 Canadian survey (n=1568) designed by Dr. Shelley Boulianne. I determine which forms of political participation have gendered participation gaps and whether or not these are related to conflict avoidance tendencies and having political female role models. I find few gender differences in political participation. Some small gender differences persist in online forms of political participation, such as signing petitions online and commenting on news sites. Men were more likely post comments on news sites, compared to women; women more likely to sign online petitions, compared to men. As such, political participation moves online, the gender gap may be reproducing itself in online spaces.

Keywords: gender; political participation; socialization; conflict-avoidance; role models

Major: Honours - Sociology and Psychology
Faculty Mentor: Dr. Shelley Boulianne

Racially Bias Media Representation of the War in Ukraine and the Impact on our Empathetic Responses

By Madelaine Jacknisky

This study examines the media representation of the war in Ukraine and compares it to media representation of other global conflicts. This research recognizes the influence that media can have on society's reactions to global events and sought to examine the responses of Canadians

to the war in Ukraine. Two primary themes were identified within the media content that highlight significant racial discrepancies. These discrepancies exist in the way this war is covered and discussed in comparison to wars where we do not see white civilians as the primary victim. These themes are outlined and referred to throughout this study as "shock value" and "a focus on personal stories". Canada's response and levels of empathy for the victims of the war in Ukraine also differ significantly from that of other wars, both on the individual and institutional levels.

Major: Honours - Sociology
Minor: Business Law
Faculty Mentor: Dr. Michael Gulayets

A Spectrum of Freedom of Speech

By Rachel Koski

This presentation will explore the notion of freedom of speech by cross comparing the current events on the Ukraine and Russia war with Canada. Through the lens of a sociological perspective this presentation will demonstrate how freedom of speech can be affected by world wide events such as wars and protects. The primary focus will illustrate how freedom of speech can be on a spectrum ranging from full freedom to absolute government control of all communication within the country.

Major: Psychology
Minor: Sociology
Faculty Mentor: Dr. Michael Gulayets

Russian Propaganda and Moral panic: the Implications for North America

By Ayla Law

This presentation aims to explore Russian propaganda and how it relates to Stanley Cohen's idea of Moral panic by examining the conspiracy theories of Biolabs in Ukraine. This will be done by exploring the Five Stages of a Moral Panic and contrasting them to tweets by well-known Twitter users. The goal of this presentation is to show how Russian propaganda is causing a moral panic in the united states and how in turn, that can cause a lack of institutional trust in the government. A secondary goal of this presentation is to both show the scope of Russian propaganda on Social Media sites and link propaganda to popular conspiracy theories such as Q-anon and Covid Conspiracies.

Major: Sociology
Minor: Psychology
Faculty Mentor: Dr. Michael Gulayets

Instagram and Politics Systematic Review

By Samantha Mullin

Instagram is used by millions across the globe. We examine how researchers have used Instagram to study politics. In June 2021, we searched SCOPUS and Web of Science to identify

647 studies about Instagram and politics. Of these, 75 studies were deemed relevant studies in terms of being related to politics and containing original data (i.e., included a distinct methods and findings/results section). We find a surge in studies in 2018. We find that about half of the studies are based in European countries and about 23% are based in the United States. This finding is contrary to the study of other platforms and politics, which have documented that the United States is the focal point of research. About half of the studies focus on political elites, whereas only 26% are focused on citizens. Only 6% of studies use survey data, surveys tend to be the mechanism for social scientists to collect data about citizens. Instead, scholarship has focused on digital trace data to study this platform. This review allows us to see if the use of Instagram for politics has changed over time, cross-national differences in the study of Instagram and examine the different methods used to study Instagram. This systematic review helps identify the research gaps and is useful for launching future projects about Instagram and politics.

Major: Psychology and Criminology
Faculty Mentor: Dr. Shelley Boulianne

#AfricansinUkraine: A Critical Race Theory Perspective of Racism in Times of Crisis.

By Randi Sempala

This presentation will take a critical race theory perspective to analyze the effects of and responses to racism in times of crisis. The background underlying this presentation comes from the social media outcry that emerged during the beginning of the Ukrainian-Russian conflict of #AfricansinUkraine. This call to action occurred after African students and diasporans living in Ukraine experienced discrimination and anti-black sentiment at the border to exit like the other refugees. Feeling unheard, these black refugees took to social media to raise awareness of their plight to gain the aid, funding, and support that was lacking as they ran towards safety in neighbouring countries.

Major: Sociology
Minor: Digital Experience Design
Faculty Mentor: Dr. Michael Gulayets

Concepts of Freedom: A Comparison of Societal Responses to Loss of Freedom Contrasting Canada and Ukraine

By Lauren Shaw

This presentation will explore concepts of freedom by analyzing societal responses to loss of freedoms in a cross-comparison via the Russian-Ukrainian war and the Canadian trucker convoy protest. The primary focus of this presentation is to provide an analysis on how the Russian-Ukrainian war has shed light on western privilege. The presentation's goal is to bring forth perspective to Canadians in a time where wearing a mask and prioritizing public safety is attempting to overshadow Ukraine's lack of safety and fear while in a state of war.

Major: Sociology

Minor: Psychology
Faculty Mentor: Dr. Michael Gulayets

Performance Activism within Contemporary Political Conflicts and Social Movements: Russia's Invasion of Ukraine

By Maya Stephens

While activism within political and global conflicts is not a new concept, it has changed immensely since the introduction of digital technology and the widespread availability of information from across the globe. This presentation explores performance activism, which can be seen as outward support for a cause often driven by personal and social gain. This presentation examines the role of performance activism within Russia's invasion of Ukraine, and whether this type of activism has a place within these conflicts, or if this virtue signalling is solely ego-driven. The analysis compares support for Ukraine with previous social movements and explains that while outward support may decrease; realized consequences still come from these movements. This presentation discusses how performative activism, while seemingly pointless does have a place in contemporary political and social movements.

Major: Sociology
Minor: Psychology
Faculty Mentor: Dr. Michael Gulayets

Mothering in the Context of the COVID-19 Pandemic

By Christine Zolondek

Since the COVID-19 pandemic hit North America in 2020 life has yet to return to "normal." New realities include remote learning, physical distancing, lockdown measures, and mandatory masking. The pandemic has increased social isolation, stress and anxiety, employment loss, and financial instability. Even more, the domestic workload that mothers are usually responsible for in addition to their paid work, what Arlie Hochschild (2012) refers to as 'the second shift,' has been compounded and expanded to create a 'third' and 'fourth' shift with the addition of homeschooling and the increased carework and 'worrywork' that burdens mothers during a crisis (O'Reilly & Green, 2021, p. 21). Mothers are the unrecognized 'front-line workers' of the pandemic – caring for sick family members, trying to balance working from home with childcare and homeschooling that has pushed mothers to their breaking points. This has left many mothers overworked, overstressed, overwhelmed, which takes a substantial toll on their well-being. The purpose of this study is to examine the pressures, changes, and challenges that mothers face surrounding paid work, care, and family during the pandemic – and the strategies they use to navigate this difficult situation. This study involves 11 qualitative interviews with Canadian mothers. The aim of this study is to discover how women define and understand their experiences of pandemic parenting and how their experiences and choices were shaped by their constraining circumstances and contexts. It explores the norms surrounding 'who cares?' and how disparities in carework underpin many of the gender inequalities women experience that blur the boundaries between their private and public lives.

Major: Honours - Sociology
Minor: Political Science
Faculty Mentor: Dr. Joanne Minaker